

Legends of Kallisti MUD
Builder's Handbook, Version 3.0
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www.legendsofkallisti.com

TABLE OF CONTENTS

Section	Description	Page
I	OVERVIEW	3
II	TERMINOLOGY	3
III	THE BASICS	4
IV	WORLD FILE (.wld)	11
V	MOBLIE FILE (.mob)	22
VI	OBJECT FILE (.obj)	42
VII	SHOP FILE (.shp)	44
VIII	TRAINER FILE (.trn)	44
IX	ZONE FILE (.zon)	47
X	QUEST FILE	51
XI	ONLINE CREATOR (OLC)	53
XII	SPECIAL PROCEDURES (Progs)	53
XIII	PUTTING IT ALL TOGETHER	56
XIV	BUILDER'S RULES AND GUIDELINES	57
XV	QUICK REFERENCE	58
XVI	EQUIPMENT LIMITS	61
XVII	CREDITS	62

I OVERVIEW

This document is a tutorial for new builders as well as a reference guide to those who are more experienced. Although there are numerous editors for DikuMUDs, it is important to learn how to build an area and connect it into the MUD. In the case that a problem should arise with your area, it is important for you to know why the problem occurs and for you to know how to fix it (section XI will provide some details of the online creator that LoK uses). With a working knowledge of how to build an area, along with how some of the mechanics work, a better and more suitable area can be produced – and it will have a much better chance of acceptance for Legends of Kallisti MUD.

Contact the Head Builder on legendsofkallisti.com 4000 to get started. Please read this handbook first, and follow the guidelines about submitting area proposals.

To receive a zone assignment, you must submit a **proposal** ahead of time, which describes the area in detail. Ensure that your proposal has enough detail to clearly show what you have in mind and how your new area fits into the theme and structure of the MUD. Below is a list of what a basic proposal should include:

- zone name
- suggest levels
- overview/storyline (how it ties to the current mythos of LoK)
- notable mobiles
- notable objects and equipment
- notes – any special procedures (progs) if you wish to add them, puzzles, etc.

Please type `help building` in the MUD to check for any updated proposal requirements. This is also a good time to check `help ptest` to familiar yourself with the zone review and playtesting process.

A note on fonts and stylization used in this document:

- the *Courier New* font denotes code and commands to be typed in the MUD.
- *italics* denotes something that is either not yet implemented or is unavailable for your use.

II TERMINOLOGY

Here are some common terms used in building, and in this handbook:

Bitvector	This is a number assigned to a flag in such a manner that more than one may be used by simply adding the numbers together. Bit vector numbers are in the form x^2 .
Desc	Short for 'description.'
DB	Database. The files that make up the 'world' of a MUD.
Flag	A bitvector that tells the MUD that a particular monster, objects, or room has a certain quality. (i.e. 'Dark,' 'Magic,' 'Aggressive') See FLAGS in section III.
Field	A flag location. i.e. 'Dark' and 'Indoors' are two separate flags in the same field.
Mob	Mobile. A monster.
Nobits	This shows up if <code>stat</code> is used on something with no affects.
NPC	Short for 'non-player character.' Used synonymously with 'mob.'
Obj	This refers to the object file.
PC	Short for 'player character.'
Tilde	This is a tilde: ~ . It signifies the end of a line or a field in some of the database files.
Trn	This is an optional portion of the zone. It's where characters can learn or train new skills.
Shp	This is an optional portion of the zone. It's where characters can buy or sell items.
Spec Proc	Short for 'special procedure' the special routines that the MUD should use with a mob, obj or room. This will be explained fully in section XII.

Vnum	An object, monster, or unique identification of room number. Stands for 'Virtual Number.'
Wld	These are the rooms of the zone.
Zone	Used synonymously with 'area.'

III THE BASICS

When you start an area, a common question is "What is my zone assignment?" In order to prevent any backlog on those requests, we suggest that you use easily substituted letters in place of the zone number. (Example: QQA, QQB... QQZ – each standing for a separate zone number.)

For all examples, the area under creation is referred to as 'Handbook' or 'example area.' We recommend emacs or vi for Unix platforms, and something simple like Notepad for Windows platforms. Note that all files created in Word Perfect, MS Word, etc. **must** be exported into or saved in ASCII format before they can be used.

FILES

For each area, there are six files that can be created for inclusion into the Legends of Kallisti MUD's database. All except the shop file and the trainer file are **mandatory**.

Area.wld	The file that contains all the information on the rooms of an area.
Area.mob	This file contains all mobile information.
Area.obj	This file contains all object information.
Area.shp	Information on shops . (This file does not have to be included if there are no shops.)
Area.trn	Information on skill/spell trainers in your area, if any.
Area.zon	A 'meta-file' that lists which mob/obj goes where, who gets what, how often the area resets, etc.

Quest files are handled separately and are not mandatory.

FLAGS

A flag tells the MUD that there is something special about a mob, room, or object. In the sections below, lists of flags will be given with a number and a bitvector, next to it. Here is the list of some of the room flags that will appear below in the area.wld section:

1	a	DARK	16	e	LAWFUL	256	i	NO SUMMON
2	b	DEATH	32	f	NEUTRAL	512	j	PRIVATE
4	c	NO MOB	64	g	CHAOTIC	1024	k	GODROOM
8	d	INDOORS	128	h	NO_MAGIC	2048	l	PEACEFUL

For example, when building a small cellar, you would choose the flags 'Dark' (a) and 'Indoors' (d). To give one room two flags you put the alpha characters together and place that in the flags spot of the data of that room. Thus for this example, 'Indoors' + 'Dark' = ad.

VIRTUAL NUMBERS

Every mob, object, and room must have its own virtual number for the MUD to identify it. Each number must be unique among its own type. You can have mob 2200, obj 2200 and room 2200, and they will all be different.

THE END OF THE FILE

When you arrive at the end of your .obj, .mob, .zon, .wld, .trn, or .shp file, you must put the following at the end:

```
#99999
$~
```

This allows the MUD to read past through and past the files. Failure to do so will cause the MUD to crash upon reboot.

IV WORLD FILES

The following is an example of a room file:

```
#2200
The First Room~
  You are standing in the first room of this area. There are sure to be a few more
rooms to follow, soon to be chock-full of adventure, danger, romance, and strange
gerbils from Morovia. There is a sign hanging from the east wall here, and a large
steel grate bars the way to the north.
~
22 d 0
D0
You spot the Second Room to the north, behind a large steel grate.
~
steel_grate~
1 2200 2201
D1
You spot a third room to the east.
~
~
0 -1 2202
E
sign~
The sign says:

  WELCOME TO THE FIRST ROOM!
~
E
second description~
This is merely to show you that you need to have a second E after or when you
use an extra description.
~
S
#2299
The Last Room~
  This is the last room of the area. There were many rooms between this and
the last.
~
22 adj 0
D3
A solid brown door bars your path.
~
solid_door~
3 -1 2298
S
#99999
$~
```

EXPLANATIONS

#2200

This is the virtual number of this room. Totally unique; no other room in the DB will have this number.

The First Room~

Short description: the 'title' of the room, typically not more than 5-6 words long. Note the tilde marking the end of this field.

You are standing in the first room of...

~

The long description of the room. This is what a player sees if s/he types `look` in that room. What is in this section is up to you. More about the various types of descriptions can be found below. Note that a tilde follows on a line by itself. This is important, so that the mobs and objs in the room won't be jumbled onto one line.

22 d 0

The **first number** is the zone number of this room; what zone should the MUD consider this room to be in for game purposes. Please see 'zone numbers' in section III of this handbook. The **second character** is the room flag value. Please see 'flags' in section III of this handbook, and 'room flags' below. The **third number** is sector type. Please see 'sector types' below.

D0

An exit to direction 0. The section on 'exits' below will shed more light on this subject.

You spot the Second Room, behind a large steel grate.

~

Direction description; what a player would see if he/she typed `look north`. Note the tilde on its own line afterwards. This is so that a carriage return will be sent after the direction description. In the case of the next line, no `<CR>` is sent.

steel_grate~

What words can be used to manipulate the door. These two words can be used in conjunction with `open`, `close`, `pick`, and `look` commands, etc. If the room were to have normal exits, a tilde would be left on this line alone. Note a new feature in the world file; the underscore character. In the old days, this could not be done. See the world file section for details on how this differs from using `grate steel`.

1 2200 2201

The **first number** is the door value, 1 being open/close/pick/lock and unlockable. This and the other numbers will be explained more fully under 'exits' below. The **second number** is the key's number, the virtual number of the object that can be used to lock or unlock this door. The **third number** is the vnum of what room this exit leads to.

E

Tells the MUD there is an extra description coming.

sign~

The keywords used to look at the extra description (i.e. `look sign`.) Note the tilde ending the field.

The sign says:

~

The text of the extra description. Again, note the placement of the tilde on its own line.

S

End-of-room character.

DESCRIPTIONS

Descriptions are self-explanatory. However, the placement of tildes is very important.

Short Desc - The short desc is placed at the top of the room description, and can be seen even if the player is in 'brief' mode. Simply put, this is the title of the room, so it is sometimes referred to as the 'title desc'. Short descs should be kept to one line minimum... the shorter the better. In fact, it should just be the shortest possible description of this room: 'A Dark Tunnel,' 'The Bakery,' or 'Ms. Celande's Office.' A short desc follows this format:

```
Title of Room~
```

Long Desc - The long desc is the full description of the room, which a player will typically see when entering or by typing `look`. When creating a long desc, please keep in mind to word wrap each line to **79 or less** characters, and put the ending tilde on a line by itself.

```
Long Desc
~
```

Extra Descs - An extra desc (of which there can be many for each room), is something else specific to look at, not normally seen just by typing `look`, or entering the room. An extra desc is started by an `E` (a separate `E` for each extra desc in the room), followed by the keywords that can be used to look at this description on the next line. Each keyword is separated by a space, followed by a tilde at the end of the line. Then, the description itself, followed by a tilde on its own line:

```
E
keyword1 keyword2~
You spot the keywords. They look important!
~
```

ROOM FLAGS

Please consult the section on flags in section III for how bitvectors are added and used. Briefly, add each flag's corresponding values that you want for a particular room to find your room flag number. A zero signifies no flags.

0	-	NONE	No flags.
1	a	DARK	Character cannot see without a light source.
2	b	DEATH	Death trap.
4	c	NO_MOB	Monsters cannot enter this room, though you can <code>LOAD</code> a mob here.
8	d	INDOORS	Players in this room will not get weather messages.
16	e	LAWFUL	Players with an evil alignment cannot be summoned here.
32	f	NEUTRAL	Players with a neutral alignment cannot be summoned here.
64	g	CHAOTIC	Players with a good alignment cannot be summoned here.
128	h	NO_MAGIC	No magic may be used in this room.
256	i	NO_SUMMON	Player may not be summoned from this room.
512	j	PRIVATE	Portals will not go here; Immortals cannot use <code>goto</code> if two or more players are here.
1024	k	GODROOM	Lower level (< 56) Immortals may not enter these rooms. PCs won't show up on <code>where</code> unless an Immortal is using this command. Mobs can walk in and use <code>goto</code> to enter this room; PCs can walk in if possible.
2048	l	PEACEFUL	Mobs and players cannot instigate an attack, unless outlaw.
4096	m	TUNNEL	Limited size can enter these rooms. Area spells can harm all in the room.
8192	n	FREEZING	Player will take ice-based damage.
16384	o	SILENT	No spoken communication allowed.
32768	p	DEAF	No form of communication will be heard in this room.
65536	q	PLR HOUSE	<i>Do not use; this room is a player house.</i>
131072	r	HOUSE CR	<i>Do not use; used internally.</i>

262144	s	CAMP	Room where players can camp.
524288	t	ARENA	Arena room. (Players won't really die if pkilled.)
1048576	u	PKILL	Open player killing allowed.
2097152	v	CLAN	<i>Do not use; clan room or zone.</i>
4194304	w	ATRIUM	<i>Entrance to a house. Not used anymore.</i>
8388608	x	REGEN HP	Increased hit point regeneration. (Do not use without approval.)
16777216	y	REGEN MP	Increased mana regeneration. (Do not use without approval.)
33554432	z	TRAP	<i>Do not use; used internally.</i>
67108864	A	BLOODTRAIL	<i>Do not use; used internally.</i>
134217728	B	OVERWORLD	<i>ASCII-mapped area. Check with admin before using.</i>
268435456	C	BANK	Room contains a bank.
536870912	D	WILD MAGIC	Spells have various affects.
1073741824	E	FIRE	Player will take fire-based damage
2147483648	F	LIGHTNING	Player will take electrical-based damage.

SECTOR TYPES

The 'sector type' of a room determines how many movement points it costs to enter that room. This is not a flag type item: choose only one, and use the value.

0	INSIDE	No weather messages.	11	DESERT	Major water consumption.
1	CITY	Roads and streets.	12	ARCTIC	Must have snowshoes.
2	FIELD	Grass, plains.	13	UNDERGROUND	Area spells can harm all.
3	FOREST	Trees.	14	SWAMP	Trolls will sneak.
4	HILLS	Mini-mountains.	15	OCEAN	<i>For the Overworld (flag B)</i>
5	MOUNTAIN	Need climbing gear or fly.	16	BRIDGE	<i>For the Overworld (flag B)</i>
6	WATER, SWIM	Can't sleep here!	17	TRAIL	<i>For the Overworld (flag B)</i>
7	WATER, NOSWIM	Need boat or fly.	18	MTN. PEAK	<i>For the Overworld (flag B)</i>
8	AIR	Must be flying.	19	PASTURE	<i>For the Overworld (flag B)</i>
9	WATER, UNDER	Need water-breathe abil.	20	FENCE	<i>For the Overworld (flag B)</i>
10	JUNGLE	Need hacking weapon.	21	PORTAL	<i>For the Overworld (flag B)</i>

EXITS

Exits use the letter D and a number:

0	NORTH	1	EAST	2	SOUTH	3	WEST	4	UP	5	DOWN
---	-------	---	------	---	-------	---	------	---	----	---	------

The exit description is used for when a player types `look <direction>`. In most cases, this should be a vague description of what the next room might be, and is followed by a tilde on a line by itself. Thus, an exit D4 is an upward direction, while D2 would be to the south. Each exit starts with its own direction field, and contains an exit description and door keyword list (both of which can be left blank with a tilde), and a fourth line containing a door type, key number, and exit-to-room number. Rooms without exits need no direction fields, and this section may be safely ignored.

The next field is the door keyword list, used for manipulative door actions, such as open, close, pick, etc. These words are separated by a space, and are followed by a tilde on the same line. Use an underscore character “_” in the door name, to give it a better look within the game. Using `heavy_door`, for example, will result in messages like “You open the heavy door” in the game, which looks much better and less awkward than “You open the heavy.”

Exits may have the following flags for the type of door:

0	0	NORMAL EXIT	No door.
1	a	NORMAL DOOR	IMPORTANT: Should always be set if a door exists.
2	b	CLOSED	Door is closed.

4	c	LOCKED	Door is locked.
8	d	WIZLOCK	Door only unlocked by a key or Immortal.
16	e	BARGEPROOF	Door may not be barged open.
32	f	KNOCKPROOF	Door may not be knocked open.
64	g	PICKPROOF	Door may not be picked open.
128	h	SECRET	Door will not show up under look <direction>.
256	i	FALSE	The door does not go anywhere.
512	j	CLIMB	Must have climbing gear or fly to use exit.
1024	k	NO MOB	Mobs may not pass through this door.
2048	l	FLY	Characters must be affected by fly to use exit.
4096	m	NO RANDOM	Unimplemented.

Some notes:

- The key number is simply the vnum of the key that can open the door.
- A door without a keyhole is represented by a -1 in this spot.
- A door that needs to be picked or knocked must have a 0 in this spot.
- Wizlocked doors without keyholes may still be opened by an Immortal, and might prove useful in the case of a spec proc. (i.e. The door opens when a character tries the command `_prog knock door.`)
- The exit-to-room number is the vnum of the room where the exit leads. If -1 is used as the exit-to-room number, the exit will not really exist. This is useful if you want a directional description, but no exit.

Please note that adding a description for the door itself is usually done immediately after the exit direction. Details to the door should be nested under the 'extra descriptions' part of the room database.

FLOWS

Flows use the letter F to denote a flow type in the room. The format should be:

```
F
<direction> <speed> <type>
```

Directions have the same numerical values as under 'exits,' above.

Speed is the number of room pulses, about 20 seconds real time that will pass by before the player is moved to the next room. This is a value of 1 to 5 with 1 being the fastest.

Flow type is as follows:

0	NO FLOW	No need for this.	4	<i>HURRICANE</i>	<i>Not yet implemented.</i>
1	RIVER	Plain old flowing water.	5	<i>DUMP</i>	<i>Not yet implemented.</i>
2	<i>AVALANCHE</i>	<i>Not yet implemented.</i>	6	<i>SHOOT</i>	<i>Not yet implemented.</i>
3	<i>WIND</i>	<i>Not yet implemented.</i>			

Note: To set flows in OLC, type `rset` to bring up the menu.

TELEPORTERS

Teleporters use the letter T to denote a teleporter in the room. The format should be:

```
T
<time> <dest room> <make> <counter>
```

Time is the number of room pulses, about 20 seconds, the character will be in the room before teleporting. This should be a number between 1 and 5, with 1 being the fastest.

Dest room is the vnum of the room the character will be teleported to.
Make is a bitvector for special qualities about the teleporter.

1	LOOK	Player will be teleported if look command is used.
2	COUNT	Regular counter is used.
4	RANDOM	A random counter is used instead of the set one.
8	SPIN	<i>Not yet implemented.</i>

The "counter" field is used internally and should be set to 0.

Note: To set teleporters in OLC, type `rset` to bring up the menu.

ROOM ARCHETYPE

```
#vnum
Room Title~
Room's Description
~
<zone number> <room flag> <sector type>
D<direction number>
exit description field
~
door keyword list~
<door type> <key vnum> <exit-to-room vnum>
D<direction number>
exit description field
~
door keyword list~
<door type> <key vnum> <exit-to-room vnum>
{more exits here, if needed}
F
<direction> <speed> <type>
T
<time> <dest room> <make> <counter>
E
extra description keyword list~
extra description
~
E
extra description keyword list~
extra description
~
{more extra desc's as needed}
S
```

TIPS and OBSERVATIONS

- Map it out the rooms on paper first. Be grandiose. As you build, it will usually get smaller anyway!
- When making a DT (deathtrap – a room with a death flag) make exits back to the rooms that lead to it... so people in those rooms can hear the scream. Likewise, it's usually not good to make a death room dark.
- Refrain from using the word "You" as much as possible. Also, avoid describing the people or the events taking

place in a room. Ideally, a room should describe the physical characteristics of the room or historical and noteworthy events about the zone as a whole (as a DM would do so when describing a room to his/her adventuring party). Emotions/feelings (“This room is disturbing” or “You fee a chill run up your spine”) should be used sparingly if at all, as they invariably lead to overuse of “You.” Deathtraps are the only exception to this rule.

- For a working door, the rooms on each side must have matching doors and door flags, and make sure to use the _ (underscore char) when appropriate.
- Make sure all tildes are in their correct position.
- A false door may be achieved by creating a door with a -1 exit-to-room number. This can also be used to create descriptions to look at for a particular direction, such as a balcony. The person certainly cannot go forward off the balcony, but you can still make an exit in that direction with a door of -1. Thus, the person types `look north`, and can get a description of the view.
- Avoid using extraneous keywords and extra descriptions. The extra descriptions should be used to show detail on important objects that are mentioned in the short description or loaded into the room, not for every little detail that you could possibly imagine.
- When setting the name of a room, you **MUST** make sure to capitalize your room titles appropriately.
 Good: Inside the Damp Cavern of Moria
 Bad: Inside the damp cavern of moria
- When making the room, you must indent the paragraphs with three spaces. Tabs of five are not acceptable. Each line in the description of the room **must not** exceed 79 characters in length (this includes spaces).

V MOBILE FILE

The `area.mob` file contains everything the MUD needs to know about the mobs, except for where they are and what they're holding. Each mob in the file is in sequential `vnum` order. Here's a sample mob file:

```
#Version2
mob example~
the First Example Mob~
A first example mob stands here, completely clueless.
~
The example mob looks indistinct, as if it hasn't been completely fleshed out yet.
~
S acdfg gpzCF g C
1 20 10 1d6+2 6d6+6 1d4+0
20 13 14 21 21 9 9
10 100 100
10 10 0 2 5
11 272 210 5
#2299 Version2
mob example~
the Second Example Mob~
A second example mob stands here, completely clueless.
~
The example mob looks indistinct, as if it hasn't been completely fleshed out yet.
~
S acdfg gpzCF g C
1 20 10 1d6+2 6d6+6 1d4+0
20 13 14 21 21 9 9
10 100 100
10 10 0 2 5
11 272 210 5
#99999
$~
```

EXPLANATIONS

#2200 Version2

This is the vnum of the mob. Read the section on virtual numbers in section III of this document for more information. The Version2 is important, to identify the format to the MUD. The older format is also supported, but is converted to Version2 automatically when you use OLC.

mob example~

The name list of this mob; what words can be used to interact with this mob. For instance, kill mob or kill example would both be valid for this mob. Note the tilde following the field.

the First Example Mob~

This is the short desc of the mob. Used in messages such as, "You poke the Example Mob" or "The Example Mob pounds you!" Note the tilde following the description. Unless the mobile has a specific name, the first word of the short description should be 'the' (lower case). This will ensure consistency and proper grammar.

An example mob stands...

~

This is the long desc of the mob, used as part of a room description when a player enters or looks in a room. Note the tilde.

The example mob looks...

~

This is the description of the mob; what a player sees when typing look at the mob. Note that the tilde is on its own separate line.

S acdfg gpzCF g C

The S stands for the 'mob archetype' of the mob. The **first set of characters** is the ACTION flag of the mob, which tell the MUD how the mob should act. The **second set of characters** is the AFFECTION flag, which tells the MUD about any special abilities the mob might have. The **third set of characters** is the HATRED flag, which tells the MUD which players the mob should attack if the mob is aggressive. An aggressive mob that has no hatreds set is the same as a mob that hates everything. The **fourth set of characters** is the AFFECTION2 flag which includes affects beyond what would fit in the affections flag.

1 20 -100 1d6+2 6d6+6 1d4+0

Field one is the mob's level. The **second field** is the mob's hitroll. The **third field** is the mob's armor value. **Field four** is the mobs hit points. **Field five** is the mob's mana points. The **sixth field** is how much damage a mob does with its bare hands.

IMPORTANT: hitpoints, mana, and damroll must be in the format XdY+Z in order to work.

20 13 14 21 21 9 9

These are the mob's stats, in the following order: str, int, wis, dex, con, cha, luk.

10 100 100

The **first number** is how much gold this mob is carrying. The **second** is how many experience points it is worth. The **third number** is the alignment of the mob, ranging from 1000 (good) to -1000 (evil).

10 10 0 2 5

The **first** and **second** numbers are the mob's loading and default position, respectively. The **third** and **fourth numbers** are the mob's gender and class, respectively. The **fifth number** indicates what size the mob is. (See the tables below for more information about these fields.)

11 272 210 5

These four fields are used to determine how the mob will attack. Each one is outlined below.

DESCRIPTIONS

Descriptions are done much the same way as those in the section in 'Rooms' earlier in this handbook. However, the placement of tildes is still very important.

Short Desc - The tilde must follow the description, on the same line.

Long Desc - The tilde must follow on a line by itself.

Mob Desc - The tilde must follow on a separate line.

MOB ARCHETYPES

There are two types of mobs currently available.

S

Simple - The mob doesn't talk. Just follow the standard outline, as described in this outline.

T

Talker - Use this to make mobs speak simple lines of text. It is placed on the last lines below the mob attack types.

Example:

```
The captain says, 'Beware ye the rapids. Have ye downstream right quick!'
~
You hear someone grumbling in the distance.
~
```

ACTION, AFFECTION, HATRED and AFFECTION2 FLAGS

Action flags tell the MUD how a mob behaves, affection and affection2 flags tell the MUD what the mob is affected by, and hatred flags form a list to which the mob is hostile. These flags are added together in the manner detailed in 'flags', in section III of this handbook. Below are lists of flags for each type, with descriptions of what each does:

Action Flags

1	a	SPEC	IMPORTANT: Must be set. If using OLC, it is set automatically.
2	b	SENTINEL	This mob does not wander.
4	c	SCAVENGER	This mob picks up objects it can see lying on the ground.
8	d	IS NPC	IMPORTANT: Must be set. If using OLC, it is set automatically.
16	e	NICE THIEF	Will not attack a player trying to steal from it.
32	f	AGGRESSIVE	Automatically attacks player it can see.
64	g	STAY ZONE	Will not enter a room with a different zone number than its own.
128	h	WIMPY	Will flee when hurt badly.
256	i	MEMORY	This mob will remember players who have attacked it and will be aggressive to them if it sees them again.
512	j	HELPER	Mob helps other mobs against players.
1024	k	HUNTER	This mob will hunt the player that attacked it last.
2048	l	RESIST POUND	Mob is more resistant to bludgeoning weapons.
4096	m	TRAINER	Mob is a trainer. Requires approval.
8192	n	CLOSER	Mob closes doors he encounters.
16384	o	LOCKER	Mob will lock doors he encounters.
32768	p	TAUNTER	Mob will taunt players.
65536	q	NOATTACK	Mob cannot be attacked.
131072	r	-	<i>Not used.</i>
262144	s	HIRER	Mob will tell other mobs who attacked them last.
524288	t	HIREE	Mob can be told by HIRER mobs who to attack.

1048576	u	OPENER	Mob will open unlocked doors.
2097152	v	AMBUSER	Mob will ambush players that walk in their room.
4194304	w	BLOCKER N	Mob will block exit north.
8388608	x	BLOCKER E	Mob will block exit east.
16777216	y	BLOCKER S	Mob will block exit south.
33554432	z	BLOCKER W	Mob will block exit west.
67108864	A	BLOCKER U	Mob will block exit up.
134217728	B	BLOCKER D	Mob will block exit down.
268435456	C	QUESTOR	Mob can send players on a quest. Requires approval. See section X, Quest File.
536870912	D	MAGIC RESIST	Mob is highly resistant to magic affects.
1073741824	E	RESIST SLASH	Mob is more resistant to slashing weapons.
2147483648	F	RESIST PIERCE	Mob is more resistant to piercing weapons.

Note: For any alignment, class, or racial aggressions to work, the initial AGGRESSIVE flag (32 or f) must be set.

Affection Flags

0	-	NONE	None
1	a	FIRESHIELD	Mob will be affected by 'fireshield.' Permission is required..
2	b	INVISIBLE	Mob is invisible.
4	c	DETECT EVIL	<i>Reserved for players, or internal use only.</i>
8	d	DETECT INVIS	Mob can see invisible players.
16	e	DETECTMAGIC	<i>Reserved for players, or internal use only.</i>
32	f	SENSE LIFE	Mob can detect a hidden player, but not enough to see to attack.
64	g	SENSE OBJECT	<i>Reserved for players, or internal use only.</i>
128	h	SANCTUARY	Mob will be affected by 'sanctuary.'
256	i	FAERIE FIRE	Mob will be affected by 'faerie fire.'
512	j	NONE	<i>Reserved, do not use.</i>
1024	k	WRAITHFORM	Cannot bash, trip, or leg sweep this mob, also lowers ARMOR by 20.
2048	l	NONE	<i>Reserved, do not use.</i>
4096	m	NONE	<i>Reserved, do not use.</i>
8192	n	NONE	<i>Reserved, do not use.</i>
16384	o	NONE	<i>Reserved, do not use.</i>
32768	p	INFRAVISION	Mob can see in the dark.
65536	q	NONE	<i>Reserved, do not use.</i>
131072	r	DODGE	Mob will dodge attacks.
262144	s	SNEAK	Mob cannot be seen entering or leaving a room.
524288	t	HIDE	Mob is hidden.
1048576	u	NONE	<i>Reserved, do not use.</i>
2097152	v	CHARMED	<i>Reserved for players, or internal use only.</i>
4194304	w	NONE	<i>Reserved, do not use.</i>
8388608	x	NONE	<i>Reserved, do not use.</i>
16777216	y	VIGOR	Mob will be affected by 'vigor.'
33554432	z	HASTE	Mob will be affected by 'haste.'
67108864	A	FLY	Mob will be affected by 'fly.'
134217728	B	PRIVATE	You cannot portal or dimension door to this mob.
268435456	C	SEE LIFEFORM	Mob can see hidden players.
536870912	D	AQUA LUNG	Mob can breathe underwater.
1073741824	E	MOUNT	Mob is usable as a mount.
2147483648	F	UNHOLY AURA	Mob will be affected by 'unholy aura'.

Hatred Flags

0	-	NONE	None
1	a	HATE EVIL	65536 q HATE MALES

2	b	HATE GOOD	131072	r	HATE FEMALES
4	c	HATE NEUTRAL	262144	s	HATE NECROMANCERS
8	d	HATE THIEVES	524288	t	HATE ALL > LEVEL
16	e	HATE WARRIORS	1048576	u	HATE ALL < LEVEL
32	f	HATE MAGES	2097152	v	HATE OGRE
64	g	HATE CLERICS	4194304	w	HATE GNOMES
128	h	HATE DWARVES	8388608	x	HATE MINOTAURS
256	i	HATE ELVES	16777216	y	HATE ORCS
512	j	HATE HUMANS	33554432	z	HATE GOBLINS
1024	k	HATE PIXIES	67108864	A	HATE DROW
2048	l	HATE HALFLINGS	134217728	B	HATE DUERGAR
4096	m	HATE TROGS	268435456	C	HATE ELДАР
8192	n	HATE HALF-ELVES	536870912	D	HATE KENDER
16384	o	HATE MONKS	1073741824	E	HATE TROLLS
32768	p	HATE DRUIDS	2147483648	F	HATE PALADINS

Affection2 Flags

0	-	NONE	None
1	a	NoLungs	Mobs cannot leave aqualung rooms.
2	b	Silence	Can't speak, cast, or recite scrolls.
4	c	<i>NONE</i>	<i>Reserved, do not use.</i>
8	d	Deaf	Mob cannot hear.
16	e	<i>NONE</i>	<i>Reserved, do not use.</i>
32	f	Calm	Just as if this spell had been cast on the mob.
64	g	Wither	Just as if this spell had been cast on the mob.
128	h	Rage	Just the same as if the mob was using the skill.
256	i	StoneWalk	Can move in mountain terrain.
512	j	WaterWalk	Can move in water terrain.
1024	k	<i>NONE</i>	<i>Reserved, do not use.</i>
2048	l	Curse	Just as if this spell had been cast on the mob.
4096	m	<i>NONE</i>	<i>Reserved, do not use.</i>
8192	n	Awareness	Just the same as if the mob was using the skill.
16384	o	<i>NONE</i>	<i>Reserved, do not use.</i>
32768	p	<i>NONE</i>	<i>Reserved, do not use.</i>
65536	q	<i>NONE</i>	<i>Reserved, do not use.</i>
131072	r	Poison	Just as if this spell had been cast on the mob.
262144	s	ProtectFromEvil	Just the same as if the mob was using the spell.
524288	t	Paralysis	Just as if this spell had been cast on the mob.
1048576	u	Sleep	Just as if this spell had been cast on the mob.
2097152	v	Fear	Just as if this spell had been cast on the mob.
4194304	w	ProtectFromDeath	Won't enter deathtraps.
8388608	x	Blind	Just as if this spell had been cast on the mob.
16777216	y	Grapple	Just as if this skill had been used on the mob.
33554432	z	<i>NONE</i>	<i>Reserved, do not use.</i>
67108864	A	Slow	Just as if this spell had been cast on the mob.
134217728	B	<i>NONE</i>	<i>Reserved, do not use.</i>
268435456	C	Bloodlust	Just the same as if the mob was using the spell.
536870912	D	ProtectFromGood	Just the same as if the mob was using the spell.
1073741824	E	DetectGood	Just the same as if the mob was using the spell.
2147483648	F	<i>NONE</i>	<i>Reserved, do not use.</i>

LEVEL, HITROLL and ARMOR CLASS

Level is a generic and general measure of the mob's overall power. The mob's level should also reflect its challenge to

characters of around the same level. Since most builders already have a player level range in mind when they build an area, we've provided basic equations, which are based on mob level.

Hitroll, as of right now, is not used on mobs so **DO NOT** put any ridiculous number in this field.

A generic equation for THAC0 is: $20 - \text{<mob level>}$

Armor Class determines how hard it is to hit the mob and how much damage is done to the mob per swing. AC is factored the same way it is for characters, so anything below -500 will be rounded to -500.

A generic equation for AC is: $100 - (10 \times (\text{<mob level>}))$

HITPOINTS MANAPOINTS and DAMAGE

The functions of hit points, manapoints, and damage are arrayed randomly by the MUD, as a function of imaginary dice and bonuses. These always follow the form $x \text{d} y + z$, where x is the imaginary amount of dice, y is how many sides these dice have, and z is a constant being added to the final total.

For example, our example mob had hit points of $1\text{d}6+2$: a random number between 1 and 6, then add 2, for a range of 3-8. Another mob might have $10\text{d}10+150$ for a range of 160-250. Manapoints and damage are calculated the same way.

These fields must follow the form $x \text{d} y + z$, even if z equals 0! For instance, our example mob does $1\text{d}4+0$ damage with its bare hands.

A generic equation for HIT POINTS and MANA is: $\text{<mob level> d } 20 + \text{<mob level>} * \text{<mob level>}$

A generic equation for DAMAGE is: $\text{<mob level>} / 10 + 1 \text{ d } Y + \text{<mob level>} / 2$

STATISTICS

This is where you set the mob's STrength, INtelligence, WISdom, DEXterity, CONstitution, CHARisma, and LUCk. The stats can affect the mob's behaviors. E.g. how easy it is to disarm it.

Note: The range is 1 to 30. Racial modifiers are not applied.

GOLD and EXPERIENCE

Gold per mob is up to the author although it should be a rational amount and make sense. (A dragon or wizard would be expected to have a huge amount of gold, but a wolf or a snake would not carry any.) In addition, mobiles that are found in their lair typically have a much greater amount of treasure than mobs that wander around. Please keep this in mind.

A generic equation for GOLD is: $10 * \text{<mob level>} * \text{<mob level>}$

Experience should be an accurate assessment of the difficulty of the mob. It should be reasonably set: if it is set too low, players will avoid the mob in search of others which are more rewarding; if set too high, players will find easy reward for less of a challenge.

A generic equation for EXPERIENCE is: $N * \text{<mob level>} * \text{<average hit points>}$,
where N varies as follows:

6	RARE! All the flags of a type 5, plus helpers, memory, extraordinarily difficult to get to/find.
5	Many helpful flags such as SANCT, VIGOR, HASTE, DODGE, etc.

4	Only a few of the flags listed above.
3	No flags.
2	A couple detrimental flags such as WIMPY, or low hit points, damage, etc.
1	Several flags which make the mob very lame.

Note: Over the years, the amount of experience increased. Please research the current limits and set them accordingly for your mobs. In general, players under level 50 should not be getting a rate of 50 million experience points per 24 ticks.

ALIGNMENT

Alignment varies from 1000 to -1000 and allows for three dispositions:

GOOD	1000 to 350
NEUTRAL	349 to -349
EVIL	-350 to -1000

Alignment should be rationally set according to the mob. For example, a mob with the aggressive and hate_good flags, and an alignment of 1000 does not make sense.

POSITION

A mob always has two position numbers: its loading position, and its default position. A mob will be loaded into its loading position initially, but will return to its default position. Note that these do not have to be the same, but usually are.

The valid positions are:

8	SLEEPING	14	KNEELING	28	STANDING
10	RESTING	16	MEDITATING	30	FLYING
12	CRAWLING	18	SITTING	32	SWIMMING

There is also a defaultposition of `position_none`, value -1, (it cannot be set as a load position), that is useful for mobs whose position is controlled by mobprogs or spec-procs. A mob with `position_none` will remain in the last position he was in until a prog or proc or MUD-event causes it to change. (For example, an aggressive mob might be loaded as sleeping, and would remain sleeping until attacked or woken, and then would be aggy, and would not return to sleep.)

SEX & RACE

0	NEUTRAL	1	MALE	2	FEMALE	3	RANDOM
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The following mobile races are available.

0	OTHER	Default.	16	DWARF	
1	UNDEAD	Can be turned, immune to sleep, charm.	17	ELF	
2	HUMAN	The standard, average race.	18	PIXIE	
3	ANIMAL WILD	Resists charming	19	HALFLING	
4	DRAGON	Breath attack, usable as mount.	20	TROGLODYTE	
5	GIANT	Hill giants, frost giants.	21	HALF-ELF	
6	INSECT	Includes Spiders. Cannot be charmed.	22	OGRE	
7	WATER BASED	Water elementals	23	GNOME	
8	AIR BASED	Air elementals	24	MINOTAUR	
9	PLANT	Trees, ents	25	ORC	
10	MINERAL	Some form of naturally living stone.	26	DROW	
11	COLD BASED	Susceptible to heat attacks.	27	DUERGAR	

12	HEAT BASED	Susceptible to cold attacks.	28	TROLL	
13	ANIMAL TAME	Easier to charm	29	GOBLIN	
14	CONSTRUCT	Golem, enchanted armor, etc.	30	KENDER	
15	ETHEREAL	Mob is transparent.	31	ELDAR	

SIZE

The size of the mobile.

0	<i>NONE (do not use)</i>	9	MEDIUM (elf)	18	GIANT
1	MICROSCOPIC	10	AVERAGE (human)	19	IMMENSE
2	MINISCULE	11	BIG (orc)	20	ENORMOUS
3	MINIATURE	12	VERY BIG (trog, minotaur)	21	MAMMOTH
4	LILLIPUTIAN	13	LARGE	22	GIGANTIC
5	TINY (pixie)	14	GREAT (troll)	23	TITANIC
6	WEE (kender)	15	MASSIVE (ogre)	24	COLOSSAL
7	LITTLE (halfling, gnome, goblin)	16	HULKING	25	GARGANTUAN
8	SMALL (dwarf, duergar)	17	HUGE		

MOB DISPOSITION/CLASS

Field one is the general disposition of the mob, and dictates any special skills that the mob might have. For example, a mob with a thief disposition will steal coins, dodge and gouge in combat, and backstab if aggressive. The following dispositions are available:

0	NONE	8	SNAKE	16	PRIEST	24	TANK
1	THIEF	9	LIZARD	17	MANA DRAIN	25	CASTER
2	WARRIOR	10	VAMPIRE	18	OTHER	26	RANDOM
3	MAGE	11	UNDEAD	19	NECRO	27	PROPHET
4	CLERIC	12	WOLF	20	ARCHER	28	DEMONIAC
5	MONK	13	<i>GOD</i>	21	PALADIN		
6	DRAGON	14	MINOTAUR	22	SAMURAI		
7	DRUID	15	<i>KING</i>	23	RANGER		

Field two is a generic special attack form that the mobile may utilize. This is useful particularly for giving a dragon type mob a breath weapon. The available special attack forms are:

259	WING BASH	267	LIGHTNING BREATH	275	UNDEAD BITE
260	DEATHWIRL	268	BODYSLAM	276	TENTACLE 2
261	SPIT ACID	269	MANA DRAIN	277	TALONS
262	THROW ROOM	270	SHRIEKER	278	POISON GAS
263	FIRE BREATH	271	GLARE PARA	279	BIRD BEAK
264	GAS BREATH	272	CHILLING TOUCH	280	VENOM BITE
265	FROST BREATH	273	TAIL DAMAGE	281	BACKSTAB
266	ACID BREATH	274	RAZOR CLAWS		

Field three changes the combat messages to a different primary attack type. Default is 'hit.' Other melee messages are:

200	HIT	206	POLEARM	212	STING
201	POUND	207	TORCH	213	CONSTRUCT
202	PIERCE	208	HACK	214	HOOF
203	SLASH	209	LANCE	215	TENTACLE
204	CRUSH	210	CLAW	216	HORNS
205	WHIP	211	BITE	217	BLOOD

Field four is a frequency counter, which dictates how often the special attack is used. A FREQ value of 1 would cause the special attack to occur once a round, while a frequency value of 10 would cause the special attack to occur once every 10 rounds (on the average).

STANDARDS AND MEASURES

This list is just a guide for a basis of creating a mob. You do not have to use these values. The numbers were all based on the generic equations we've provided. The corresponding results are very close to the THACO, DAMAGE, HIT POINTS, and AC values taken from the original DIKU documents.

NOTE: The stats in this table are somewhat out of date, especially for higher (40+) mobs, the damrolls have to be made a lot higher. Be sure to do your research on current mobs in the game and to set your mobs accordingly. In general, do not set mob stats to anything higher than what is already in the game, unless you have a very good reason for doing so and can explain why you did it. Avoid escalation, as we then run into the problem of a mid-level zone containing mid-level mobs with high exp and gold values. Keep balance and the overall scaling of mob powers of the whole game in mind. And yes, these values will be checked and compared with other mobs when your zone is reviewed. Remember, players under level 50 should not be getting a rate of 50 million experience points per 24 ticks. If you have any questions/concerns, contact the Head Builder.

LEVEL	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
Dice (avg)	dice (avg)	(average)	(avg)	(avg)		
0	20	10	1d10+0 (6)	1d4+1	17	
1	19	9	1d20+1 (11)	1d4+1	25	10
2	18	8	2d20+4 (25)	1d4+2	150	40
3	17	7	3d20+9 (40)	1d4+3	365	90
4	16	6	4d20+16 (58)	1d4+3	696	160
5	15	5	5d20+25 (78)	1d4+4	1163	250
6	14	4	6d20+36 (99)	1d4+5	1782	360
7	13	3	7d20+49 (123)	1d4+5	2573	490
8	12	2	8d20+64 (148)	1d4+6	3552	640
9	11	1	9d20+81 (175)	1d4+7	4712	810
10	10	0	10d20+100 (205)	2d4+7	6150	1000
LEVEL 10+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
11	9	-1	11d20+121 (237)	2d4+8	7805	1210
12	8	-2	12d20+144 (270)	2d4+9	9720	1440
13	7	-3	13d20+169 (306)	2d4+9	11915	1690
14	6	-4	14d20+196 (343)	2d4+10	14406	1960
15	5	-5	15d20+225 (383)	2d4+11	17212	2250
16	4	-6	16d20+256 (424)	2d4+11	20352	2560
17	3	-7	17d20+289 (468)	2d4+12	23843	2890
18	2	-8	18d20+324 (513)	2d4+13	27702	3240
19	1	-9	19d20+361 (561)	2d4+13	31949	3610
20	0	-10	20d20+400 (610)	3d4+14	36600	4000
LEVEL 20+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
21	-1	-11	21d20+441 (662)	3d4+15	41675	4410
22	-2	-12	22d20+484 (715)	3d4+15	47190	4840
23	-3	-13	23d20+529 (771)	3d4+16	53165	5290
24	-4	-14	24d20+576 (828)	3d4+17	59616	5760
25	-5	-15	25d20+625 (888)	3d4+17	66563	6250
26	-6	-16	26d20+676 (949)	3d4+18	74022	6760
27	-7	-17	27d20+729	3d4+19	82013	7290
28	-8	-18	28d20+784	3d4+19	90552	7840
29	-9	-19	29d20+841	3d4+20	99659	8410
30	-10	-20	30d20+900	4d4+21	109350	9000

LEVEL 30+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
31	-11	-21	31d20+961	4d4+21 (24)	119645	9610
32	-12	-22	32d20+1024	4d4+22 (24)	132096	10240
33	-13	-23	33d20+1089	4d4+23(25)	142115	10890
34	-14	-24	34d20+1156	4d4+23(25)	154326	11560
35	-15	-25	35d20+1225	4d4+24 (26)	167213	12250
36	-16	-26	36d20+1296	4d4+25 (26)	180792	12960
37	-17	-27	37d20+1369	4d4+25 (27)	195083	13690
38	-18	-28	38d20+1444	4d4+26 (27)	210102	14440
39	-19	-29	39d20+1521	4d4+27 (28)	225869	15210
40	-20	-30	40d20+1600	5d4+27 (30)	242400	16000
LEVEL 40+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
41	-21	-31	41d20+1681	5d4+28 (31)	259715	16810
42	-22	-32	42d20+1764	5d4+29 (31)	277830	17640
43	-23	-33	43d20+1849	5d4+29 (32)	296765	18490
44	-24	-34	44d20+1936	5d4+30 (32)	316536	19360
45	-25	-35	45d20+2025	5d4+31 (33)	337163	20250
46	-26	-36	46d20+2116	5d4+31 (33)	358662	21160
47	-27	-37	47d20+2209	5d4+32(34)	381053	22090
48	-28	-38	48d20+2304	5d4+33 (34)	404352	23040
49	-29	-39	49d20+2401	5d4+33 (35)	428579	24010
50	-30	-40	50d20+2500	6d4+34 (37)	453750	25000
LEVEL 50+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
51	-31	-41	51d20+2601	6d4+35 (38)	479885	26010
52	-32	-42	52d20+2704	6d4+35 (38)	507000	27040
53	-33	-43	53d20+2809	6d4+36 (39)	535115	28090
54	-34	-44	54d20+2916	6d4+37 (39)	564246	29160
55	-35	-45	55d20+3025	6d4+37 (40)	594413	30250
56	-36	-46	56d20+3136	6d4+38 (40)	625632	31360
57	-37	-47	57d20+3249	6d4+39 (41)	657923	32490
58	-38	-48	58d20+3364	6d4+39 (41)	691302	33640
59	-39	-49	59d20+3481	6d4+40 (42)	725789	34810
60	-40	-50	60d20+3600	7d4+41 (44)	761400	36000
LEVEL 60+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
61	-41	-51	61d20+3721	7d4+41	798155	37210
62	-42	-52	62d20+3844	7d4+42	836070	38440
63	-43	-53	63d20+3969	7d4+43	875165	39690
64	-44	-54	64d20+4096	7d4+43	915456	40960
65	-45	-55	65d20+4225	7d4+44	956963	42250
66	-46	-56	66d20+4356	7d4+45	999702	43560
67	-47	-57	67d20+4489	7d4+45	1043693	44890
68	-48	-58	68d20+4624	7d4+46	1088952	46240
69	-49	-59	69d20+4761	7d4+47	1135499	47610
70	-50	-60	70d20+4900	8d4+47	1183350	49000
LEVEL 70+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
71	-51	-61	71d20+5041	8d4+48	1232525	50410
72	-52	-62	72d20+5184	8d4+49	1283040	51840
73	-53	-63	73d20+6329	8d4+49	1334915	63290
74	-54	-64	74d20+5476	8d4+50	1388166	54760
75	-55	-65	75d20+5625	8d4+51	1442813	56250
76	-56	-66	76d20+5776	8d4+51	1498872	57760
77	-57	-67	77d20+5929	8d4+52	1556363	59290
78	-58	-68	78d20+6084	8d4+53	1615302	60840
79	-59	-69	79d20+6241	8d4+53	1675709	62410
80	-60	-70	80d20+6400	9d4+54	1737600	64000
LEVEL 80+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD

81	-61	-71	81d20+6561	9d4+55	1800995	65610
82	-62	-72	82d20+6724	9d4+55	1865910	67240
83	-63	-73	83d20+6889	9d4+56	1932365	68890
84	-64	-74	84d20+7056	9d4+57	2000376	70560
85	-65	-75	85d20+7225	9d4+57	2069963	72250
86	-66	-76	86d20+7396	9d4+58	2141142	73960
87	-67	-77	87d20+7569	9d4+59	2213933	75690
88	-68	-78	88d20+7744	9d4+59	2288352	77440
89	-69	-79	89d20+7921	9d4+60	2364419	79210
90	-70	-80	90d20+8100	10d4+61	2442150	81000
LEVEL 90+	THACO	AC	HIT POINTS	DAMAGE	EXP	GOLD
91	-71	-81	91d20+8281	10d4+61	2521565	82810
92	-72	-82	92d20+8464	10d4+62	2602680	84640
93	-73	-83	93d20+8694	10d4+63	2685515	86940
94	-74	-84	94d20+8836	10d4+63	2770086	88360
95	-75	-85	95d20+9025	10d4+64	2856413	90250
96	-76	-86	96d20+9216	10d4+65	2944512	92160
97	-77	-87	97d20+9409	10d4+65	3034403	94090
98	-78	-88	98d20+9604	10d4+66	3126102	96040
99	-79	-89	99d20+9801	10d4+67	3219629	98010
100	-80	-90	100d20+10000	11d4+67	3315000	100000

MOB ARCHETYPE

```
#Version2
name list~
short desc~
long desc
~
mob desc
~
<S|T> <action flags> <affection flags> <hatred flags> <affection2 flags>
<level> <thac0> <ac> <hit points> <mana points> <damage>
<str> <int> <wis> <dex> <con> <cha> <luk>
<gold> <experience> <alignment>
<loading position> <default position> <gender> <race> <size>
<disposition> <special attack> <melee message> <frequency>
<message seen in room>
~
<message seen in connecting rooms>
~
```

TIPS and OBSERVATIONS

- Angry mobs can be simulated by loading them with a default position of sitting and aggressive. After being attacked, they will wander around awhile before sitting back down! Other interesting things can be done with the position values as well.
- Make sure you spend some time looking at other mobs so to get a feel of what your mobs will be like. If you need stats of other mobs, ask the Head Builder for this information.
- Shopkeepers should be level 75 or higher to prevent theft. In addition, setting the NICE THIEF bit will eliminate thievery as a way of starting combat with the shopkeeper. If you have comfortable with mobprogs, you may write one for an interesting mob reaction and nasty surprise for the thief!
- Mobs with mixed dispositions can be simulated with progs. See section XII for more details.

VI OBJECT FILE

An object is any item in the game, be it unmovable rock, the fountain in Market Square, or that nice sword Joe the Barbarian has. Everything the MUD needs to know about objects can be found in the .obj file, except for where they actually are.

Here is an example object, followed by a line-by-line breakdown:

```
#Version2
sword example~
an example sword~
An example sword lies on the ground.~
~
5 an g b e 33
0 3 6 203 0 0
5 1000 100 10
E
sword example~
It looks very shiny and polished, as if someone
is taking care to try to make a good example.
~
A
1 1
#2299 Version2
sword example~
an example sword~
An example sword lies on the ground.~
~
5 an g b e 33
0 3 6 203 0 0
5 1000 100 10
E
sword example~
It looks very shiny and polished, as if someone
is taking care to try to make a good example.
~
A
1 1
#99999
$~
```

EXPLANATIONS

#2200 Version2

The Version2 is important, to identify the format to the MUD. The older format is also supported, but is converted to Version2 automatically when you use OLC.

sword example~

The name list of the object: what words can be used to manipulate the object. In this case, either of the words 'sword' or 'example' can be used in conjunction with a wield, drop, take, etc.

an example sword~

Short desc. This is seen when the object is the target of a command: 'You wield an example sword.' 'You give an example sword to...'. Unless the object has a specific name, the short description should start with either 'a', 'an', or 'the' (lower case). This will ensure consistency and proper grammar.

An example sword lies on the ground.~

The long description. This is what a player sees if the object is lying in a room by itself. Note the position of the tilde here. Unlike long descriptions for mobs, the long description of an object sends an automatic carriage return.

~

This was the action description, and is NOT used anymore. A tilde on the line by itself is still required.

5 an g b e 33

The **first number** is what type of object this is; in this case a weapon. The **second set of characters** is the wear flag of the item, a flag that tells the MUD where the item can be worn on a player or mob. The **third set of characters** is the extra flag. The **fourth set of characters** is the composition flag. This flag serves as a list of what the object is made of. The **fifth set of characters** is the anti flag. This flag tells the MUD who may not use this object. The **sixth set of characters** is the minimum level required to use the object. See all tables below.

0 3 6 203 0 0

These are the values of the object. What each number means is completely dependent on what type of object it is. See 'object values' below.

5 1000 100 10

The **first number** is the weight of the object. The **second field** is the value of the object, in gold coins. The **third field** is the rent value of the object, or how much it costs to rent this item per day in gold coins (currently, this has no meaning, since rent is free). The **last field** indicates the size of the item.

E

sword example~

It looks very shiny and polished, as if someone is taking care to try to make a good example.

~

This is an extra description, and behaves EXACTLY like the extra descriptions of rooms. See section IV of this handbook for more information.

A

1 1

These are 'applies' of the weapon; the A signifying that an apply is forthcoming. The second digit is the type of apply, and the third how much the apply is worth (either positive or negative). See 'applies' below.

DESCRIPTIONS

The short desc and long desc are similar to those of mobs and rooms, as well as the placement of tildes.

Short Desc - Tilde at the end of the desc.

Long Desc - Tilde at the end of the desc.

Action Desc - Unused field; just put a tilde.

OBJECT TYPES

The value of this field can be found in the chart below.

1	LIGHT	Light source.
2	SCROLL	Spells affect target.
3	WAND	Spells affect target.
4	ROD	Spells affect all in room except holder.
5	WEAPON	Players do damage with these.
6	SPELL BOOK	Required for mages to cast spells.
7	MISSILE	Thrown object.

8	TREASURE	Rings, bracelets, necklaces, etc.
9	ARMOR	Plates, leathers, scales, etc.
10	POTION	Spells affect quaffer.
11	WORN	Regular clothing, cheap baubles.
12	OTHER	Typically NO TAKE items used for atmosphere.
13	TRASH	Something useless used for atmosphere.
14	BOARD	A bulletin board. Check before creating one.
15	CONTAINER	Object which can contain other objects.
16	NOTE	Something to write or, or is written on.
17	DRINK CON	Cups, mugs, barrels, fountains.
18	KEY	Any object type can also work as a key; vnum based.
19	FOOD	Yummy!
20	MONEY	Piles of coins.
21	PEN	Something to write with.
22	BOAT	Used to navigate water.
23	HOLY SYMBOL	For clerical spells. Currently not needed.
24	CLIMBING	If in inventory, allows a player to enter MOUNTAIN.
25	SNOWSHOE	Allows user to enter ARCTIC areas.
26	MISSILE WEAPON	Object is used to shoot a missile.
27	MISSILE CON	Object holds a large number of missiles.
28	ITEM OF NATURE	Object is used for druid spells. Not needed.
29	FIGURINE	Object is used to summon a specific mob.
30	PORTAL	Object may be entered.
31	SHOVEL	Used to dig up items.
32	AUDIO	<i>Not yet implemented.</i>
33	NEW WEAPON	<i>Object is a weapon w/ damage based on wielder level.</i>
34	LEVER	Levers, switches, etc.
35	TELEPORT OBJ	Object that starts teleports.
36	VEHICLE	<i>Not yet implemented.</i>
37	CONTROL	<i>Not yet implemented.</i>
38	TRAP	Obj is a type of trap.
39	CLAN ALTAR	<i>Not yet implemented.</i>
40	SHIP	<i>Not yet implemented.</i>
41	SHARD	<i>Shard of Legends. DO NOT SET OR USE. EVER.</i>
42	SMOKE	Spell affects smoker.
43	PILL	Spell affects eater.
44	SNORT	Spell affects snorter.
45	SALVE	Spell affects target.
46	INJECTION	Spell affects target.
47	SPELL STAFF	Two handed weapon that works as a spellbook..
48	MONK GLOVES	Gloves for monks that are used as weapons.
49	INSTRUMENT	<i>Musical instrument, for use with BARDS.</i>

WEAR FLAGS

These flags are handled the same as the flags mentioned in section III of this Handbook. The chart is self-explanatory.

1	a	TAKE	Obj can be picked up	32768	p	FACE	Masks
2	b	FINGER	Rings	65536	q	EAR	One ear
4	c	NECK	Necklaces	131072	r	BACK	Misc
8	d	BODY	Platemail, jackets	262144	s	FULL BODY	<i>Do not use.</i>
16	e	HEAD	Helmets, caps	524288	t	SHIRT	<i>Do not use.</i>
32	f	LEGS	Left & right	1048576	u	EYES	Glasses, lens
64	g	FEET	Left & right	2097152	v	SURROUNDING	Magical
128	h	HANDS	Left & right	4194304	w	ORBITING	Misc

256	i	ARMS	Left & right	8388608	x	FLOATING	Misc
512	j	SHIELD	Shields	16777216	y	FOOT	One foot
1024	k	ABOUT BODY	Robes, cloaks	33554432	z	HAND	One hand
2048	l	WAIST	Belts	67108864	A	ARM	One arm
4096	m	WRIST	Bracelets	134217728	B	LEG	One leg
8192	n	WIELD	Weapons	268435456	C	BADGE	A.k.a tattoo
16384	o	HOLD	Miscellaneous	536870912	D	ANKLES	Left & right

EXTRA FLAGS

The following chart gives values and explanations of all the extra flags.

1	a	GLOW	Item glows.
2	b	HUM	Item hums.
4	c	NO DONATE	Item may not be donated.
8	d	NO RENT	Item may not be rented.
16	e	DARK	Must have sense object to see/use object.
32	f	INVISIBLE	Item is invisible.
64	g	MAGIC	Item is a magical, and cannot be enchanted.
128	h	NO DROP	Item cannot be dropped.
256	i	BLESS	Item is blessed.
512	j	DONATED	Item is donated; cannot be sold to a shop.
1024	k	GOD ONLY	Item is unusable by mortals.
2048	l	QUEST	Item is a quest item.
4096	m	DAMAGED	Item is damaged.
8192	n	BRITTLE	Item more likely to be damaged.
16384	o	DURABLE	Item less likely to be damaged.
32768	p	PLURAL	First keyword is plural. (For game msgs.)
65536	q	TWO-HANDED	Can only be wielded using two hands.
131072	r	OFF-HAND	Can only be used by the off hand.
262144	s	BUCKLER	Can be used with two weapons.
524288	t	IS NO HOLD	Weapons that cannot be holdable (offhand) weapons
1048576	u	NONE	Reserved, do not use.
2097152	v	NONE	Reserved, do not use.
4194304	w	NO RESIZE	The item cannot be resized.
8388608	x	PERISHABLE	Items will decay if on ground > 5 ticks.
16777216	y	NO LOCATE	'locate object' spell will not find this object.
33554432	z	BURIED	Item must be dug up with a shovel.
67108864	A	LEGACY	Reserved, do not use.
134217728	B	RANDOM	Reserved, do not use.
268435456	C	NOMOBLOOT	Item is not lootable by mobs.

COMP FLAGS

The following lists possible material compositions for objects:

1	a	ORGANIC	Sticks, leaves, feathers, food, etc.
2	b	CHAIN METAL	Chain mail armor, skirt, etc.
4	c	MINERAL	Rocks, dirt
8	d	WOOD	Trees and stuff
16	e	PAPER	Mail, parchment, scrolls
32	f	CLOTH	Regular clothing, cloaks
64	g	LEATHER	Includes hides
128	h	MAGICAL	Pure energy, i.e. magical spheres
256	i	FLUID	Drinks, potions

512	j	BONE	Includes teeth, shells, and chitinous matter
1024	k	GEM	Crystal, glass
2048	l	PRECIOUS METAL	Gold, silver, platinum
4096	m	OTHER METAL	Steel, iron, bronze

ANTI FLAGS

The following is a list of possible restrictions that may be placed upon an item:

1	a	ANTI GOOD	16384	o	ANTI DRUID
2	b	ANTI EVIL	32768	p	ANTI MONK
4	c	ANTI NEUTRAL	65536	q	<i>unused</i>
8	d	ANTI WARRIOR	131072	r	<i>unused</i>
16	e	ANTI MAGE	262144	s	<i>unused</i>
32	f	ANTI CLERIC	524288	t	<i>unused</i>
64	g	ANTI THIEF	1048576	u	<i>unused</i>
128	h	UNLOWERABLE	2097152	v	<i>unused</i>
256	i	ANTI RANGER	4194304	w	<i>unused</i>
512	j	ANTI PROPHET	8388608	x	ANTI PALADIN
1024	k	ANTI SAMURAI	16777216	y	ANTI NECROMANCER
2048	l	ANTI DEMONIAC	33554432	z	CAN GORE
4096	m	<i>unused</i>	67108864	A	ANTI REMORT
8192	n	<i>unused</i>	134217728	B	REMORT ONLY

The anti flags mean that the class, group, or alignment cannot use it. (Except `can-gore`, which flags headwear so that a minotaur can wear it and still use his gore skill.)

MINIMUM LEVEL

The minimum level required to use the object.

OBJECT VALUES

The six numbers consisting of the 'item values' are different for each type of item. Below, the meanings of these numbers are broken down by each type. Zeroes refer to fields not used, while letters are explained for each section.

LIGHT (1)

Value[0] : Color – Not used

Value[1] : Type – Not used

Value[2] : Hours – Number of hours of light. 0 hours means light has gone out. -1 creates an eternal light source.

Value[3] : Not Used

Value[4] : Not Used

Value[5] : Not Used

SCROLL (2)

Value[0] : Level of the spell on the scroll

Value[1] : Which spell (see 'Spell ID's below for more information on this)

Value[2] : Which spell (unused spells should be set to -1)

Value[3] : Which spell

Value[4] : Not Used

Value[5] : Not Used

WAND (3)

Value[0] : Level of spell in wand

Value[1] : Maximum number of charges
Value[2] : Charges left
Value[3] : Which spell in wand (see 'Spell ID's below for more information)
Value[4] : Time to Recharge (requires approval).
Value[5] : Not Used

ROD (4)

Value[0] : Level of spell in rod
Value[1] : Max charges
Value[2] : Charges left
Value[3] : Which spell in rod (see 'Spell ID's below for more information)
Value[4] : Time to Recharge (requires approval).
Value[5] : Not Used

WEAPON (5)

Value[0] : Speed bonus. (Negative numbers are slower.)
Value[1] : Number of dice to roll for damage.
Value[2] : Size of dice to roll for damage.
Value[3] : The weapon type, one of:

NUMBER	CATEGORY	GENERAL NOTES
200	HIT	Generic message (default)
201	POUND	Hammers and clubs
202	PIERCE	Back stabbers
203	SLASH	Regular swords
204	CRUSH	Maces and flails
205	WHIP	Chance for entanglement
206	POLEARM	Halberds and pikes
207	TORCH	Fire damage, light source
208	HACK	Axes and scythes, jungle terrain
209	LANCE	Extra damage while mounted
210	CLAWS	
211	BITE	
212	STING	
213	CONSTRUCT	
214	HOOF	
215	TENTACLE	
216	HORNS	

Value[4] : Special weapon type (called weapon procedure or 'wproc'), one of:

#	Type	Damage/Effect
0	NONE	NONE
1	FIREBALL	<power>d8
2	HEAL	Casts the spell 'heal' at level <power>.
3	POISON	Casts the spell 'poison' at level <power>.
4	SUNRAY	<power>d10+ <power>
5	TURN UNDEAD	Casts the spell 'turn undead' at level <power>.
6	FIRESTORM	<power>d6 + <power>
7	BERSERK	<power> % chance of berserking.
8	SMITE	<power>d15
9	HOLY AVENGER	<power>d10, plus extra attacks.
10	FIRESIELD	Requires approval.
11	VAMPIRIC DRAIN	Drains 1d <power> + <power> hp
12	RAVAGE	<power> % to remove affects (dispel). Requires approval.

13	BLIND/GOUGE	1d25+<power>, plus blind effect.
14	N/A	NONE
15	MANA DRAIN	Drains 1d <power> + <power> hp
16	VORPAL	See below.
17	HELLSTREAM	<power>d15
18	CHILL TOUCH	<power>d3
19	GROUP HEALER	3d<power> hp to each group member.
20	FIRESHIELD	1d<power>, plus may cast 'fireshield.' Requires approval.
21	LIGHTNING	<power>d6
22	SUFFOCATE	<power>d15
23	ICESTORM	<power>d4 + <power>
24	AGONY	<power> % to occur, reduces dex and ac. (Resets at tick).
25	NECRO KING SWORD	<i>Special; do not use.</i>
26	KNOCKDOWN	<power>d4, + bash effect
27	BLOODLETTER	1d<victim level> bleeding dam/pulse. (resets at tick).
28	BONEBREAKER	<power>d6, plus bash and scare effects.
29	SAMURAI FURY	On katana: 1-15 (chance to hit with katana), 16-30 (chance to hit with wakizashi) On wakizashi: 1-7 (chance to hit with katana), 8-14 (chance to hit with wakizashi) For noble level equipment only.
30	CLERIC HAMMER	Not yet implemented.
31	STRANGULATION	Not yet implemented.

Value[5] :: is the <power> level of the special weapon. (If **Value[4]** is 0, set to this to 0 as well.) Generally, a value of 10 is as high as this should go, and the weapon should be extremely rare if it is any higher. If **Value[4]** is 16 (vorpal), **Value[5]** determines the range of possible body parts to be severed. The numbers are inclusive. Thus, if **Value[5]** is 0, only the head could be severed. If this is set to 3, then the head, waist, hand, or arm could be severed.

#	LOCATION	#	LOCATION	#	LOCATION
0	None	3	Arm	6	Waist (instant death)
1	Hand	4	Leg	7	Heart (instant death)
2	Foot	5	Head (instant death)		

Note: When designing a weapon with a wproc, keep in mind that its power can be increased at the Quest Point shop. The only exception to this is the vorpal wproc and samurai fury wproc as they work on different mechanisms.

SPELL BOOK (6)

Value[0] : Maximum spell level that can be cast from the book.

Value[1] : Additional individual spell.

Value[2] : Additional individual spell.

Value[3] : Additional individual spell.

Value[4] : Not Used

Value[5] : Not Used

MISSILE (7)

Value[0] : Strength required to throw

Value[1] : Number of damage dices

Value[2] : Number of sides per damage dice

Value[3] : The missile type. Type is one of:

NUMBER	CATEGORY	GENERAL NOTES
200	HIT	Default (generic message)
230	DART	Will end up in victim's inventory.
231	ROCK	Will end up shattered.
232	BOULDER	Will end up on ground.
233	SPEAR	Must be shot from MISSILE WEAPON.

234	ARROW	Must be shot from MISSILE WEAPON.
235	BOLT	Must be shot from MISSILE WEAPON.
236	KNIFE	Will end up in victim's inventory.
237	ACID	
238	HOLY WATER	
239	FLAME OIL	

Value[4] : Missile range.

Value[5] : Not Used

TREASURE (8)

[All values are 0. A treasure item is one with a high <value> field.]

ARMOR (9)

Value[0] : The effective AC. A positive value is a bonus, a negative is a penalty.

Value[1] : The maximum AC for when the armor is completely undamaged.

Value[2] : Not Used

Value[3] : Special type of armor, one of:

1	SPIKED	Can do Value[4] d Value[5] damage to opponent.
2	DAMAGE REDUCER	Reduces damage by Value[4] d Value[4] . Frequently is Value[5] .
3	MANA DRAIN	Drains Value[4] d Value[5] .
4	BURN EVIL	Can do Value[4] d Value[5] damage to evil opponent.
5	STAB DAMAGE	Can do Value[4] d Value[5] stabbing damage to opponent.
6	FLAME DAMAGE	Can do Value[4] d Value[5] flame damage to opponent.

Value[4] : Set to 0, unless used by special armor type above.

Value[5] : Set to 0, unless used by special armor type above.

POTION (10)

Value[0] : Level of the spell in the potion.

Value[1] : Which spell (see 'Spell ID's below for more information)

Value[2] : Which spell (unused values should be set to -1)

Value[3] : Which spell

Value[4] : Not Used

Value[5] : How much thirst (See item #17, drink containers, column T) the potion will fill. Valid range is 1-24, and will default to 3 in the game if left at 0.

WORN (11)

Value[0] : Not Used

Value[1] : Not Used

Value[2] : Not Used

Value[3] : Special type of worn gear, one of:

1	SPIKED	Can do Value[4] d Value[5] damage to opponent.
2	DAMAGE REDUCER	Reduces damage by Value[4] percent..
3	MANA DRAIN	Drains (0 to Value[4]) + damage/10 points of mana.
4	BURN EVIL	Can do Value[4] d Value[5] damage to evil opponent.
5	STAB DAMAGE	Can do Value[4] d Value[5] stabbing damage to opponent.
6	FLAME DAMAGE	Can do Value[4] d Value[5] flame damage to opponent.

Value[4] : Set to 0, unless used by special armor type above.

Value[5] : Set to 0, unless used by special armor type above.

OTHER (12)

[All values should be set to 0.]

TRASH (13)

[All values should be set to 0.]

BOARD (14)

Value[0] : Minimum level to read board.

Value[1] : Minimum level to write on board.

Value[2] : Minimum level to remove messages from board.

Value[3] : Not used

Value[4] : Not used

Value[5] : 1 for class rep removable, else 0

Note: the action field must contain the name of the file that contains the messages. <boards/Board.name~>. Please consult with the admin before creating a bulletin board.

CONTAINER (15)

Value[0] : Maximum weight the container can contain.

Value[1] : Container flags:

CLOSEABLE	1	a	must be set if item has a workable lid
WIZLOCK	2	b	cannot be unlocked except by key or god
CLOSED	4	c	if set, item will load closed, otherwise open
LOCKED	8	d	if set, item will load locked, otherwise unlocked
BARGEPROOF	16	e	cannot be barged open by warrior
KNOCKPROOF	32	f	cannot be knocked open by spell caster
PICKPROOF	64	g	cannot be picked open by thief

Value[2] : The key vnum of the container. No lock = -1.

Value[3] : Internal use for Corpses that must rot.

Value[4] : Not Used

Value[5] : Not Used

NOTE (16)

Value[0] : Tongue - Not Used

[All other values should be set to 0.]

DRINK CON (17)

Value[0] : Maximum drink-units the drink-container can contain.

Value[1] : Number of drink-units that are left in the container.

Value[2] : The type of liquid in the drink-container (**D** = Drunk, **F** = Full, **T** = Thirst, and **W** = Wired), one of:

TYPE	#	D	F	T	W	TYPE	#	D	F	T	W
WATER	0	0	1	10	0	MACADEMIA NUT LIQUEUR	85	2	0	2	0
BEER	1	1	1	5	0	PARLINE LIQUEUR	86	2	0	2	0
WINE	2	2	0	5	0	WALNUT LIQUEUR	87	2	0	2	0
ALE	3	2	1	5	0	AKUAVIT	88	2	0	2	0
DARK ALE	4	1	1	6	0	COFFEE LIQUEUR	89	2	0	2	0
WHISKEY	5	5	0	4	0	IRISH CREME	90	2	0	2	0
LEMONADE	6	0	1	8	0	CAPPUCINO LIQUEUR	91	2	0	2	0
FIREBREATH	7	8	0	0	0	GALLIANO	92	2	0	2	0

LOCAL SPECIALITY	8	3	2	3	0	OZUO	93	2	0	2	0
SLIME JUICE	9	0	4	6	0	SAMBUCA	94	2	0	2	0
MILK	10	0	3	6	0	TUACA	95	2	0	2	0
TEA	11	0	1	6	5	ALCOHOL	96	4	0	3	0
COFFEE	12	0	1	5	6	BOURBON	97	4	0	3	0
BLOOD	13	0	2	4	0	BRANDY	98	4	0	3	0
SALTWATER	14	0	1	0	0	CHAMPAGNE	99	4	0	3	0
TEQUILA	15	4	0	3	0	CITRON VODKA	100	4	0	3	0
GROG	16	3	1	5	0	GIN	101	4	0	3	0
SOYMILK	17	0	3	5	0	IRISH WHISKEY	102	4	0	3	0
EGG NOG	18	1	2	4	0	SAKE	103	4	0	3	0
HOT CHOCOLATE	19	0	2	5	3	SCOTCH	104	4	0	3	0
RUM	20	4	1	2	0	SPICED RUM	105	4	0	3	0
URINE	21	0	0	1	0	VODKA	106	4	0	3	0
BUTTERMILK	22	0	0	3	0	WHISKEY	107	5	0	3	0
SODA	23	0	0	3	4	ALABAMA SLAMMER	108	3	0	4	0
DIET SODA	24	0	0	3	4	AMARETTO SOUR	109	3	0	4	0
APPLE JUICE	25	0	0	4	0	APPLE PIE	110	3	0	4	0
CARROT JUICE	26	0	1	4	0	BLACK RUSSIAN	111	3	0	4	0
CRANBERRY JUICE	27	0	0	4	0	BLOODY MARY	112	3	0	4	0
FRUIT JUICE	28	0	0	4	0	DAQUIRI	113	3	0	4	0
GRAPEFRUIT JUICE	29	0	1	4	0	FUZZY NAVEL	114	3	0	4	0
GRAPE JUICE	30	0	0	4	0	GIN FUZZ	115	3	0	4	0
JUICE	31	0	1	4	0	GIN TONIC	116	3	0	4	0
ORANGE JUICE	32	0	1	4	0	HAIRY NAVEL	117	3	0	4	0
PINEAPPLE JUICE	33	0	1	4	0	KAMIKAZE	118	5	0	4	0
TOMATO JUICE	34	0	1	4	0	LONG ISLAND ICED TEA	119	8	0	4	2
TROPICAL JUICE	35	0	1	4	0	MAI TAI	120	8	0	4	0
CAPPUCINO	36	0	0	2	8	MALIBOU SUNRISE	121	4	0	4	0
CAFE MOCHA	37	0	0	2	7	MANHATTAN	122	3	0	4	0
HOT CHOCOLATE	38	0	0	2	3	MARGARITA	123	4	0	4	0
APPLE BRANDY	39	4	0	2	0	MARTINI	124	4	0	4	0
APPLE SCHNAPPS	40	2	0	2	0	MIMOSA	125	3	0	4	0
APPLE CINNAMON SCHNAPPS	41	2	0	2	0	MINT JULEP	126	3	0	4	0
APRICOT BRANDY	42	4	0	2	0	PASSIONATE SCREW	127	3	0	4	0
BANANA LIQUEUR	43	2	0	2	0	PINA COLADA	128	3	0	4	0
BLACK RASPBERRY LIQUEUR	44	2	0	2	0	RUM AND COKE	129	3	0	4	0
BLACKBERRY BRANDY	45	4	0	2	0	RUM RUMMER	130	3	0	4	0
BLACKBERRY SCHNAPPS	46	2	0	2	0	RUSTY NAIL	131	3	0	4	0
CHERRY BRANDY	47	4	0	2	0	SCREAMING ORGASM	132	3	0	4	0
COCONUT RUM	48	4	0	2	0	SCREWDRIVER	133	3	0	4	0
LEMON LIQUEUR	49	2	0	2	0	SEX ON THE BEACH	134	6	0	4	0
MELON LIQUEUR	50	2	0	2	0	SEVEN AND SEVEN	135	3	0	4	0
ORANGE LIQUEUR	51	2	0	2	0	TEQUILA SUNRISE	136	6	0	4	0
PASSION FRUIT LIQUEUR	52	2	0	2	0	TOM COLLINS	137	3	0	4	0

PEACH SCHNAPPS	53	2	0	2	0	VODKA MARTINI	138	10	0	0	4
PEAR BRANDY	54	4	0	2	0	ZOMBIE	139	8	0	4	0
PLUM BRANDY	55	4	0	2	0	MANGO LASSI	140	0	1	4	0
RASPBERRY LIQUEUR	56	2	0	2	0	ALMOND MILK	141	0	2	4	0
STRAWBERRY LIQUEUR	57	2	0	2	0	SUNFLOWER MILK	142	0	2	4	0
WATERMELON LIQUEUR	58	2	0	2	0	RICE MILK	143	0	1	4	0
ANISE	59	2	0	2	0	HAZELNUT MILK	144	0	2	4	0
BUTTERSCOTCH SCHNAPPS	60	2	0	2	0	CASHEW MILK	145	0	2	4	0
CHOCOLATE LIQUEUR	61	2	0	2	0	CHOCOLATE MILK	146	0	1	4	1
CREME DE COCOA	62	2	0	2	0	GOAT MILK	147	0	2	4	0
CHOCOLATE MINT LIQUEUR	63	2	0	2	0	PUSS	148	0	0	1	0
TOFFEE LIQUEUR	64	2	0	2	0	SNOT	149	0	1	1	0
WHITE CHOCOLATE LIQUEUR	65	2	0	2	0	SALIVA	150	0	0	1	0
HERBS	66	2	0	2	0	DIARRHEA	151	0	1	1	0
ABSINTHE	67	2	0	2	0	VOMIT	152	0	1	1	0
CINNAMON LIQUEUR	68	2	0	2	0	HOG VOMIT	153	0	1	1	0
BENEDICTINE	69	2	0	2	0	CHICKEN PUKE	154	0	1	1	0
BITTERS	70	2	0	2	0	CANCEROUS OOZE	155	0	0	1	0
GINGER LIQUEUR	71	2	0	2	0	TOXIC SLUDGE	156	2	1	1	0
HONEY LIQUEUR	72	2	0	2	0	SEWAGE	157	0	1	1	0
LICORICE	73	2	0	2	0	ROTTEN WORM JUICE	158	0	0	1	0
MINT JULEP	74	2	0	2	0	YERBA MATE	159	0	0	4	4
MULLED CIDER	75	0	0	3	0	THAI YOUNG COCONUT JUICE	160	0	0	5	0
MULLED WINE	76	2	0	3	0	PEPPERMINT TEA	161	0	0	4	0
PEPPERMINT SCHNAPPS	77	2	0	2	0	CHAMOMILE TEA	162	0	0	4	0
ROSE WATER	78	2	0	2	0	MINT TEA	163	0	0	4	1
VANILLA LIQUEUR	79	2	0	2	0	GREEN TEA	164	0	0	4	3
WORMWOOD	80	2	0	2	0	OOLONG TEA	165	0	0	3	8
ALMOND LIQUEUR	81	2	0	2	0	BLACK TEA	166	0	0	3	7
CREME DE CASSIS	82	2	0	2	0	RED TEA	167	0	0	4	3
HAZELNUT LIQUEUR	83	2	0	2	0	VINEGAR	168	0	0	1	0
KUMMEL	84	2	0	2	0	CHAI TEA	169	0	0	3	7

The above values for drunkenness/fullness/thirst are used per four "units" drunk. The values are expressed in HOURS!

Example:

Coyote empties a bottle (say 7 units) of whisky.

His Drunkenness increases by $((7/4)*6)$ hours.

His Fullness increases by $((7/4)*1)$ hours.

His Thirst increases by $((7/4)*4)$ hours.

The hours above are numbers between 0 and 24. 24 hours is the maximum for drunkenness/fullness/thirst.

Value[3] : if this value is non-zero, the drink is poisoned.

Value[4] : Not Used

Value[5] : Not Used

KEY (18)

Value[0] : *Type - Not Used*

Value[1] : Uses - Amount of uses on the key. Zero uses is unlimited, otherwise number specified is limit.

Value[2] : *Key Required. - Not used.*

Value[3] : *Key Required. - Not used.*

Value[4] : Not Used

Value[5] : Not Used

FOOD (19)

Value[0] : The number of hours that this food will fill the stomach

Value[1] : Which spell on the food item (see 'Spell ID's below for more information), otherwise 0

Value[2] : Level of the spell, otherwise 0 – must be set

Value[3] : If this value is non-zero, the food is poisoned.

Value[4] : Not Used

Value[5] : Not Used

MONEY (20)

Value[0]: The number of gold coins "in the pile of coins".

[All other values should be set to 0.]

PEN (21)

[All values should be set to 0.]

BOAT (22)

[All values should be set to 0.]

HOLY SYMBOL (23)

[All values should be set to 0.]

CLIMBING (24)

[All values should be set to 0.]

SNOWSHOES (25)

[For object types 21 – 25, All values should be set to 0.]

MISSILE WEAPON (26)

Value[0] : Not Used,

Value[1] : Not Used.

Value[2] : Not Used.

Value[3] : Missile type it shoots.

233	SPEAR
234	ARROW
235	BOLT

Value[4] : Missile range.

Value[5] : Not Used.

MISSILE CONTAINER (27)

Value[0] : Number of missiles in the container.

Value[1] : Number of dice to roll for damage.

Value[2] : Size of dice to roll for damage.
Value[3] : Type of missile contained within.

233	SPEAR
234	ARROW
235	BOLT

Value[4] : Range
Value[5] : Max missiles

ITEM OF NATURE (28)

[All values should be set to 0.]

FIGURINE (29)

Value[0] : Vnum of mob within the figurine.
Value[1] : Charges left.
Value[2] : Not Used.
Value[3] : *Max number of mobs that may be in game at once.*
Value[4] : Not Used.
Value[5] : Not Used.

PORTAL (30)

Value[0] : Vnum of destination room.
Value[1] : Minimum player level required to enter the portal.
Value[2] : Maximum player level allowed to enter the portal.
Value[3] : Not Used.
Value[4] : Not Used.
Value[5] : Not Used.

SHOVEL (31)

[All values should be set to 0.]

NEW WEAPON (33)

Value[0] : Weapon Type (see WEAPON (5))
 [All other values should be set to 0.]

LEVER (34)

Value[0] : Triggering action - Lever objects can vary from knobs to string to switches.

0	PULL	1	PUSH	2	TURN
----------	------	----------	------	----------	------

Value[1] : Target Room - the vnum of the room this object will affect.
Value[2] : Action - What it will do specifically?

0	open door	4	lock door
1	close door	5	lock & close door
2	unlock door	6	toggle open/close
3	unlock & open door	7	toggle locked/unlocked

Value[3] : Argument

0-5	target exit number. (See EXITS in Section IV – WORLDS)
6	All exits affected (if applicable)

Value[4] : Not Used

Value[5] : Not Used

TELEPORT OBJ (35)

Value[0] : Trigger

0	PULL	1	PUSH	2	TURN
----------	------	----------	------	----------	------

Value[1] : Action

0	teleport player	11	teleport first mob with <vnum> in room
1	teleport group members in room	12	teleport last mob with <vnum> in room
2	teleport all PCs in room	13	Teleport all mobs with <vnum> in room
3	teleport all mobs in room	14	teleport all mobs/PCs/objs in room
4	teleport all mobs/PCs in room	15	teleport all objs in room
5	teleport first PC in room	16	teleport first obj in room
6	teleport first mob in room	17	teleport last obj in room
7	teleport first mob or PC in room	18	teleport first obj with <vnum> in room
8	teleport last PC in room	19	teleport last obj with <vnum> in room
9	teleport last mob in room	20	teleport all objs with <vnum> in room
10	teleport last mob or PC in room		

Value[2] : Source Room - Where the chars/objs come from. -1: the room containing the teleport.

Value[3] : Target Room - Where the chars/objs are teleported. -1: the room the teleport is in.

Value[4] : <vnum> - Virtual number of mob/object to be teleported

Value[5] : Not Used

VEHICLE (36)

[All values should be set to 0.]

TRAP (38)

Value[0] : Trap type

0	NONE	3	SNARE	6	GAS	9	SPIKE PIT
1	ALARM	4	POISON DART	7	SNAKES	10	CAVE-IN
2	CALTROPS	5	NET	8	ACID		

Value[1-5] : Unused

SPELL STAFF (47)

Value[0] : Speed bonus. (Negative numbers are slower)

Value[1] : Number of dice to roll for damage.

Value[2] : Size of dice to roll for damage.

Value[3] : Maximum spell level that can be cast from the book.

Value[4] : Special weapon type (called weapon procedure or 'wproc'). See the list under Value 4 for weapons. Note that some wprocs do not make sense when used on a staff, to choose wisely!

Value[5] :: is the <power>level of the special weapon. See the list under Value 5 for weapons.

Note: When designing a spell staff with a wproc, keep in mind that its power can be increased at the Quest Point shop. The only except to this is the vorpal wproc and samurai fury wproc as they work on different mechanisms.

MONK GLOVES (48)

Value[0] : Punch Bonus.

Value[1] : Not Used

Value[2] : Not Used

Value[3] : Special weapon type, one of:

#	Type	Damage/Effect
0	NONE	NONE
1	TALONS OF LIFE	Life drain
2	FISTS OF FLAME	Extra fire damage attack
3	FLURRY OF THE CURRENTS	Extra attacks
4	STONE PUNCH	Extra powerful attack
5	SKYSTRIKE PUNCH	Extra air attack

Value[4] : Frequency

Value[5] : Power Level

Note: For noble level equipment only.

WEIGHT

When determining the weight of a weapon, you must also consider at what strength a player will be able to wield it, if it can be held as a secondary weapon, either alone or via dual wield, and how much it will add to the carrying capacity of the PC. By the table below, a PC must have a minimum strength of 16 to wield a weapon with a weight of 20 lbs.

W	Strength to wield weapon	DW	Strength to dual wield weapon
H	Strength to hold weapon	C	Total weight player can carry

STR	W	H	DW	C	STR	W	H	DW	C
1	4	2	1	75	16	20	10	3	245
2	5	3	1	80	17	22	11	3	260
3	6	3	1	85	18	24	12	4	300
4	7	4	1	90	19	28	14	4	640
5	8	4	1	95	20	32	16	5	700
6	9	5	1	100	21	37	19	6	810
7	10	5	1	110	22	43	23	7	970
8	11	6	1	120	23	50	25	8	1130
9	12	6	2	130	24	55	28	9	1340
10	13	7	2	145	25	66	33	11	1650
11	14	7	2	165	26	70	35	11	2060
12	15	8	2	170	27	75	38	12	2370
13	16	8	2	190	28	80	40	13	2680
14	17	9	2	200	29	85	43	14	2890
15	18	9	3	220	30	90	45	15	3200

VALUE

These values are currently left up to the author. Keep in mind however that relative value of an object should reflect the objects overall power, rarity, and difficulty to get. The value affects how much it will cost to repair the object as well as how much it can cost to increase the speed or lighten/make heavier the item.

COST / DAY

This is typically set to be 10% of the VALUE. An object with a -1 in this position cannot be rented. An object with a 0 set for this value will **not** save in rent. This is useful for items such as perishable foods.

SIZE

The size of the object determines what races can use/wield/wear the item, or the size of the race that you intend to use it. Example: a scepter of lordly rule is probably considered a tiny object in relation to the size of a human, but it is meant for human use so it qualifies as size 10.

0	NONE (use sparingly, if at all)	13	LARGE
1	MICROSCOPIC	14	GREAT (troll)
2	MINISCULE	15	MASSIVE (ogre)
3	MINIATURE	16	HULKING
4	LILLIPUTIAN	17	HUGE
5	TINY (pixie)	18	GIANT
6	WEE (kender)	19	IMMENSE
7	LITTLE (halfling, gnome, goblin)	20	ENORMOUS
8	SMALL (dwarf)	21	MAMMOTH
9	MEDIUM (elf)	22	GIGANTIC
10	AVERAGE (human, normal)	23	TITANIC
11	BIG (orc)	24	COLOSSAL
12	VERY BIG (troglodyte, minotaur)	25	GARGANTUAN

SPELL & SKILL ID#'s

Please keep this in mind when choosing spells, and the level of the spells in a particular item.

WARNING: With the addition of new skills and spells, some of these values may have changed.

NAME	ID #	NAME	ID #	NAME	ID #
NONE	0	RIDE	108	CHANGE TARGET	315
ARMOR	1	FIRST AID	109	RIPOSTE	316
TELEPORT	2	FIND TRAPS	110	BLACKSMITHING	317
BLESS	3	DISARM TRAPS	111	HAGGLE	318
BLINDNESS	4	SET SNARES	112	FORAGE	319
BURNING HANDS	5	CAUSE LIGHT	113	WARCRY	320
CALL LIGHTNING	6	CAUSE CRITICAL	114	LAY HANDS	321
CHARM PERSON	7	CAUSE SERIOUS	115	CONFESS	322
CHILL TOUCH	8	MANA	116	PRAYER	323
MIRACLE	9	FLAMESTRIKE	117	DETECT EVIL	324
COLOUR SPRAY	10	DISPEL GOOD	118	DEFEND GROUP	325
MAGE SWORD	11	TURN DEAD	119	PFE (Protection From Evil)	326
CREATE FOOD	12	REMOVE PARALYSIS	120	CHARGE	327
CREATE WATER	13	ANIMATE DEAD	121	BLOCK	328
CURE BLIND	14	KNOW ALIGNMENT	122	TUMBLE	329
CURE CRITIC	15	PARALYZE	123	COUNTERATTACK	330
CURE LIGHT	16	CALM	124	VITALS PUNCH	331
CURSE	17	VENT	125	FEINT	332
DETECT EVIL	18	ENCHANT ARMOR	126	SMITE	333
DETECT INVISIBLE	19	FIRESHIELD	127	TURN	334
DETECT MAGIC	20	PWORD KILL	128	CLIMB WALLS	335
DETECT POISON	21	PWORD BLIND	129	POISON	336
DISPEL EVIL	22	FAMILIAR	130	DUAL WIELD	337
EARTHQUAKE	23	CREEPING DEATH	131	ARCHERY	338
ENCHANT WEAPON	24	GUST OF WIND	132	CALL MOUNT	339
ENERGY DRAIN	25	SILENCE	133	TAME	340
FIREBALL	26	SUNRAY	134	LEATHERWORKING	341
HARM	27	FIND TRAPS	135	WHIRLWIND	342

HEAL	28	MOUNT	136	AWARENESS	343
INVISIBLE	29	<i>DRAGON RIDE</i>	<i>137</i>	<i>BLIND FIGHTING</i>	<i>344</i>
LIGHTNING BOLT	30	KNOCK	138	<i>GARROTTE</i>	<i>345</i>
LOCATE OBJECT	31	SENSE OBJECT	139	GEM CUTTING	346
MAGIC MISSILE	32	CONTROL WEATHER	140	FORAGING	347
POISON	33	MAGE HEAL	141	<i>COBBLING</i>	<i>348</i>
PROTECT FROM EVIL	34	RAGE	142	<i>ASSASSINATE</i>	<i>349</i>
REMOVE CURSE	35	GORE	143	PURIFY	350
SANCTUARY	36	MEDITATE	144	LURE	351
SHOCKING GRASP	37	SWEEP	145	CURE DISEASE	352
SLEEP	38	SOULCLOAK	146	<i>ROOM TOSS</i>	<i>353</i>
STRENGTH	39	SPIN KICK	147	SCARE	354
SUMMON	40	QUIVERING PALM	148	<i>FISHING</i>	<i>355</i>
GROUP SANCTUARY	41	NERVESTRIKE	149	<i>UNITE</i>	<i>356</i>
WORD OF RECALL	42	<i>COMMAND ANIMAL</i>	<i>150</i>	REJUVENATE	357
REMOVE POISON	43	PROTECT DEATH	151	MIRROR IMAGE	358
SENSE LIFE	44	<i>TRANSPORT VIA PLANT</i>	<i>152</i>	CORPSE VISAGE	359
SNEAK	45	CHANGE STAFF	153	MORTIFY	375
HIDE	46	SLOW	154	PASSWALL	376
STEAL	47	FEEBLEMIND	155	HAMSTRING	377
BACKSTAB	48	GOODBERRY	156	GROUP HEAL	378
PICK LOCKS	49	COMMUNE	157	REDEMPTION	379
KICK	50	ANIMAL FRIENDSHIP	158	IMPALE	380
BASH	51	ENTANGLE	159	RESIST FIRE	381
RESCUE	52	BARKSKIN	160	RESIST LIGHTNING	382
IDENTIFY	53	KNOW MONSTER	161	RESIST COLD	383
INFRAVISION	54	HEROES FEAST	162	RESISTANCE	384
DISPEL MAGIC	55	FAERIE FIRE	163	<i>FISTS OF FURY</i>	<i>385</i>
FEAR	56	FAERIE FOG	164	GRIM WARD	386
DIMENSION DOOR	57	GEYSER	165	LORE	387
METEOR STORM	58	BEAR FORM	166	REGENERATE	388
CURE SERIOUS	59	WOLF CLAWS	167	SHARED VITALITY	389
VIGOR	60	SUPERIOR BREW	168	<i>DUST OF JONAS</i>	<i>390</i>
ELEMENTAL SUMMON	61	STONE BLAST	169	FOULBLADE	391
POWER HEAL	62	DEHYDRATE	170	BIND SOUL	392
WIZARD EYE	63	HAWK EYES	171	PLAGUE	393
DISINTEGRATE	64	CHILL BLOOD	172	SHROUD OF DARKNESS	394
WEB	65	CONVERT MANA	173	CONTROL UNDEAD	395
SATIATE	66	WATER WALK	174	BLIGHT	396
MAJOR BREW	67	FIRE BREATH	175	CALL OF DIS	397
MINOR BREW	68	GAS BREATH	176	RAISE DEAD	398
HASTE	69	FROST BREATH	177	ETHEREAL CORPSE	399
PORTAL	70	ACID BREATH	178	HAND OF THE GODS	400
FIRESTORM	71	LIGHTNING BREATH	179	SPIRITUAL GUARDIAN	401
ICESTORM	72	<i>QUAFF FIREBREATH</i>	<i>180</i>	SOUL SYPHON	402
FLY	73	UNHOLY AURA	181	<i>DARKFIRE</i>	<i>403</i>
CRYSTAL EYES	74	<i>UNUSED</i>	<i>182</i>	<i>CLAWRAKE</i>	<i>404</i>
ACID BLAST	75	STICKS TO SNAKES	183	<i>WAR MARCH</i>	<i>405</i>
ACID STORM	76	TORNADO	184	<i>DIRGE OF DEATH</i>	<i>406</i>
FULL HEAL	77	FALKINS FLURRY	185	<i>HALFSTEP</i>	<i>407</i>
STONE SKIN	78	TSUNAMI	186	<i>LULLABY</i>	<i>408</i>
WITHER	79	SHRIEKING SOULS	187	<i>FANFARE</i>	<i>409</i>
MOON	80	POLY. PLANTFORM	188	<i>LAUDE</i>	<i>410</i>
<i>SUN</i>	<i>81</i>	POLY. BATFORM	189	<i>ANDANTE</i>	<i>411</i>
SHIELD	82	LIGHT	190	<i>HEROIC PROSE</i>	<i>412</i>
<i>AERIAL SERVANT</i>	83	DEATH FOG	191	<i>ILLIAD</i>	<i>413</i>

HELLSTREAM	84	ROT	192	SOLILOQUY	414
REFRESH	85	DETECT GOOD	193	TALES OF TERROR	415
HOLY WORD	86	BLOODLUST	194	LEPER CHILD	416
BREATHE WATER	87	DRAIN	195	RECKONING	417
ASTRAL WALK	88	PROTECT FROM GOOD	196	REQUIEM	418
FUBAR	89	RAISE DEAD	197	PASTORAL	419
SHOCK	90	WRAITHFORM	198	CARCOPHONY	420
DEATHSTROKE	91	VAMPIRIC DRAIN	199	REVERBERATE	421
DODGE	92	GRAPPLE	282	CHAIN LIGHTNING	422
PARRY	93	DISEASE	300	STATIC FIELD	423
BERSERK	94	RESURRECT	301	FROSTBITE	424
BIND	95	GASEOUS FORM	302	BLIZZARD	425
SECOND ATTACK	96	GROUP ARMOR	303	STONEWALL	426
RETREAT	97	MASS	304	FRACTURE	427
HUNT	98	EMBALM	305	ZOMBIFY	428
CIRCLE	99	GATE	306	VISCERA DRAIN	429
ALARM	100	REDUCE	307	BONE ARMOR	430
SCOUT	101	ENLARGE	308	CONFUSE	431
FEIGN DEATH	102	HAVEN	309	GODHAMMER	432
DISARM	103	INVISIBLE TO UNDEAD	310	VIVIFY	433
BARGE	104	TRIP	311	ALACRITY	434
THIRD ATTACK	105	SAFE FALL	312	CELERITY	435
SWIM	106	PEEK	313	HOLY STEED	436
DISGUISE	107	PALM	314		

AFFECTS

An item affect is a particular effect the item has upon the holder/wielder/wearer's statistics. There can be a maximum of THREE affects on an item, each requiring their own 'A' flag to let the MUD know that there is more than one affect. Thus, a sword that added one to a character's strength and -10 to his hit points would be:

```
A
1 1
A
13 -10
```

The first value is the type of affect, the second the value. In the case of skills, the second value is the percentage chance that the skill use increases/decreases. In the case of a spell, a second value is unnecessary.

Below is a list of the different types of affects, and their values. For ARMOR CLASS (17), PARALYZATION (20), WAND/STAFF/ROD (21), PETRIFICATION (22), BREATH WEAPON (23), SPELL (24), SPELL FAIL(54), SAVE ALL (55), and SKILL FAIL(56), a negative value is more beneficial to the player.

0	NONE	
1	STRENGTH	Bonus/penalty to strength.
2	DEXTERITY	Bonus/penalty to dexterity.
3	INTELLIGENCE	Bonus/penalty to intelligence.
4	WISDOM	Bonus/penalty to wisdom.
5	CONSTITUTION	Bonus/penalty to constitution.
6	GENDER	Internal use only. DO NOT USE!
7	CLASS	Internal use only. DO NOT USE!
8	LEVEL	Internal use only. DO NOT USE!
9	AGE	Increase/decrease to age.
10	WEIGHT	Increase/decrease to weight.
11	HEIGHT	Increase/decrease to height.

12	MANA	Adds to max value.
13	HITPOINTS	Adds to max value.
14	MOVEMENT	Adds to max value.
15	<i>GOLD</i>	<i>Internal use only. DO NOT USE!</i>
16	<i>EXPERIENCE</i>	<i>Internal use only. DO NOT USE!</i>
17	ARMOR CLASS	Bonus/penalty to armor class
18	HIT ROLL	Bonus/penalty to hit.
19	DAMAGE ROLL	Bonus/penalty to damage done by player.
20	PARALYZATION	Bonus/penalty to resistance roll.
21	WAND/STAFF/ROD	Bonus/penalty to resistance roll.
22	PETRIFICATION	Bonus/penalty to resistance roll.
23	BREATH WEAPON	Bonus/penalty to resistance roll.
24	SPELL	Bonus/penalty to resistance roll (most used).
25	INFRAVISION	Player will be affected by infravision.
26	<i>HASTE</i>	<i>Player will be affected by haste. DO NOT USE!</i>
27	SNEAK	Player will have skill sneak.
28	HIDE	Player will have skill hide.
29	INVISIBLE	Player will be affected by invisibility.
30	VIGOR	Player will be affected by vigor.
31	BACKSTAB	Player will have bonus to the backstab skill.
32	SENSE-LIFE	Player will be affected by sense life.
33	BLIND	Player will be affected by blindness.
34	DETECT INVIS	Player will be affected by detect-invisibility
35	<i>SANCTUARY</i>	<i>Player will be affected by sanctuary. DO NOT USE!</i>
36	<i>NO HUNGER</i>	<i>Player will never be hungry. DO NOT USE!</i>
37	<i>NO THIRST</i>	<i>Player will never be thirsty. DO NOT USE!</i>
38	<i>WIZINVISIBLE</i>	<i>Player will be invisible below current level. DO NOT USE!</i>
39	SILENCE	Player will be unable to speak.
40	FLYING	Player will be affected by fly.
41	<i>SPECIAL</i>	<i>DO NOT USE!</i>
42	HIT & DAM	Both combined in one flag.
43	AQUA LUNG	Player will be able to breathe under water.
44	DETECT MAGIC	Player will see magical auras on magic items.
45	DETECT EVIL	Player will see red aura on evil mobs/objects.
46	PARALYSIS	Player will be paralyzed.
47	FIND TRAPS	Player will be able to see traps.
48	<i>NONE</i>	<i>DO NOT USE!</i>
49	DEAF	Player will be unable to hear spoken communication.
50	SENSE OBJECT	Player will be able to see dark objects.
51	DODGE	Object will affect player's dodge ability.
52	SEE LIFEFORM	Player will be able to see hidden mobs.
53	HP & MANA	Both combined in one flag.
54	SPELL FAIL	Object will effect player's casting abilities.
55	SAVE ALL	Object affects all the player's saving throws.
56	SKILL FAIL	Object will affect player's skill abilities.
57	CHARISMA	Bonus/penalty to charisma.
58	DETECT GOOD	Player will see white aura on good mobs/objects.
59	<i>UNHOLY AURA</i>	<i>Player will be affected by an unholy aura. DO NOT USE!</i>
60	AWARENESS	Player cannot be backstabbed or nervestriking
61	LUCK	Bonus/penalty to luck.
62	SIZE	Increase/decrease to size.
63	<i>NONE</i>	<i>DO NOT USE!</i>
64	BLOODLUST	Player will be affected with bloodlust.
65	<i>WRAITHFORM</i>	<i>Player will be affected with wraithform. DO NOT USE!</i>
66	MAGIC RESISTANCE	Increase/decrease to magic resistance.
67	BASH	Object will affect player's bash ability.

68	GORE	Object will affect player's gore ability.
69	RIPOSTE	Object will affect player's riposte ability.
70	CHARGE	Object will affect player's charge ability.
71	PARRY	Object will affect player's parry ability.
72	CLIMB WALLS	Object will affect player's climb walls ability.
73	NONE	DO NOT USE!
74	RESIST FIRE	Object will affect player's resistance to fire
75	RESIST LIGHTNING	Object will affect player's resistance to lightning.
76	RESIST COLD	Object will affect player's resistance to cold.
77	DIG	Object can be used to reveal buried objects.
78	SPECIAL	DO NOT USE!
79	SPECIAL	DO NOT USE!
80	SPECIAL	DO NOT USE!
81	REGEN MANA	Object will affect player's mana regen.
82	REGEN HIT	Object will affect player's hit regen.
83	REGEN MOVE	Object will affect player's move regen.
84	CARRY WEIGHT	Increases weight a player can carry.
85	CARRY NUMBER	Increases the number of items a player can carry.
86	ATTACK SPEED	Object will affect player's attack speed.
87	SPECIAL	DO NOT USE!
88	CORPSE VISAGE	Player will be affected with corpse visage.

OBJECT ARCHETYPE

```
#Version2
namelist~
short desc~
long desc~
~
<object type> <wear flag> <extra flag> <comp flag> <anti flag> <min level>
<object values (six digits)>
<weight> <value> <rent cost> <size>
E
keywords~
extra desc
~
A
<apply type> <apply amount>
```

TIPS and OBSERVATIONS

- Items with apply to stats of +3 should be very rare and hard to get.
- Many small items make an area more interesting than a few incredibly powerful items, for the most part. This is very subjective, however.
- Remember to put take flags on almost everything. It's easier to put a take flag on everything, and take off the ones you don't need (like fountains and such).
- Don't feel limited to items players consider 'useful' such as weapons and armor. A giant (untakeable) monolith, and other strange and odd items can add a lot of atmosphere to an area.
- Eliminating the long description on an item will make a blank line appear to the room. This will show the player that there is in fact an object in the room, but they will have to read more carefully to find out what it is. The same effect can be achieved by making the item 'wizinvisible' – this method is greatly preferred.
- Item types should be set rationally. Rings, bracelets and other jewelry should be wearable TREASURE, not armor. Plain clothes should be item type WORN.
- You can avoid piling many “anti-” flags onto an item. Remember that druids and clerics cannot use edged weapons, etc.

VII SHOP FILE

The .shp file contains all the myriad information necessary to make a working shop in a MUD. Here is an example of a shop from the area.shp file, followed by a line-by-line explanation.

```
#2000~
2000
2001
2002
-1
-1
1.2
0.8
5
9
0
0
0
I don't have any of those!~
Are you sure that you have one?~
Sorry--I don't buy those!~
I can't afford that...sorry.~
You can't quite afford that yet...sorry.~
That will be %d coins.~
Here's %d coins for that.~
0
8
12
13
17
```

EXPLANATIONS

#2000~

This is the virtual number of the shopkeeper.

2000

...

-1

The shop sells these item vnums. Note that -1 represents an unused field.

1.2

0.8

The first number is the multiple of the markup in price for selling, the second the multiple for buying from the players.

5

...

0

These are the item TYPES the shop buys. (see 'object types' in section VII of this handbook (this example shop buys weapons and armor). Note the 0s for unused fields.

I don't have any of those!~

...

Here's %d coins for that.~

These are all the messages the shopkeeper will say in particular situations. These are better explained in 'shop

messages' below.

0

This is the shopkeeper's temper. A 0 in this field means the shopkeeper will simply frown when a player tries to buy something it can't afford. A 1 means the shopkeeper will toss the player out of the shop.

8

12

13

17

The hours that the shop is open. Please consult 'hours' below.

SHOP MESSAGES

The shop message section has seven different slots for messages. They range as follows (in order):

What the shopkeeper says when...

1	...he doesn't have that object to sell.
2	...the player doesn't have that object to sell.
3	...he doesn't buy that type of item.
4	...he doesn't have enough money to buy an object.
5	...the player doesn't have enough money to buy an object.
6	...he sells an object.
7	...he buys an object.

The variable %d should appear in messages 6 and 7 where the price of the object goes. In addition, note that each message needs to end with a tilde.

TEMPER

The temper field determines what the shopkeeper does when the player tried to buy something when they do not have enough gold.

0	The shopkeeper frowns.
1	The shopkeeper throws you out onto the street!

HOURS

The 'hours' fields are simple. The first two are the opening and closing hours of the shop, in 24-hour time. The third and fourth are ALSO the opening and closing times of the shop allowing for the shop to open and close more than once in a day.

8

12

13

17

(The example shop opens at 8 am, closes at noon -- lunch? -- reopens at 1 p.m., and closes at 5 p.m.)

0

24

0

0

(The example shop stays open and never closes.)

SHOP ARCHETYPE

```
#vnum~
<item sold vnum 1>
<item sold vnum 2> (-1 for unused values)
<item sold vnum 3>
<item sold vnum 4>
<item sold vnum 5>
<multiple for selling items>
<multiple for buying items>
<item type bought 1>
<item type bought 2> (0 for unused values)
<item type bought 3>
<item type bought 4>
<item type bought 5>
<message 1>
<message 2>
<message 3>
<message 4>
<message 5>
<message 6>
<message 7>
<temper>
<open 1>
<close 1>
<open 2>
<close 2>
```

TIPS and OBSERVATIONS

- Any mob can be a shopkeeper... this can advance the plot of a particular area to no end if used cleverly.
- Shopkeepers don't *have* to buy or sell anything.
- Make sure your shopkeeper has NICE_THIEF set, and have a level higher than 75 to prevent theft. Or, use progs to prevent theft AND write some creative mob reactions!

VIII TRAINER FILE

The area.trn file contains the information for the skill and spell trainers of the MUD. It controls what skills/spells the trainer will teach, what level the player has to be, open/closing times, etc. Please consult with the Head Builder before creating a trainer in your area.

Here is an example:

```
* Fighter Guildmaster
#3023
* serves all fighters, and all races
dg -1
* time open - all day
0 24
* class race minlev sklnum minpct maxpct pracs gold exp
S -1 -1 0 50 0 90 1 0 0 * kick
S -1 -1 0 51 0 90 1 0 0 * bash
```

```

S -1 -1 35 52 0 90 1 100 0 * rescue
S 4 -1 30 91 0 80 1 10k 0 * deathstroke
* Nobility skills
* N0 is lowest, N9 is highest
S -1 -1 N0 109 0 25 2 500k 100k * first aid
M 0 I only serve fighters.
M 2 I'm closed - come back during the day.
M 3 You are not powerful enough.
M 4 I don't teach the basics - just advanced maneuvers.
M 5 You know more than I do!

```

EXPLANATIONS

*

Comment. Put anything you like after an *, it is ignored by the MUD.

#3023

This is the virtual number of the trainer.

dg

The player classes that the trainer will teach, in this case, warriors and paladins. See below.

-1

The player races that the trainer will teach, in this case all races. See below.

2 24

The hours of operation. Here, the trainer is from 2:00am - midnight (MUD time).

```

S -1 -1 0 50 0 90 1 0 0 * kick
S -1 -1 0 51 0 90 1 0 0 * bash
S -1 -1 35 52 0 90 1 100 0 * rescue
S 4 -1 30 91 0 80 1 10k 0 * deathstroke

```

Lines beginning with an S are the skill/spell information. The **first field** after the S is the class #, and the **second field** is the race # (refer to the “#” column in the table below). These are the classes/races that can learn this particular skill, or use -1 for all classes/races. The **third field** is the minimum level the player has to be to train that skill, the **fourth field** is the skill number, the **fifth** and **sixth** are the minimum and maximum skill percentages. The **seventh**, **eighth**, and **ninth** fields specify the number of practice sessions, gold, and experience the trainer will charge.

We will use the fourth line, S 4 -1 30 91 0 80 1 10k 0 * deathstroke, for our in-depth example.

S

This begins a skill/spell line.

4

This trainer will only train a warrior this specific skill. This is different from the ‘dg’ line, above. For example, you could have the trainer train a warrior’s kick skill to superb in one line, while another line can set the trainer to only train a paladin (using a 7 in this field, see below) the kick skill to average.

-1

This trainer trains all races.

10

The PC must be level 30 to practice this skill. Valid numbers are 0-50, and N0-N9, which stand for nobility levels.

51 = N0... 60 = N9.

91

The number of the skill or spell to be trained.

0

The minimum percent the char needs in the skill to learn from this trainer. Valid range, 0-94

80

The maximum percent the trainer will teach you in the skill. Valid range, 1-95.

1

The number of practices it costs to learn the skill. Valid range, 1-127.

10k

This is the amount of gold it costs to practice. For large numbers use 'k' and 'm' as in 100k, 2m, 50m, etc.

0

This is the amount of experience points it costs to practice the skill/spell once. You can use 'k' and 'm' for these values as well.

M 0 I only serve fighters.

M 2 I'm closed - come back during the day.

M 3 You are not powerful enough.

M 4 I don't teach the basics - just advanced maneuvers.

M 5 You know more than I do!

Lines beginning with an M are the messages the trainer will say in various circumstances detailed below. Note here that M 1 was omitted. Omitted messages will use the MUD's default message. See below.

#99999

\$~

This is used to signify the end of the file.

TRAINER DATA

This next part can be a bit confusing. Use the class/race numbers **only** for the individual skill/spell lines (the ones that begin with S.) Use the class/race bitvectors (here, the letters) **only** at the beginning, to note the overall class/races that can train something from this trainer. In this case, the two are **not** interchangeable.

CLASS/RACE NUMBERS & BITVECTORS

		RACE	CLASS			RACE	CLASS
-1	-1	ALL RACES	ALL CLASSES	16	p	DWARF	SAGE
1	a	UNDEAD	MAGE	17	q	ELF	PROPHET
2	b	HUMAN	CLERIC	18	r	PIXIE	ILLUSIONIST
3	c	WILD ANIMAL	THIEF	19	s	HALFLING	BARD
4	d	DRAGON	WARRIOR	20	t	TROGLODYTE	
5	e	GIANT	DRUID	21	u	HALF-ELF	
6	f	INSECT	MONK	22	v	OGRE	
7	g	WATER BASED	PALADIN	23	w	GNOME	
8	h	AIR BASED	NECROMANCER	24	x	MINOTAUR	
9	i	PLANT	SHAMAN	25	y	ORC	
10	j	MINERAL	ASSASSIN	26	z	DROW	

11	k	<i>COLD BASED</i>	SAMURAI	27	A	DUERGAR	
12	l	<i>HEAT BASED</i>	<i>ELEMENTALIST</i>	28	B	TROLL	
13	m	<i>TAME ANIMAL</i>	RANGER	29	C	GOBLIN	
14	n	<i>CONSTRUCT</i>	<i>OCCULTIST</i>	30	D	KENDER	
15	o	<i>ETHEREAL</i>	<i>TEMPLAR</i>	31	E	ELDAR	

Below are the default messages for trainers:

	Description	Default Message.
M0	Trainer doesn't serve class.	"Sorry, I don't specialize in your particular profession."
M1	Trainer doesn't serve race.	"My teaching methods don't work well with your species. Find someone else."
M2	Trainer is closed.	"Come back later!"
M3	PC level not high enough.	"You are not yet ready to learn what I can teach you."
M4	PC not skilled enough.	"Alas, I have no skills that would be useful to you. Look elsewhere."
M5	PC too skilled.	"Congratulations. You have already acquired the skills that I am able to teach."
M6	<i>Not qualified now.</i>	<i>"I have nothing to teach you right now."</i>
M7	<i>Not qualified ever.</i>	<i>"I have nothing to teach you."</i>
M8	<i>Not open yet.</i>	<i>"I'm not open yet, but come back soon."</i>

TRAINER ARCHETYPE

```
#<vnum>
<classes served> < Races served>
<time open> <time closed>
S <class #> <race #> <minlvl> <skillnum> <minpct> <maxpct> <pracs> <gold> <exp>
M 0 I don't serve your class message.
M 1 I don't serve your race message.
M 2 I'm closed message.
M 3 You are too low-level message.
M 4 You are not skilled enough message.
M 5 You are too skilled message.
```

TIPS and OBSERVATIONS

- Please check with the admin about reasonable values for percentages, costs, and such.
- Be creative with the trainer messages! Yet another way to add fun and flavour to your area.

IX ZONE FILE

The area.zon file tells the MUD where everything goes; from the goblin in the pit to what the knight is wielding to placing the fountain in the temple square. It also controls how and when the area is reset.

There are two main parts to every area.zon file: the header information, and a list of commands to be followed out by the MUD. Here is a header of a zone file for an example, followed by a line-by-line example:

```
#22
Example Area!Builder~
2299 20 2
<list of commands>
S
```

Please note the example above is only the *header* of the file. The examples of zone commands will follow this explanation of the header:

#22

This is the zone number of the area.

Example Area!Builder~

The name of the area and the area's writer.

2299 20 2

The **first number** is the 'top' or 'last' number of the zone -- the vnum of the final room of the area. The **second number** is the number of ticks between resets of the area. The **third number** controls how the zone is reset.

<list of commands>

The valid commands are listed later in this section.

S

The S designates the end of the zone file.

ZONE RESETS

The resets tell the MUD when to reset (or *repop*, as it is commonly referred to) the zone, which restores it back to its original state. Mobs, objects, etc... are loaded back into the game, depending on the max_exist variable, which is explained in the next section.

The reset time is measured in *ticks*, or MUD hours. A setting between 25-35 is considered the average. The reset type tells the MUD under what conditions the zone may be reset.

0	NEVER	The zone loads at the MUD's boot time, and that is all.
1	EMPTY	When the reset time is reached, the zone resets only if no players are there.
2	ALWAYS	The zone resets when the reset time is reached, regardless of who is in it.

ZONE COMMANDS

The zone commands tell the MUD exactly how to reset a zone, from mobs to objects, to closing doors. Each command is given its own line, one after the other, until the end of the file. Comments can be added for clarity sake (le.g. * big guy with sword).

Standard Fields

<if-flag>	<p>An if flag tells the MUD to look at the previous command. If the if-flag is 0, the MUD will try to execute the command regardless of the previous command. If the if-flag is any other than a zero (one is most commonly used), then that particular command will only execute if the command immediately preceding it did as well.</p> <p>This is useful for objects loaded onto mobs; you don't want to load a shield on a guard hasn't been loaded yet, for example. There are other uses as well, that should become apparent as you build...</p>
<max exist>	<p>This is the maximum number of whatever this is that can load in the entire MUD. If on a mob command, this will prevent excess mobs being loaded into an area. On an object command, this limits how many of this object will be available in the game. For items not limited, it is common to put a very high number in this slot, usually 100 to 1000.</p> <p>E.g. To have an item load once per boot, set the max exist to 1. This way, the MUD will load the item on the mob so that players can "run" the item. Items already in player houses and the characters themselves are not affected.</p>
[percent]	<p>This is the percentage chance for the zone command to happen. This is optional, and should only be used for unusually powerful/rare items. If omitted the % defaults to 100.</p>

The 'M' Command

The 'M' zone command loads a mobile to a certain place in the MUD. The format is:

```
M <if-flag> <mob vnum> <max exist> <room vnum>
```

The 'O' Command

The 'O' zone command loads an object into a room. This is mostly used for common or immovable objects..

```
O <if-flag> <object vnum> <max exist> <room vnum> [percent]
```

The 'G' Command

The 'G' zone command loads an object and gives it to a mobile loaded in the command immediately previous. Note that this is different from the 'E' command below, in that the 'E' command loads an object and makes the mob equip it. A 'G' command object stays in the mob's inventory.

```
G <if-flag> <object vnum> <max exist> [percent]
```

The 'E' Command

The 'E' zone command loads an object and makes the mob loaded in the command immediately before this one equip it.

```
E <if-flag> <object vnum> <max exist> <equipment position> [percent]
```

Where equipment position is *one* of the following:

#	Position	#	Position	#	Position	#	Position
0	WEAR LIGHT	10	WEAR FEET	20	WEAR ABOUT	30	WEAR BACK
1	WEAR FINGER R	11	WEAR FOOT L	21	WEAR WAIST	31	<i>WEAR FULL BODY</i>
2	WEAR FINGER L	12	WEAR FOOT R	22	WEAR WRIST R	32	<i>WEAR SHIRT</i>
3	WEAR NECK 1	13	WEAR HANDS	23	WEAR WRIST L	33	WEAR SURROUNDING
4	WEAR NECK 2	14	WEAR HAND L	24	WIELD	34	WEAR ORBITING
5	WEAR BODY	15	WEAR HAND R	25	HOLD	35	WEAR FLOATING
6	WEAR HEAD	16	WEAR ARMS	26	WEAR FACE	36	WEAR BADGE
7	WEAR LEGS	17	WEAR ARM L	27	WEAR EAR R	37	WEAR ANKLE
8	WEAR LEG L	18	WEAR ARM R	28	WEAR EAR L		
9	WEAR LEG R	19	WEAR SHIELD	29	WEAR EYES		

The 'P' Command

The 'P' command loads an object, and places it into another object (container-type) that was previously loaded.

```
P <if-flag> <loaded object vnum> <max exist> <into container vnum> [percent]
```

The 'D' Command

The 'D' command can open, close, or close and lock a door.

```
D <if-flag> <room vnum> <exit #> <door state>
```

Where exit # is the **numeric** equivalent of the exit as so:

	Exit		Door State
0	NORTH	0	OPEN

1	EAST	1	CLOSED
2	SOUTH	2	CLOSED AND LOCKED
3	WEST		
4	UP		
5	DOWN		

The 'T' Command

The 'T' command is used to load a mount for a mob that was previously loaded.

```
T <if_flag> <mount vnum> <load room>
```

The 'F' Command

The 'F' command is used to load a follower for a mob that was previously loaded.

```
F <if_flag> <follower vnum> <load room>
```

The '*' Command

The '*' Command is used as a remark statement. The zone file will ignore any line that starts with this character. This is useful for making side comments about the zone or separating chunks of commands, making them easier to read.

ZONE ARCHETYPE

```
#<zone number>
name of area!name of creator~
<last room in area> <reset time> <reset type>
<zone commands>
..
..
..
S
```

TIPS and OBSERVATIONS

- Remember, a functioning door is a door from both sides, and needs to be closed from both sides. Thus, 2 door commands for each door.
- The 'P' command gets confused if you try to load multiple objects into multiple containers IF the containers are all the same object. The solution is to set up blocks separated by asterisks for each container object in which items are being loaded.
- Make sure you list as text what you are doing such as

```
O 0 2202 5 2254   load a fountain
M 0 2204 10 2232  load a witch
```

- <max exist> does not affect how many items a shop can produce.
- Both rare items and trash should have low <max exist> values.
- Items should be listed in order so that those with lower <max exist> values load last. For example:

```
M 0 1000 1 1000   load mob 1000 at room 1000
G 1 1000 10       give obj 1000 to mob 1000
G 1 1001 5        give obj 1001 to mob 1000
G 1 1002 3        give obj 1002 to mob 1000
```

- To simulate a "clean repop" (as if the MUD just rebooted), use `purge zonemob` and then `purge zoneobj` (the order is very important!) and then type `zreset .` (the period means that you are resetting the current zone).

X QUEST FILE

In the days of old, warriors and adventurers proved their courage by undertaking great quests. Whether it was to slay the evil dragon, rescue the damsel in distress, or recover a powerful religious artifact, all quests were dangerous, but potentially rewarding, undertakings. In the realms of Kallisti, a quest can add a great deal of fun and flavor to your area.

Quests are not part of your area. You must contact the administration to have your quests approved and included in the proper files.

Here is an example, followed by a line-by-line breakdown:

```
#1
Find the Rainbow
~
Your quest is to find the rainbow staff, and return it to Puff.
~
Puff exclaims, 'Thank you so much for returning my staff! Here is your reward,
brave adventurer.'
~
0 1 2 5 2 1
2 1000 50000 0 4 0
```

EXPLANATIONS

#1

This is the virtual number of this quest. Totally unique; no other quest in the DB will have this number. You must get a number assigned to each quest you build.

Find the Rainbow

~

This is the title of the quest, followed by a tilde on its own line.

Your quest is...

~

The description of the quest that the players will see when they are given the quest by the mob. Note the ~ on its own line.

Congratulations, you...

~

This is what the mob will say to the players when they complete the quest. Note the ~ on its own line.

0 1 2 5 2 1

The **first** value is the minimum required level for the quest. The **second** value, repeatable, tells whether a player may repeat the quest or not. The **third** value represents the type of quest this is. The **fourth** value is the number of ticks (MUD hours) in which the player must finish the quest. The **fifth** value, vnum1, is the vnum of the mob, obj, or room that is the target of the quest. Finally, if vnum1 is for an obj, then vnum2 is the vnum of the mob to be given the obj, otherwise set the **sixth** value to zero.

2 1000 50000 0 4 0

Now onto line two. The **first** value is the vnum of the mob that initiates the quest. The **second** value is the gold reward of the quest, the **third** value is the experience point reward, the **fourth** is the QP (quest point) reward, and the **fifth** value is the vnum of the object rewarded to the player. Finally, the **sixth** value is the gold cost charged the player to participate in the quest.

DESCRIPTIONS

These should be self-explanatory; the title of the quest, the initial message, and the success message. All are followed by a tilde on a line by itself.

MINIMUM LEVEL

This is used to set the minimum level required of the player who can take the quest. Use 51, 52, etc... for nobility levels. To additionally restrict who can take the quest (race, class, for example), use the mob Hatred Flags, as detailed in section V. Remember that setting hatred flags does not make the mob attack those player types; only hatred flags plus the actual AGGRESSIVE flag can do this.

REPEATABLE

0	A one-time-only quest.
1	A repeatable quest.

TYPE

	Quest Type
1	Quest to kill a MOB
2	Quest to retrieve an OBJECT
3	Quest to get to a ROOM

TIMER

The time, in MUD hours, that the player has to complete the quest.

VNUM1, VNUM2

Vnum1 is the virtual number of the mob, object, or room that is the target of the quest. If it is for an object, **vnum2** is the virtual number of a mob who will accept the obj. Otherwise, set this to 0.

QUESTMOB

The virtual number of the mob that initiates the quest.

QUEST REWARDS

The rewards of the quest; gold coins, experience points, or quest points. The player can also be given an object as a reward, which is specified in the next field, `<obj_reward>`. Set any of these to zero, if you do not wish to reward the player with that type of reward.

COST

The cost, in gold coins, the player is charged to undertake the quest.

QUEST ARCHETYPE

```
#<quest vnum>
quest title
~
quest instructions (seen when quest is given)
~
```

quest completion text (seen when quest is finished)
~
<min_level> <repeatable> <type> <timer> <vnum1> <vnum2>
<questmob> <gold_reward> <exp_reward> <qp_reward> <obj_reward> <cost>

TIPS and OBSERVATIONS

- Remember, the quest mob must be given the C, which will flag it as a "QUESTOR." Otherwise, it will not function.
- Use the min_level field and the mobile hatred flags to customize who can be granted your quest.
- A quest doesn't have to be one in the traditional sense. A guard could give a player a key to a locked door, if the player brings him a mug of ale from the local inn. An old man could send the player off to deliver an important message in another city, where they will be richly rewarded. Be creative!
- One major component of the quest is that the player should learn something upon completion. Give a good, detailed description of exactly why the player is being sent on this quest. "Go kill evil mage Tim, he is my enemy!" is bad. "Far away in the mountains of Thronnd, an evil mage has built a fortress, terrorizing the lands..." is much better, because it gives the quest a sense of purpose and background. Once again, be creative!

XI ONLINE CREATOR

As mentioned at the beginning of this Handbook, LoK uses the Online Creator (OLC) for almost all building work. This is because OLC is "more visual" to some people; but more importantly, it offers immediate feedback. You can build your mob or object and immediately load it for testing (and tweak if necessary!). It also eliminates the need to remember where the tildes are supposed to be, and therefore prevents any unnecessary crashes upon boot.

The setup and navigation of OLC is similar to that of the main login menu for your character; you input numbers to move through the different levels of OLC and input text to write descriptions and add flags to the mobs/objects. Currently, OLC supports editing for the world, mobile, object, and zone files as these are the four main files required for a zone. Trainer, quest and shop files are still done the "old way" (the way as described in this Handbook), and will unlikely be supported by OLC as they are edited by a very experienced builder, usually the Head Builder.

Almost all the options for the world, mobile, object, and zone files described in the Handbook can be accessed via OLC. Some options are considered "advanced" and can only be accessed when editing the file itself. If you need access to these options, contact the Head Builder with your request.

XII SPECIAL PROCEDURES

Special procedures (or programs) are generally abbreviated to "spec procs" or "progs." They are programs that mobs, objects and rooms execute when certain events happen. Progs enhance the player's experience as they force the player to interact and take part in the zone's story. Some control and initiate certain events in the game; it is recommended that inexperienced builders should not attempt to write progs until they have a firm grasp of how they work. **Tutelage under a builder with extensive prog experience is highly recommended.**

There are extensive helpfiles written on the MUD which provide very detailed information about writing progs. These files are constantly updated, so their information will not be repeated here. They can only be accessed by Immortals, so to view them, you must be on your builder character on the Test Port. These files begin with the prefix "mp" (as with most prog commands). A good file to start looking at is mpreference.

Progs for mobs and objects can be written using the methods described in the helpfiles. Room progs (rprogs) are not written this way, so the help of a coder is required. But a crafty builder can use mob progs (mprogs) or object progs (oprogs) to simulate a room prog (rprog).

In fact, mprogs and oprogs are written in pretty much the way. When a mprog is executed, the mob itself performs the actions demanded by the prog. When an oprog is executed, a "supermob" enters the room and performs the actions. This supermob is not really a mob in the traditional sense: it cannot be seen by players and can only perform a portion of mprogs as oprogs. For example, the command `mpdelay` cannot be used in oprogs. In general, most commands found in mprogs can be used in oprogs, provided that it is logical for an object to perform these commands. As a result, mprogs are usually longer and more complicated than oprogs due to their flexibility.

Below are several examples of a mprog. The first example is a very simple prog. Subsequent examples are built upon the first example. Because the same prog is repeated and improved with additional content, old commands will not be explained again in the new examples.

Remember that oprogs operate in a very similar way.

EXAMPLE PROG 1

```
1> act_prog starts following you
mpdelay $i 1
scowl $n
```

EXPLANATION

```
1> act_prog starts following you
```

This is the header. `1>` indicates that this prog is the first prog the mob has. `act_prog` shows that the prog is an action prog. `starts following you` is an argument for the `act_prog` (for details, see the prog's helpfile). To start writing a prog, you do not type `1> act_prog starts following you`; instead, you type `mpedit` add `act starts following you`, where `mpedit` is the command for adding mprogs, `add` is the `mpedit` argument that tells the MUD what you want to do, and `act starts following you` is the `mptrigger` you want and its relevant argument. If this is an oprog, `mpedit` is substituted with `opedit`.

```
mpdelay $i 1
```

This is the first command to be executed in the prog. `mpdelay` delays the mob (`$i`) for 1 pulse. `Mpdelay` can only be used in a mprog and can theoretically hold any positive integer. But for stability purposes, keep this integer to 9. If you want to delay the mob for longer than 9 pulses, add another `mpdelay` command. `$i` is the `mpvariable`. See the helpfile for more details.

```
scowl $n
```

This is the second command to be executed in the prog. Does it look familiar? It is a social. When players use socials, they would type something like `scowl puff` to show that they are not very pleased with Puff. In progs, socials operate the same way, but use `mpvariables` to indicate the target for the social. In this example `$n` is the `mpvariable` for a target player character.

EXAMPLE PROG 2

```
1> act_prog starts following you
if level($n) <= 20
mpdelay $i 1
say Alright, you can follow me.
endif
```

EXPLANATION

```
if level($n) <= 20
```

This is an `ifcheck`. `Ifchecks` check to see if the target has met a certain condition. If the condition is met, the prog then executes the commands `mpdelay $i 1` and `say Alright, you can follow me`. If the

condition is not met, the commands are ignored.

endif

This signifies the end of the ifcheck.

EXAMPLE PROG 3

```
1> act_prog starts following you
if level($n) <= 20
mpdelay $i 1
say Alright, you can follow me.
else
say I don't think so, $N.
endif
```

EXPLANATION

else

else tells the MUD that there are commands to be executed if the ifcheck is not met. Here, say I don't think so, \$N. is executed if the player's level is 19 or lower. Notice the endif is moved to the end of the prog.

EXAMPLE PROG 4

```
1> act_prog starts following you
if level($n) <= 20
mpdelay $i 1
say Alright, you can follow me.
else
say I don't think so, $N.
if mobhere(1)
mpforce puff agree $i
endif
endif
```

EXPLANATION

```
if mobhere(1)
mpforce puff agree $i
endif
```

In this example, there is an ifcheck nested into the first one, after the else. This means that if the condition for first is not met, then MUD executes the commands listed under else. In addition to say I don't think so, \$N. the MUD has to perform the mobhere ifcheck. If that is successful, then mpforce puff agree \$i is executed. If that check is not successful, only say I don't think so, \$N. is executed. Notice that there are two endifs. The first one is for the second (if mobhere(1)) ifcheck; the second endif is for the first ifcheck (if level(\$n) <= 20). Is it very important that you include the correct number of endifs! Failure to do so will result in a crash or a prog error.

MORE EXAMPLES: SIMULATING DISPOSITIONS WITH PROGS

An experienced and crafty builder can write progs to mimic mob dispositions. This is useful for giving a fighter mob spell casting abilities, for example. To do this, at least two progs are needed: the birth prog and the random or fight prog.

```
2> birth_prog 100
mpsetskill 'unholy aura' 95
```

```
mpsetskill 'earthquake' 70
```

This short prog must be included if you are trying to stimulate dispositions. The `birth_prog`, in conjunction with the `mpsetskill` command, gives the mob access to skills when the mob is first loaded. See the helpfile on `birth_progs` for more detail on their usage.

```
3> rand_prog 90
if affectedbyspell(181)
or isfighting($i)
else
cast 'unholy aura'
endif
```

The result of this `rand_prog` (random prog) is only executed if one of the two ifchecks are met: if the mob is not affected by spell 181 (unholy aura) and if the mob is not fighting. This is because there are no commands written after the ifchecks themselves; instead, right after the ifchecks there is the `else`.

```
4> fight_prog 10
cast 'earthquake'
```

Combined with the `birth_prog` example, this `fight_prog` allows the mob to cast the earthquake spell as if is inherent to the mob and is on its spell list.

TIPS AND OBSERVATIONS

- The use of progs is not restricted to puzzles. Many short, simple progs can greatly add to the atmosphere of your zone.
- Check and double check that each prog has the correct number of `endifs`. Generally, for each ifcheck there should be a corresponding `endif`. If one `endif` is missing, the prog may not "fire" or it will still execute its commands, but produce an error report at the same time. The results in an "unclean" prog and should be fixed.
- Practice, practice, and practice some more! You will get better at writing and debugging progs if you are exposed to a wide variety of them and if you understand them. Talk to other builders and share prog tips.
- Test your progs to make sure that they can do what you want and that they are not abusable.
- If one design for a prog doesn't work, try another design. In fact, there are usually two to three ways to achieve the same result in a prog.
- Command progs are risky and they can keep a character looped indefinitely. When testing command progs, especially one with a wildcard (represented by the asterisk) as an argument, either write in a "safe word" to stop the prog, or test out your prog on a mortal character so you can use your builder to stop the prog if anything happens.

XIII PUTTING IT ALL TOGETHER

This section is simply composed of building tips for novice builders. This is very subjective, and based on the experiences of builders. Not all these techniques may be of use to your average builder.

- Learn to build without a DIKU Editor (OLC) first. It is a lot easier to troubleshoot when you understand what exactly goes on with all those numbers in those files.
- Do it on paper first. Do it big.
- Areas always seem to shrink while you're building it, from a cross of aggravation and editing. Having a map to work from helps a LOT when doing exits, and provides a visual impetus to getting all those tedious bits done.
- Do the `.wld` file first. The `.wld` file usually takes the longest. Once past that long fight, the `.mob` and the rest will come easier.

- The .zon file contains 100 rooms. Use the space efficiently. This is because there are 100 rooms per .wld file. If you have 101 rooms, figure out a way to cut out that extra room and still tell your zone's story.
- Your .zon file will always be wrong on the first try. Get used to it.
- An area will take twice as long as you think it will to build.
- A certain boredom sets in sometimes, just set it aside for awhile if this happens; it's better to build when you want to then turn out something uninspired.
- Be fair with the items: Good items should be hard to get while lousy items should require much less effort. Equip the most powerful items to a mob; thieves can often steal stuff from mobile inventories without even bothering to combat the mob.
- Look at it from a player's point of view. Always keep in mind the tricks that you pulled and try to prevent them from happening in your area.
- Avoid escalation! Your zone can still be great WITHOUT having the most powerful weapons, most protective armor, and most difficult mobs in the entire MUD.
- Try to tell the story of your zone so that it relates to the other stories of the MUD. This creates for a more cohesive and well-constructed realm.
- Talk to players to get a feel of what they want from a zone so you can cater to (some) of their needs.
- Talk to experienced builders to learn some building tricks. You can use them in your area or build upon those tricks.

XIV BUILDER'S RULES AND GUIDELINES

- You should not give any assistance to PCs. This includes gold, experience, equipment, or information that they shouldn't have. Information that they shouldn't have includes the stats of themselves, a mob, or a weapon.
- In other words, the players should find out how difficult your mobs are, how useful the equipment is or where it is located, and the general layout of the area, by exploring it on their own. Do not answer questions regarding this information.
- Building is a privilege allowed to those that have reached immortal status, not a means for a player to reach immortality. Mortals WILL NOT be advanced to immortality on the sole basis of area contribution.
- This document is protected under copyright. You may not distribute this document without permission from the owners of Legends of Kallisti MUD, although we do encourage you to keep a hard copy for your own personal use.
- In general, avoid playing your own areas. Since you are the creator, you know your way around them much better than the other players do. Furthermore, do not help or give hints to players that are exploring your area.
- To receive a zone assignment, you must submit a **plan** ahead of time, which describes the area in detail. The plan should include enough detail to clearly show both what you have in mind, and how it fits into the theme and structure of the MUD, and should include the mobs and objects found within, as well as the suggested levels and desired location type, i.e. the type of terrain and where the area is to be located, and examples of some of the descriptions.
- Descriptive 'puzzle' or 'quest' areas are greatly preferred. Your areas, although they can be large, should provide a certain atmosphere about them. In general, quality is better than quantity.
- The optimal area is one in which players LEARN SOMETHING that they did NOT know before and is USEFUL to them in BOTH solving the area (e.g.: they can't solve it without it) AND in real life. Ideally, it will be in a manner that they can not find the info on the MUD and have to go find a reference elsewhere to help them.
- We reserve the right to NOT use an area that is submitted if we feel that it is inappropriate to the Legends of Kallisti MUD or for ANY OTHER reason. It is completely possible that your area will not be used for 'personal' reasons.
- Once submitted, all areas become the property of the Legends of Kallisti MUD and are subject to changes and alterations without consent of the builder. We will try to the best of our abilities to notify builders of changes to their areas. However, we are in no way required to do so.
- In an effort to maintain a unique database for the Legends of Kallisti MUD, no non-public domain areas either built for or submitted to Legends of Kallisti, will be distributed to other muds.

FORMATS

Everything except for the formats were deleted from this section. With the cross-referenced table of contents on page one, it became redundant and unnecessary.

FORMAT.WLD

```
#vnum
<name>~
<description>
~
<zone num> <room flag> <sector type>
D<exit number>
<general description>
~
<door keyword list>~
<door flag> <key number> <to room>
F
<direction> <speed> <type>
T
<time> <dest room> <make> <counter>
E
<keyword list>~
<description>
~
S
...
...
#99999
$~
```

FORMAT.OBJ

```
#vnum Version2
namelist~
short desc~
long desc~
~
<object type> <wear flag> <extra flag> <comp flag> <anti flag> <min level>
<object values (six digits)>
<weight> <value> <rent cost> <size>
E
keywords~
extra desc
~
A
<apply type> <apply amount>
...
...
#99999
$~
```

FORMAT.MOB

```

#vnum Version2
<namelist>~
<short description>~
<long description>
~
<description>
~
<S|T> <action flags> <affection flags> <hatred flags> <affection2 flags>
<level> <thac0> <ac> <hit points> <mana points> <damage>
<str> <int> <wis> <dex> <con> <cha> <luk>
<gold> <exp> <alignment>
<position> <default position> <gender> <race> <size>
<disposition> <special attack> <melee attack type> <frequency>
<message seen in room>
~
<message seen in connecting rooms>
~
...
...
#99999
$~

```

FORMAT.SHP

```

#vnum~
<item sold vnum 1>
<item sold vnum 2>
<item sold vnum 3>
<item sold vnum 4>
<item sold vnum 5>
<multiple for selling items>
<multiple for buying items>
<item type bought 1>
<item type bought 2>
<item type bought 3>
<item type bought 4>
<item type bought 5>
<message 1>
<message 2>
<message 3>
<message 4>
<message 5>
<message 6>
<message 7>
<temper>
<open 1>
<close 1>
<open 2>
<close 2>
...
...
#99999
$~

```

FORMAT.TRN

```

#vnum
<classes served> <aces served>
<time open> <time closed>
S <class #> <race #> <minlvl> <skillnum> <minpct> <maxpct> <pracs> <gold> <exp>
M 0 I don't serve your class message.
M 1 I don't serve your race message.
M 2 I'm closed message.
M 3 You are too low-level message.
M 4 You are not skilled enough message.
M 5 You are too skilled message.

...
...
#99999
$~

```

FORMAT.ZON

```

#zone number
<name of zone>!<name of creator>~
<top of zone> <lifespan> <reset mode>
<command list>
S
#99999
$~

```

FORMAT.QUEST

```

#<quest vnum>
quest title
~
quest instructions (seen when quest is given)
~
quest completion text (seen when quest is finished)
~
<min level> <repeatable> <type> <timer> <vnum1> <vnum2>
<questmob> <gold_reward> <exp_reward> <qp_reward> <obj_reward> <cost>

```

XVI EQUIPMENT LIMITS

These are the limits that must be adhered to when setting the stats on your objects. Unlike the Experience Table in section V (Mobiles), the limits set forth here must be adhered to. If you create an object that exceeds these limits, be warned that it will be toned down. Also, do not make objects with values that max out more than one of the categories (AC Apply, Armor, or HR + DR). For weapon guidelines, see second table, which goes into detail by level restriction.

LOCATION	AC	ARMOR	HR + DR	LOCATION	AC	ARMOR	HR + DR
Light	1	10	5	Face	8	5	2
Finger	1	20	5	Ear	1	10	2
Neck	8	10	6	Back	20	10	3
Body	50	15	6	Full Body	80	20	10
Head	15	10	6	Shirt	30	10	4
Legs	20	10	5	Eyes	4	3	1
Feet	10	5	6	Surrounding	0	15	10
Hands	10	10	8	Orbiting	0	10	6
Arms	20	10	6	Floating	0	10	5
Shield	50	15	10	One Foot	6	3	3
About Body	20	20	5	One Hand	6	5	8
Waist	10	10	4	One Arm	10	5	3
Wrist	5	20	6	One Leg	10	5	3
				Ankles	2	5	2

These are the damage ranges for weapons **including** damroll. In general the swords, axes, and polearm type weapons are at the higher end of the scale and the whips, clubs, and staffs were at the low range. When creating a new weapon, adjust the average damage to be below what you want and add damroll to bring up to the average you want. The weapons at the high end of the damage spectrum or above, have very few "extra" affects and even penalties in some cases.

	Under 20	21 to 30	31 to 40	41 to 50	51 to 59	Legend+
Wield	6-14	9-16	14-18	16-20	18-25	20-28
Held	2-5	4-8	7-9	11-12	13-16	15-17
2 Handed	15-17	19-23	24-28	30-33	30-38	32-45

In general, the two handers have a bit more hitroll than the others. More hitroll for those on the lower part of the damage range, and more hitroll for the pierce/sword type weapons.

Be very careful with weight, because rangers can dual wield some pretty heavy stuff. Again the higher damage range things have bigger weights. Part of this design was to give an advantage to those playing strong characters - they get weapons at all levels that do more damage because of their strength that other characters can't use. Many classes can't even wield those at the higher end of the damage range until metaing, if at all.

Also, extra applies on weapons (such as armor bonuses, skill bonuses, spec procs, etc) shouldn't be on weapons at the high end of these ranges. In general if it has 1 or more extras then the damage should be lower on the scale.

XVII CREDITS

Upgrades and Improvements

DATE	VERSION	EDITED BY	DATE	VERSION	EDITED BY
Dec 14, 1993	1.1 (Kallisti)	Coyote	Mar 31, 1998	1.0e (Eris)	Rowan
Jan 16, 1994	1.2 (Kallisti)	Rasta	Apr 10, 1998	1.0f (Eris)	Rowan
May 27, 1994	2.1 (Kallisti)	Rasta	Sep 16, 1998	1.0g (LoK)	Impala
Aug 7, 1994	2.2 (Kallisti)	Rasta	Sep 1, 2001	1.0h (LoK)	Izzy
Mar 16, 1995	3.0 (Kallisti)	Rasta	Aug 18, 2002	1.1 (LoK)	Drifter
Mar 4, 1997	1.0 (Eris)	Rowan	Aug 21, 2002	1.2 (LoK)	Aquione
Jul 31, 1997	1.0a (Eris)	Rowan	Feb 18, 2004	2.0 (LoK)	Jupitor
Feb 28, 1998	1.0b (Eris)	Rowan	May 31, 2006	2.1 (LoK)	Yojimbo
Mar 13, 1998	1.0c (Eris)	Rowan	Aug 27, 2009	3.0 (LoK)	Toozdae
Mar 29, 1998	1.0d (Eris)	Rowan			

This version of the Builder's Handbook is created for Legends of Kallisti, version 4.0.

If there are any questions about this document, please email the Builders list: builders@legendsofkallisti.com or contact the administration.

If you do not have access to the Builders list, please contact the Immortals at Legends of Kallisti MUD.

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