**Problem Description:**

Legend says that in the depths of the caves of Doom there lies enough treasure to live a thousand years. But adventurers beware, for there is also rumored to be a vicious beast guarding it, not to mention the dozens of other enemies.…. Can you make it out of the cave alive and claim the treasure for yourself?

The game of Dungeon Master consists of a board 60 columns wide and 30 rows . The game is played as follows : The player character moves through a cave and slays enemies and collects treasure until reaching the end of the dungeon (dungeon ends on the 5th floor). The cave consists of different floors which consist of chambers connected with passages. The game does not update the terminal/window each time, but instead reprints the floor design after each command.

**1.Game Components:**

**1.1. Player:**

The player is a human (who starts with 100 HP, 30 Atk, 30 Def). In our game, the player is always denoted by the ’**@’** symbol.

**1.2. Enemies:**

Enemies are the mortal foes of the player. Enemies can move one step randomly within the chamber, except dragons, who always guard the treasure on the 5th floor. Enemies can be one of vampire (50 HP, 25 Atk, 25 Def), werewolf (120 HP, 30 Atk, 5 Def), knight (120 HP,25 Atk, 15 Def), goblin (70 HP, 5 Atk, 10 Def) and dragon (300 HP, 100 Atk,60 Def).

When killed, an enemy that is not a dragon will drop 1 gold coin. This gold is added to the player’s total.

Enemies (except dragons, who are stationary) randomly move 1 step at a time, assuming that the floor

tile is unoccupied. Also, they can never leave the floor they were created in.

If the player is within 1 step radius of an enemy, then the enemy will always attack the player.

Enemies are denoted on the map as follows: **V**(vampire), **W**(werewolf), **N**(goblin), **D**(dragon), **K**(knight).

**1.3. Potions:**

Potions are denoted on the map with a P. Its properties are:

Positive Potions:

Restore health **(RH):** restore up to 10 HP

Boost Atk **(BA):** increase ATK by 5

Boost Def **(BD):** increase Def by 5

Negative Potions:

Poison health **(PH):** lose up to 10 HP (cannot fall below 0 HP)

Wound Atk **(WA):** decrease Atk by 5

Wound Def **(WD):** decrease Def by 5

**1.4. Treasure:**

Treasure consists only of gold. Gold can be in several types of piles: normal (value 1), small hoard

(Value 3) and large hoard (value 10).

Gold is denoted by **’G’** on the map.

**1.5. Floor:**

Floors consist of the 5 chambers connected by passages (denoted by **‘#’**), walls (denoted by **‘|’** and **‘-’**) and doorways by (**‘+’**). Stairs are denoted by (**’\’**). Floor tiles on which the player can walk are denoted by **‘.’**. Chambers are denoted by the smaller polygons inside the larger rectangle.

**2.Gameplay:**

Player will play in the desired way until the player reaches the end of floor 5, the player dies, or quits.

If the player reaches the end of the game or their character is killed, you have the option of playing again.

**2.1 Attack:**

If the player enters within a 1 block radius of any enemy, they will attempt to attack the player.

Enemies have a chance of their attack failing to damage the player. The player has the option of attacking in a 1

block radius around them. The player always attacks first.

Damage is calculated as follows: Damage (Defender) = ceiling ((100/ (100+Def (Defender))) \* Atk (Attacker))

The player is created randomly in a chamber and there are a designated number of enemies, potions and gold on

each floor. When the player moves onto the stairway down the next floor is displayed to the player.

The following commands can be entered:

**mn, ms, me, mw, mne, mnw, mse, msw:** moves the player character one block in the appropriate direction

**u <direction>:** uses the potion indicated by the direction

**a <direction>:** attacks the enemy in the specified direction

**r:** restarts the game. All stats, and gold are reset

**q:** allows the player to admit defeat and exit the game

The map is redrawn appropriately every time a command is entered.