**CS246 Assignment 5 CC3K: Plan of Attack**

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**Step 1: I/O**

* Implement the observer pattern on our Floor, TextDisplay, and Cells (EmptySpace, Wall, Passage, Door, Tile)
* Once we have a working input method, we will print out the TextDisplay using a operation overload on << with Floor and TextDisplay
* Concurrently, implement a text reading mechanism that allows us to read in floor plans from a file
  + This will be done through command line arguments as well as fstream input
  + Each character in the file will be converted into a Cell of the appropriate type
  + These Cells will then be added to our Floor class
  + Floor will then notify TextDisplay what it should have at each of its positions (by calling the notifyTextDisplay() function as part of each Cell in the Floor)

Estimated Time: 2 Days (Approx 16 Hours)

**Step 2: PC Movement**

* Implement basics of Thing, Character, PC, and Human classes (other classes will be added near the end)
  + Add HP, Attack, Defense, Race, and Money to the screen
* Create Chambers and link them to Floor
* Generate PC in a chamber
* Create movement functions for PC
* Notify Floor for every time a PC moves
* Reprint the TextDisplay for every move

Estimated Time: 2 Days (Approx 16 Hours)

**Step 3: Items on Board[[1]](#footnote-1)**

* Create Item abstract class
* Create Gold abstract class
* Create NormalGold Class (other gold classes will be added later)
* Create Potion abstract class
* Create RestoreHealth Potion
* Generate 10 RestoreHealth potions and 10 NormalGold gold in the Chambers at the beginning of a Floor
* Make sure 2 Items don’t generate on the same space (and item is not on same space as PC)

Estimated Time: 1 Day (Approx 8 hours)

**Step 4: Enemies on Board**

* Create Enemy abstract class
* Create Goblin class (other enemies will be added later)
* Generate 20 Goblins throughout the 5 chambers
* Make sure 2 PC/Items/Enemies don’t generate on the same space

Estimated Time: ¼ Day (Approx 2 Hours)

**Step 5: Item Interactions**

* Implement Potion’s drinkPotion() and PC’s discoveredRH() functions
* Implement stepping on Gold which triggers the getAmount() function
* Ensure items disappear from Floor every time an Item is interacted with
* Make text actions for seeing and drinking Potions

Estimated Time: ½ Day (Approx 4 Hours)

**Step 6: Enemy Movement**

* Implement a step function that allows Enemies to move around the board every time the player interacts with the world (stepEnemy() function)

Estimated Time: ¾ Day (Approx 6 Hours)

**Step 7: Combat**

* Allow PC to attack people in any direction (1 block radius)
* Add option for Enemies to attack within the stepEnemy() function
  + The Enemy will always attack rather than moving during the stepEnemy() function if the player is within a one block radius. (Note: At this point there is no dragons or merchants so all enemies all hostile)
* When Enemies die, increase the PC Money amount
* Create combat text actions

Estimated Time: ½ Day (Approx 4 Hours)

**Step 8: Stairs**

* Generate Stairs, ensuring that PCs and Stairs are not generated in the same chamber
* Make sure that Stairs are not generated on the same Tile as Items/Enemies
* Add that when the player walks on the stair it will clear the current board of the enemies and items (but keep the player) and then generate the next level. The player is randomly positioned in the next level, but the player is constant

Estimated Time: ½ Day (Approx 4 Hours)

**Step 9: Varying Enemies/Gold**

* Add different kinds of Enemies (including Merchants)
* Different kinds of Gold (including Dragons and their placements around DragonHordes)

Estimated Time: ¼ Day (Approx 2 Hours)

**Step 10: Varying Potions**

* Different kind of Potions
* This includes the Decorator Patter on Boost and Wound points per floor

Estimated Time: ½ Day (Approx 4 Hours)

**Step 11: Varying Races**

* Add different kinds of Races
* Player can select their race at the start of the game

Estimated Time: 1/8 Day (Approx 1 Hour)

**Step 12: Start/Restart**

* Make sure that the player can restart and quit a game

Estimated Time: 1/8 Day (Approx 1 Hours)

**UML: See uml.pdf**

1. Note at this time none of the items will do anything this is just concerning generation. [↑](#footnote-ref-1)