

## REQ 5

### A. New sides of map

The map is now being separated into 4 sides, with top left being labeled as “north west”, top right being labeled as “north east”, bottom left being labeled as “south west” and bottom right being labeled as “south east”. Each side of the map will have their respective EnemiesFactory, which will generate different type of enemies based on the location of the ground in that specific map. The “NorthEastEnemiesFactory”, “NorthWestEnemiesFactory”, “SouthEastEnemiesFactory” and “SouthWestEnemiesFactory” will all implementing the “EnemyFactory” interface. The advantages of doing so is that it is easily manageable and making further changes fast and troubleless. We can just add in new methods inside the “EnemyFactory” class and implementing the method inside each sides of the enemies factory concrete classes since each location of ground will spawn different type of enemies. By doing so it obey the SOLID principle.

### B. New enemies

There will be 4 new enemies with “Fire” type and are located in the “firetype” package. They are “Charizard”, “Dragon”, “FireWorm” and “Slug”. The 4 different types of enemies will spawn respectively with the location of the map, north, east, south and west. Each of the enemies classes will extend the abstract Enemy class, by doing so we follow the DRY rule. The pros of this approach is that when we want to make adjustments to the enemies in the future, we will not have to go into each enemies concrete classes to make changes, only changes will be made in the Enemy abstract class. The 4 enemies will also uses “ResetManager” and “IntrinsicWeapon” to help despawn and reset everything once the player is dead or resting and to get thier default weapon.

### C. New ground

A new ground called “Volcano” is made to spawn all the “Fire” type enemies. Just like all the other ground classes, it extend the abstract “Ground” class from the engine and uses the “EnemyFacotry” to spawn the respective enemies for different sides of the map. All the previous ground class has also been update to use the 4 new enemies factory class for the 4 different sides. The pros of such approach is that we do not need to make changes in the ground class if we wanted to make adjustments on which enemies is being spawn at which side, all the adjustments is being done in the enemies factory classes and hence following SOLID principles.

### D. New weapon

A new weapon called “FlamingSword” is beening made for the “Fire” type enemies. Where it directly extends from the abstract “WeaponItem” class in the engine package and is being use by all the Fire type enemies via a dependency relationship. When the “Fire” type enemies die they will drop the “FlamingSword” onto the ground and

player can choose to pick it up. By resuing the “WeaponItem” class, we avoid having to create many same methods, following the DRY rule.