

Report

This tower defense game contains 11 class, tower and enemy each have 3 subclasses and gameInterface was the interface of the game. Then the game is main class to run the game

for the game, I add several methods and complete the game. When coming into the game it starts at the method MainMenu belong to gameInterface class, it allows you to choose an introduction or play a game directly. Every time when it needs to read users input it will check. If the input is not suitable, the game asks the player to input again.

```
please select what you whated
N: new Game
I: introduction Gmae
o
please input I(introduction game) or N(new Game):
n
```

When you choice the introduction, it will have an example to tell you the different kinds tower and enemy

the "n" means you want to play a new game
then it jump to the game menu, which have 2 sample game :game 1 and game which new character
in game 1, it calls the method,gameLevel1, which create a new game with corridor length of 15,
and call the method setMap in Game class. This method can build a map by ArrayList which save
the string " _ " as a path, and when a tower or enemy come into the map, it will replace the empty
map with a symbol of the characters. And the final station is F.

in the method named displayMpa, it will print all the array list to show the map. And it calls
Account class to print the budget
the map display as below

```
1
R _ _ _ _ _ _ _ _ _ _ F
money:200
```

before the game loop, the game will set all the enemies information in this game.
For example, game 1 will have tow rats and one elephant.
the game with new characters will have a new character and one rat

In the tower defense game, the game steps contain 3 steps in gameStep method of GameInterface class

- 1 ask user if they want to add a new tower
- 2 advance the towers and enemies
- 3 display the map for user

Step 1

the towerSelected method in gameInterface will ask what kind of tower the user wants to add, and where they wanted. For the corridor, the first and last steps are not available(ValidPoint method), and the position where have tower are not available. Furthermore, it will check if the money is enough for the tower. They call the method setTower in Game class to get the last 2 situations and then add the available tower.

```

please select tower(S-SlingShot; C-Catapult; T-new Tower; N-no Tower) :
5
please select tower position(position is less than 15):
16
please select beteen 2 to 14
1
please select beteen 2 to 14
9

money:160  _ _ _ _ _ _ _ S _ _ _ _ _ F

R
money:160  _ _ _ _ _ _ _ S _ _ _ _ _ F

please select tower(S-SlingShot; C-Catapult; T-new Tower; N-no Tower) :
t
please select tower position(position is less than 15):
1
please select beteen 2 to 14
9
sorry this position have a tower, you should choce the other one
7
sorry you don't have enough money, you can try other one or add 999(no) stop adding tower

money:170  _ _ _ _ _ _ _ S _ _ _ _ _ F

```

When it called the setTower in class game, it will first check which tower you want to save and then use the for loop to find all the tower position avoiding save tow tower in the same position. Then, it will call the check account class to find how many money remains. This method will return different numbers to represent different situations. You can build a tower unless you have a right position and have enough money. But, when the player chose a tower you can't built due to money, the player is not available to build the other one even player can afford it.

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in the Next step , it call the advance method in class game . In this method, it will loop every tower to add theirs time step and every enemy deleting the death one and finding the one who over the final points.

Step3

display the current game map for the player

the game will always loop the 3 steps until the game fished
 continue method in Game class enable to justify if the game can continue;
 there are 2 step to stop the game
 one is player win the game, that means the ArrayList of enemies is empty
 when any enemy achieves the final points, player Lose the game.
 It will stop and ask you want to stop the game or return to the game menu.