

## CECS 277 – Project 1

### Dungeon Master

Create a program that allows a user to play a dungeon maze game. Use the UML diagram on the next page to help you create your classes.

The dungeon maps, the item list, and the enemy list are all read in from text files and stored in their respective classes (the maps are always 5x5, but do not assume the length of the enemy or item files).

1. Item – item name
  - a. Health Potion – heals for 25hp and discarded when used.
  - b. Other items – have no effect.
2. Enemy – name, base hit points, magical (m) or physical (p) type creature.
  - a. Add a small, random amount of hp to the base hp when generating.
  - b. Construct enemy as magical or non-magical when generating.
3. Map – 5x5 grid of characters
  - a. s = start, f = finish, m = monster, i = item, n = nothing

When the game starts, the hero begins on level 1 at the start position of the first map.

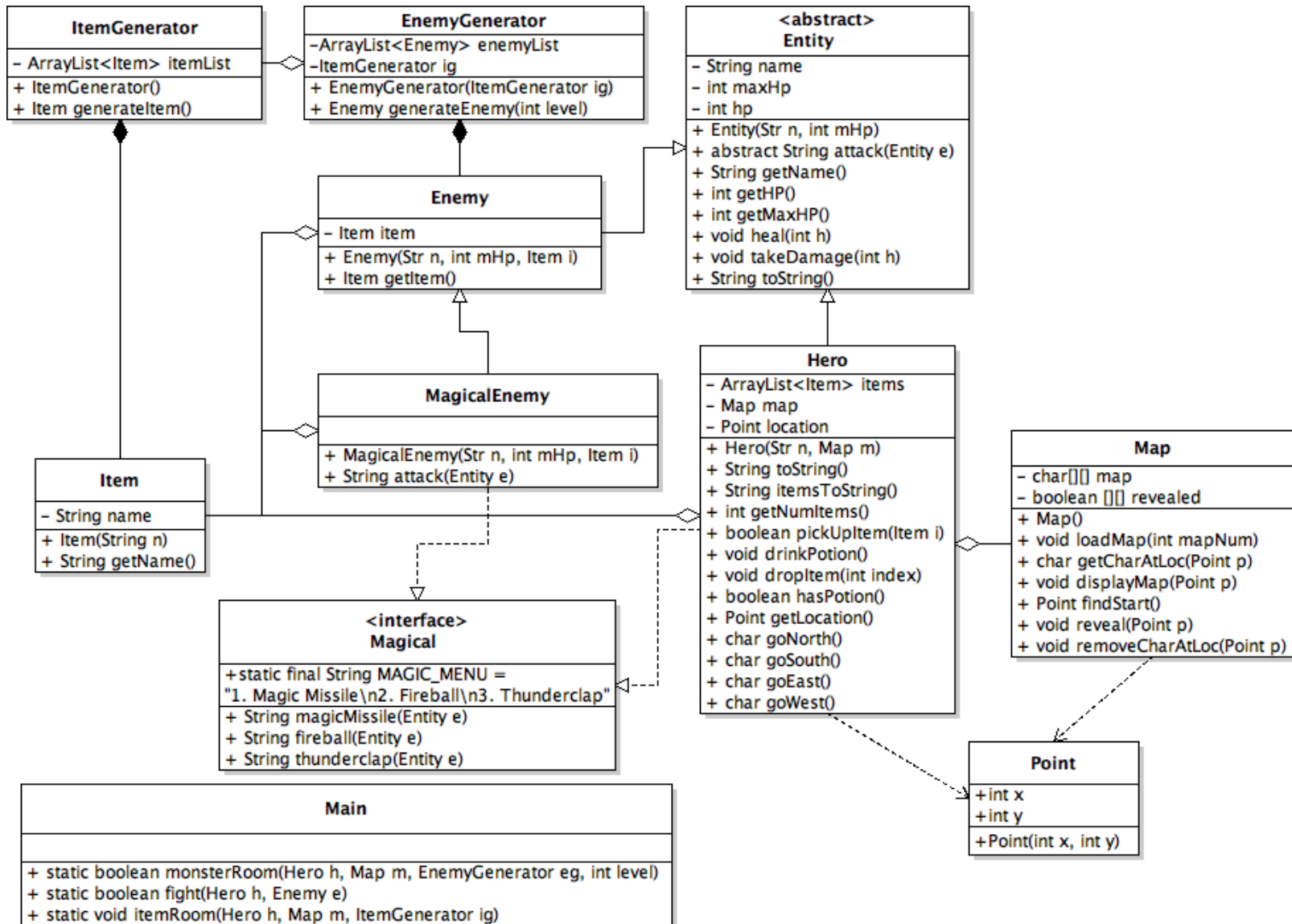
Display a covered map to the user and have a marker to show where the hero is located.

Allow the user to choose a direction (North, South, East, or West) to explore the map:

1. If the user enters a room with a monster, the user has the option of either attacking the monster or running away. If they attack, they choose to use swords or magic. They attack the monster for a random amount of damage. The monster will attack back (if it's still alive), also for a random amount of damage. Repeat until the user or monster is dead, or the user runs away. If they run away, then they will run in a valid random direction to an adjacent room (ie. not into a wall), and the monster stays where it is. If they defeat the monster, then they collect the item from the monster's corpse and the room is cleared. If they have a potion in their inventory, make a third option when fighting to use the potion to refill the hero's hit points, +25 (up to maxHp). If the hero dies, then the game is over.
2. If the user enters a room with an item, it is picked up and added to the hero's inventory and the room is cleared. The hero's inventory has a max capacity of 5 items, so if their inventory is already full, then the user has the choice of selecting an item in their inventory to drop and replace with the new item, or just to drop the new item.
3. If the user reaches the finish, then they have passed the level. The hero's hp is replenished (if needed) and the hero moves to the next map. Re-load the first map for level 4, second map for level 5, etc.

### Notes

- You can use the Point class from the java.awt library to keep the location of the hero, or make your own Point class.
- EnemyGenerator class reads in the file in the constructor to make a list of templates. The generate function randomly chooses from the template list and constructs a new enemy (ie. do not return the template's reference). Make sure the enemies you create are of the right type (either physical or magical). If you like, you can make the enemies more difficult with each level by giving them more hit points.
- The attack and magic attack methods should do a random amount of damage to the entity passed in. Return a string representing the attack with the amount of damage done to the entity (see example output). The MagicalEnemy class's attack method should choose a random magic attack to do (ie. magical enemies should not have a physical attack).
- Please do not add any extra instance variables or methods to the UML.
- Ask questions about any methods you do not fully understand.
- This project will be expanded on for Project 2.



What is your name, traveler? Link

Link

HP: 25/25

Inventory:

x x x x x

x x x x x

\* x x x x

x x x x x

x x x x x

1. Go North

2. Go South

3. Go East

4. Go West

5. Quit

2

You've encountered a Kobold

Kobold

HP: 4/4

1. Fight

2. Run Away

1

1. Physical Attack

2. Magic Attack

1

Link attacks Kobold for 1 damage.

Kobold zaps Link with Thunderclap for 7 damage.

Kobold

HP: 3/4

1. Fight

2. Run Away

1

1. Physical Attack

2. Magic Attack

2

1. Magic Missile

2. Fireball

3. Thunderclap

2

Link hits Kobold with a Fireball for 6 damage.

You defeated the Kobold!

You received a Gem from its corpse.

Link

HP: 18/25

Inventory:

1. Gem

x x x x x

x x x x x

s x x x x

\* x x x x

x x x x x

1. Go North

2. Go South

3. Go East

4. Go West

5. Quit

3

You found a Boots

Link

HP: 18/25

Inventory:

1. Gem

2. Boots

x x x x x

x x x x x

s x x x x

n \* x x x

x x x x x

1. Go North

2. Go South

3. Go East

4. Go West

5. Quit

3

There was nothing here.

Link

HP: 18/25

Inventory:

1. Gem

2. Boots

x x x x x

x x x x x

s x x x x

n n \* x x

x x x x x

1. Go North

2. Go South

3. Go East

4. Go West

5. Quit

3

You've encountered a Giant Rat

Giant Rat

HP: 1/1

1. Fight

2. Run Away

1

1. Physical Attack

2. Magic Attack

1

Link attacks Giant Rat for 4 damage.

You defeated the Giant Rat!

You received a Health Potion from its corpse.

Link

HP: 18/25

Inventory:

1. Gem

2. Boots

3. Health Potion

x x x x x

x x x x x

s x x x x

n n n \* x

x x x x x

1. Go North

2. Go South

3. Go East

4. Go West

5. Quit  
2  
You've encountered a Orc  
Orc  
HP: 4/4  
1. Fight  
2. Run Away  
3. Drink Health Potion

2  
Link  
HP: 18/25  
Inventory:  
1. Gem  
2. Boots  
3. Health Potion

x x x x x  
x x x x x  
s x x x x  
n n n n x  
x x \* m x

1. Go North  
2. Go South  
3. Go East  
4. Go West  
5. Quit

3  
You've encountered a Kobold  
Kobold  
HP: 4/4

1. Fight  
2. Run Away  
3. Drink Health Potion

1  
1. Physical Attack  
2. Magic Attack

2  
1. Magic Missile  
2. Fireball  
3. Thunderclap

3  
Link hits Kobold with Thunderclap for 7 damage.

You defeated the Kobold!  
You received a Gloves from its corpse.

Link  
HP: 18/25  
Inventory:  
1. Gem  
2. Boots  
3. Health Potion  
4. Gloves

x x x x x  
x x x x x  
s x x x x  
n n n n x  
x x n \* x

1. Go North  
2. Go South  
3. Go East  
4. Go West

5. Quit  
3  
Link  
HP: 18/25  
Inventory:  
1. Gem  
2. Boots  
3. Health Potion  
4. Gloves

x x x x x  
x x x x x  
x x x x x  
x x x x x  
x x x x \*

1. Go North  
2. Go South  
3. Go East  
4. Go West  
5. Quit

1  
There was nothing here.

Link  
HP: 18/25  
Inventory:  
1. Gem  
2. Boots  
3. Health Potion  
4. Gloves

x x x x x  
x x x x x  
x x x x x  
x x x x \*  
x x x x s

1. Go North  
2. Go South  
3. Go East  
4. Go West  
5. Quit

2  
You're back at the start.

Link  
HP: 18/25  
Inventory:  
1. Gem  
2. Boots  
3. Health Potion  
4. Gloves

x x x x x  
x x x x x  
x x x x x  
x x x x n  
x x x x \*

1. Go North  
2. Go South  
3. Go East  
4. Go West  
5. Quit

5  
Game Over