

# OOB Final Project

## Dungeon Run

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This project is a text-based dungeon run adventure. Player has to defeat a total of three bosses in order to complete the dungeon. To start the program, simply run the Game.java class and follow the instructions from there. This project includes 5 core designing patterns.

In order to allow the user to customize their characters, a Builder pattern is used, which allows the users to customize the top, bottom, and head of their characters. Builder is suitable for this task because not all the users will want to customize their characters.

Not only are the users able to customize their own characters, they have the freedom to freely customize the stage their characters will be fighting on. This is implemented using a decorator pattern in order to give user the maximum freedom.

Now to implement the minions of the dungeon, a flyweight pattern is used as the core functionality of the minions is essentially the same (having attack and health attributes).

When the player's health is below a certain point, player will become enraged and gain certain amount of attack damage, and this is implemented using a State pattern so we can easily switch between normal and enraged stages.

Last but not least, to implement the three bosses of the dungeon run, a composite pattern used as they bosses share some of the core properties such as attack and taking damage, but two of the three have abilities unique to themselves so composite is used in order so that the other bosses would not use abilities that they are not supposed to use.

## UML Diagrams:







