CECS 277 – Project 1 – Star Wars

Create a program that allows a user to play a Star Wars mission game. The user controls the Hero to navigate a map that has various things to do to accomplish the mission. Use the UML diagram on the next page to help you create your classes.

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

1. Item – name.
   a. Med Kit – heals for 25 hp when used. Consumed when used.
   b. Armor items – absorbs one hit of damage. Consumed when used.
   c. Holocron – hero gains force powers. Consumed when used.
   d. Key – allows the hero to open a door. Consumed when used.
2. Enemy – name, hit points at level 1, f or n -> force/no force.
   a. Use the hero's level as a multiplier to calculate actual hit points.
   b. Construct an enemy with an item. The hero gets this item when the enemy is defeated.
3. Map – 5x5 grid of characters
   a. s = start, f = finish, e = enemy, i = item, n = nothing

When the game starts, the hero is level 1 and begins 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:
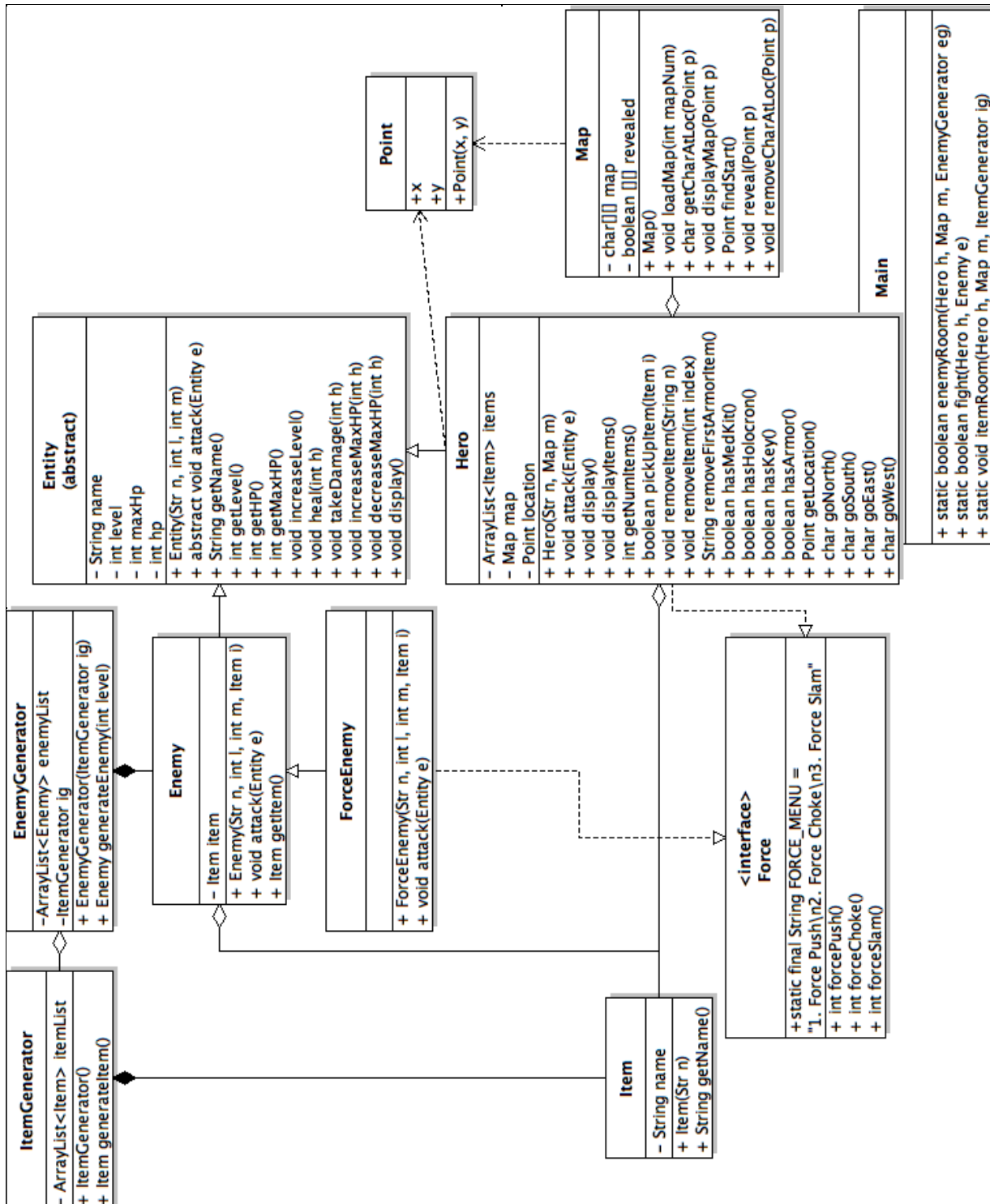
1. If the hero enters a room with an enemy, the user has the option of either attacking or running away. If they attack, they will use their blaster to attack the enemy, but if they have a holocron in their inventory, they have the choice of attacking with the blaster or attacking using force powers. The enemy is attacked for a random amount of damage based on the hero's level. The enemy will then attack back (if it's still alive), also for a random amount of damage. Repeat until the enemy is defeated 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 enemy stays where it is. If they defeat the enemy, then they collect the item the enemy had and the room is cleared (ie. 'n'). If the hero has a med kit in their inventory, make a third option when fighting to use the med kit to restore the hero's hit points (+25 or up to the hero's maxHP). If the hero dies, then the game is over.
2. If the hero 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 item is either left where it was, or the user may decide to throw away an item from their inventory to make room.
3. If the hero enters the finish room, and they have the key in their inventory, then they have passed the level. If they do not have the key, but they do have a holocron, then they can use the force to have a random chance of opening the door. If they successfully open the door, then the hero gains a level and the hero's maxHp increases by 10, and he hero moves on to the next map. Re-load the first map for level 4, second map for level 5, etc.

Notes

- Item/EnemyGenerator classes read in the files in the constructor to make a list of templates. The generate functions randomly choose from the template list and

constructs <u>new</u> items/enemies (ie. do not return the template's reference). Make sure the enemies you create are of the right type (either normal or force).
- When generating enemies, multiply by the hero's level to get the enemy's maxHp.
- Use the Point class from the java.awt library to store the location of the hero.
- Please so not add any extra data members or methods to the UML.
- You may use the CheckInput class given on Beachboard to check user input.

Point

+x
+y

+Point(x, y)

Map

- char[][] map
- boolean [][] revealed
+ Map()
+ void loadMap(int mapNum)
+ char getCharAtLoc(Point p)
+ void displayMap(Point p)
+ Point findStart()
+ void reveal(Point p)
+ void removeCharAtLoc(Point p)

Entity
(abstract)

- String name
- int level
- int maxHp
- int hp

+ Entity(Str n, int l, int m)
+ abstract void attack(Entity e)
+ String getName()
+ int getLevel()
+ int getHP()
+ int getMaxHP()
+ void increaseLevel()
+ void heal(int h)
+ void takeDamage(int h)
+ void increaseMaxHP(int h)
+ void decreaseMaxHP(int h)
+ void display()

Hero

- ArrayList<Item> items
- Map map
- Point location

+ Hero(Str n, Map m)
+ void attack(Entity e)
+ void display()
+ void displayItems()
+ int getNumItems()
+ boolean pickUpItem(Item i)
+ void removeItem(String n)
+ void removeItem(int index)
+ String removeFirstArmorItem()
+ boolean hasMedKit()
+ boolean hasHolocron()
+ boolean hasKey()
+ boolean hasArmor()
+ Point getLocation()
+ char goNorth()
+ char goSouth()
+ char goEast()
+ char goWest()

EnemyGenerator

-ArrayList<Enemy> enemyList
-ItemGenerator ig
+ EnemyGenerator(ItemGenerator ig)
+ Enemy generateEnemy(int level)

Enemy

- Item item
+ Enemy(Str n, int l, int m, Item i)
+ void attack(Entity e)
+ Item getItem()

ForceEnemy

+ ForceEnemy(Str n, int l, int m, Item i)
+ void attack(Entity e)

ItemGenerator

- ArrayList<Item> itemList
+ ItemGenerator()
+ Item generateItem()

Item

- String name
+ Item(Str n)
+ String getName()

<interface>
Force

+static final String FORCE_MENU =
"1. Force Push\n2. Force Choke\n3. Force Slam"
+ int forcePush()
+ int forceChoke()
+ int forceSlam()

Main

+ static boolean enemyRoom(Hero h, Map m, EnemyGenerator eg)
+ static boolean fight(Hero h, Enemy e)
+ static void itemRoom(Hero h, Map m, ItemGenerator ig)

What is your name?
Luke
Luke Lvl:1
HP: 15/15
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 Sith Apprentice
Sith Apprentice Lvl:1
HP: 4/4
1. Fight
2. Run Away
1
Luke attacks Sith Apprentice for 3
damage.
Sith Apprentice hits Luke with a
Force Slam for 5 damage.
Sith Apprentice Lvl:1
HP: 1/4
1. Fight
2. Run Away
1
Luke attacks Sith Apprentice for 4
damage.
You defeated the Sith Apprentice!
You received a Holocron from the
enemy.
Luke Lvl:1
HP: 10/15
Inventory:
1. Holocron
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 Med Kit
Luke Lvl:1

HP: 10/15
Inventory:
1. Holocron
2. Med Kit
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.
Luke Lvl:1
HP: 10/15
Inventory:
1. Holocron
2. Med Kit
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 Droid Defender
Droid Defender Lvl:1
HP: 1/1
1. Fight
2. Run Away
3. Use Med Kit
1
1. Use Blaster
2. Use Force
1
Luke attacks Droid Defender for 5
damage.
You defeated the Droid Defender!
You received a Shield from the
enemy.
Luke Lvl:1
HP: 10/15
Inventory:
1. Holocron
2. Med Kit
3. Shield

x x x x x   x x x x x
x x x x x   x x x x x
s x x x x   x x x x x
n n n * x   x x x x x
x x x x x   x x x x *
1. Go North   1. Go North
2. Go South   2. Go South
3. Go East   3. Go East
4. Go West   4. Go West
5. Quit   5. Quit
2   5
You've encountered a Stormtrooper   Game Over
Stormtrooper Lvl:1
HP: 2/2
1. Fight
2. Run Away
3. Use Med Kit
1
1. Use Blaster
2. Use Force
2
1. Force Push
2. Force Choke
3. Force Slam
1
Luke hits Stormtrooper with Force
Push for 4 damage.
You defeated the Stormtrooper!
You received a Key from the enemy.
Luke Lvl:1
HP: 10/15
Inventory:
1. Med Kit
2. Shield
3. Key
x x x x x
x x x x x
s x x x x
n n n n x
x x x * x
1. Go North
2. Go South
3. Go East
4. Go West
5. Quit
3
You have found the exit door.
You use your key.
Luke Lvl:2
HP: 10/25
Inventory:
1. Med Kit
2. Shield