CA project submission for Software Development Fundamentals (semester 2)

Role Playing Console Game

Terran VS Zerg

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Section one: The project

Name of the Game : Terran VS Zerg

The game is base on the famous franchise StarCraft. All of the characters and story background is protected by copyright. This game is only study for purposes.

Terran VS Zerg is role play text base console game.

Definition:

The role-playing games relied heavily on either group consensus or the judgement of a single player. RPG system also affects the game environment, which can take any of several forms. Generic role-playing game systems, such as Basic Role-Playing, GURPS, and Fate, are not tied to a specific storytelling genre or campaign setting and can be used as a framework to play many different types of RPG. Many role-playing game systems involve the generation of random numbers by which success or failure of an action is determined. This can be done using dice (probably the most common method) or cards.

Information about my game:

Terran VS Zerg is text base console game. I have used Java program language. My game includes lots of class and it focuses on the abstraction and inheritance and polymorphism.

"The main difference is polymorphism is a specific result of inheritance. Polymorphism is where the method to be invoked is determined at runtime based on the type of the object. This is a situation that results when you have one class inheriting from another and overriding a particular method."

The story is about two races. One is the Terran and other one is the Zerg They are fighting over the Earth. The player can choose between the two race.

Terran:

The terrans (or humans) are a young species with psionic potential. The terrans of the Koprulu sector descend from the survivors of a disastrous 23rd century colonization mission from Earth. Compared to the protoss and zerg, the terrans are highly factionalized and endure frequent wars amongst themselves in addition to the more recent conflicts with their alien neighbors. Nevertheless, terrans stand as one of the three dominant species of the galaxy.

Zerg:

The Zerg are a race entirely unlike the Terrans. They are composed of many different species integrated into the Swarm via Zerg infestation. These creatures are rapidly and selectively evolved into deadly and efficient killers to further the driving Zerg imperative of achieving absolute domination. The Zerg make no use of technology to create their weapons, armor, or starships. Instead, these functions are efficiently fulfilled through biological adaptation and planned mutation of the Zerg strains. Even Zerg buildings are in fact specialized organs within the living, growing organism of a Zerg nest.

After picking race , the player can choose main hero. There are three different characters per race. All of the characters are randomly created so every time restarts the game and it will be different.

Terran

- Marine m1;
- Reaper r1;
- Ghost g1;

Zerg

- Hydralisk h1;
- Zergling z1;
- Queen q1;

Main Boss

- Kerrigan k1; // Zerg main boss
- TychusFindlay t1; // Terran main boss

All units must have :

- name
- health
- skill
- toughness
- level
- inventory

After choosing player can move around on the map 3x3. Every location has a unique story. Player needs to fight three enemies and needs to have 3 victories to be able to fight with the main boss. In the main fight, the gamer will get extra two characters. This will be team fight so player can change characters (if necessary). Player has to be careful because any loos of characters (dead) means end of the game.
The game has a combat system. I have used the dices to decide who will make attack or defence etc.

Combat system:

- attack dice base
- defend dice base
- magic paper rock scissors simple game
  > “Rock–paper–scissors is a hand game usually played between two people, in which each player simultaneously forms one of three shapes with an outstretched hand. These shapes are "rock", "paper", and "scissors".”
- change characters !! This optional only available on the main boss fight !!
- run a way exit from the game

Goal of the game:
If all player units are defeated the player loses (end game).
If the enemy boss is defeated, player wins (end game).

Section 2: Analysis

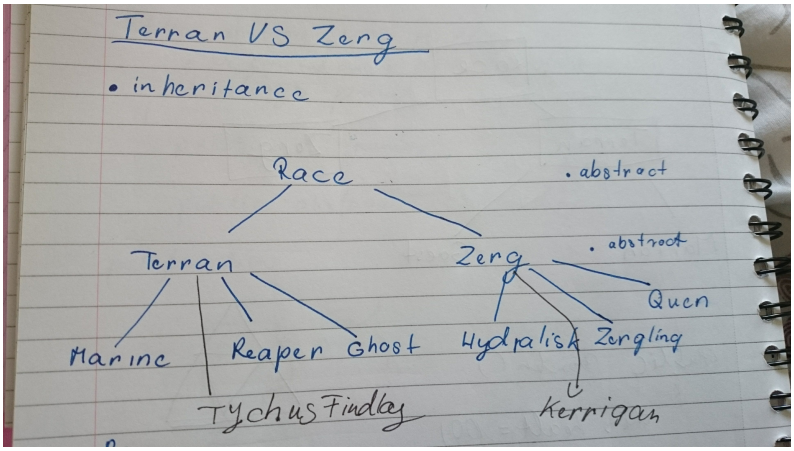
User	System	Code / objects required
Welcome message	Print to screen	Print statement
Enter your name	Read from keyboard / save value	Player object – set name field
Menu	Print to screen	Print menu
If the user choose 1 : info	Print to screen	Print info page
if the user choose 2 : start game	Print to screen	Start the game loop
If the user choose 3 : Exit	Print to screen	System.out(0);
Please select your race	Print to screen - options	Menu object / set choice in Player object
Please select your hero	Print to screen - options	Menu object / set choice in Player object
	System create objects	Marine m1 = new Marine(); ETC
Please move the character	Print out the map and direction	Call map class
Character moved	Print out the story	Call the story class
Character meet with enemy	Start the fight method	Fight.fightWithEnemy();

Please chose fight optional	Print attack / defend / exit	Call method
		attack();
		defend();

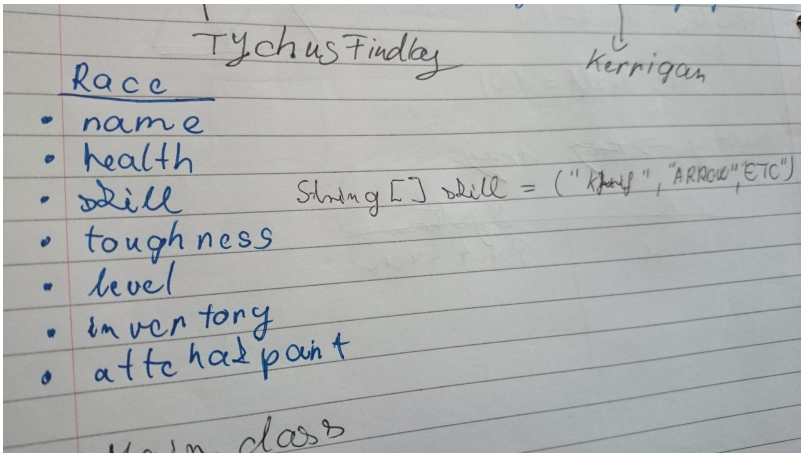
1: attack	Print out the attack result	Dice setup healthpoints
2: defend	Print out the defend result	Dice setup healthpoints
3: Exit	Exit from the game	System.out(0);
The gamer win	Print out hero infomations	fight.a[player.getHeroCharacter()].info();
Victory	Increase the win number	win++;
Lost the fight optional exit game or restart	Exit from the loop	(a[heroCharacterF].getHealth()<0){System.out.println("GAME OVER");}
Continue move the character find other enemy	Print out the map and direction make fight	Map class story class fight class
3 victory get message	Find the main Boss	Map class story class
Fighting with MAIN BOSS	Get extra unit print out the fight method	fight.fightWithEnemy();
1: attack	Print out the attack result	Dice setup healthpoints
2: defend	Print out the defend result	Dice setup healthpoints
3: change characters	Print out units name	charactercChangeMethod();
3: Exit	Exit from the game	System.out(0);
The gamer won the game restart the game or Exit	Print out VICTORY	switch (menunumber)
Victory	Increase the win number	win++;

Section 3: Development

Class layout / data structures used / logic flow of program. Why you decided to structure your program the way you have (diagrams / screen shots).



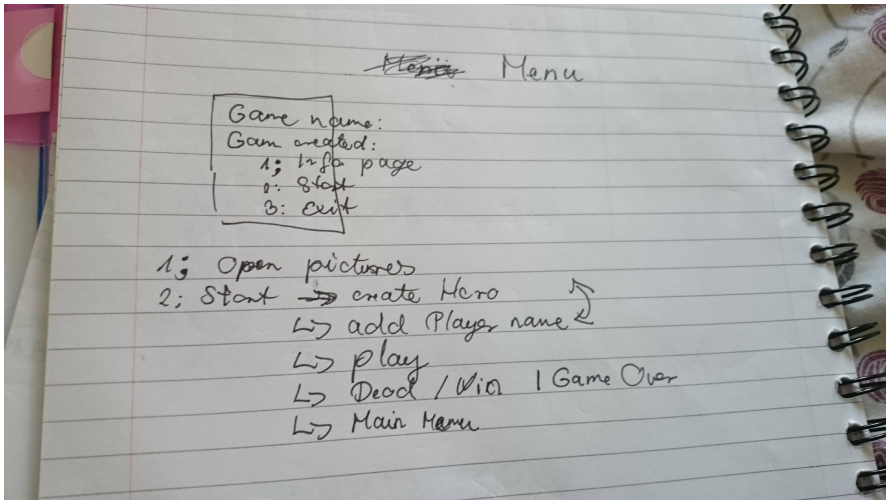
Abstract classes



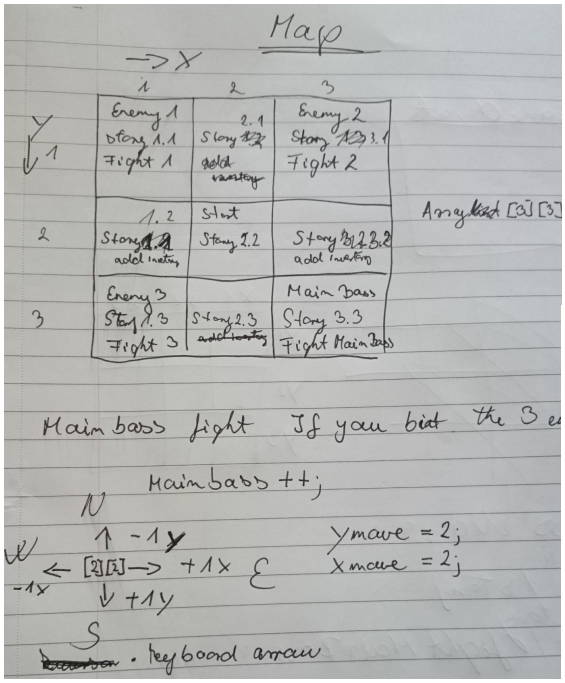
Race abstract class

```
public abstract class Race {

    private String name;
    private int health;
    private String[] skills =  {"magic knife / rock","plasma gun /paper","laser gun / Scissors"};
    private int skillposition;
    private String skill;
    private int toughness;
    private int level;
    private String[] inventory;
    private int attackPoint;

    Random r = new Random();
```

Race abstract class program



Game menu layout




```
public void mappingGame()
{
        System.out.println(" ");
        System.out.println("|-------------------------------|");
        System.out.println("| story 11 | story 21 | story 31 |");
        System.out.println("|-------------------------------|");
        System.out.println("| story 12 | story 22 | story 32 |");
        System.out.println("|-------------------------------|");
        System.out.println("| story 13 | story 23 | story 33 |");
        System.out.println("|-------------------------------|");
        System.out.println(" ");
}
```

```
public void mapHike()
{
    boolean exittheLOOP =false;
    do{
        mappingGame();
    nSWE();
    Scanner input = new Scanner(System.in);
    char e = input.next().charAt(0);
    switch (e) {
        case 'n':
            if (ymove>1)
            {
                System.out.print(" -up");
                ymove--;
                exittheLOOP = true;
            } else System.out.println("You can not move you are on the edge of the map");
            break;
        case 's':
            if (ymove<3)
            {
                System.out.print("-down");
                ymove++;
                exittheLOOP = true;
            } else System.out.println("You can not move you are on the edge of the map");
            break;
```

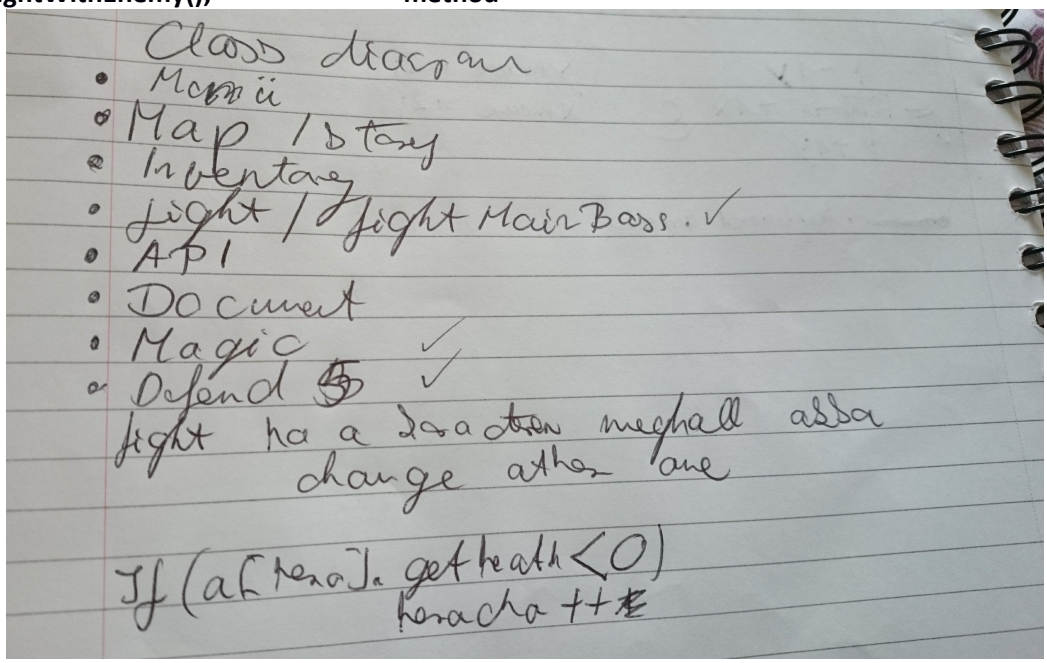
Map class design

```
public void fightWithEnemy()
  {
     defend = 5;
     magicCounter = 3;
     System.out.println("====");
     System.out.println("main character");
     a[heroCharacterF].info();

     if (heroCharacterF < 4) {
        do {
           enemy = r.nextInt(3) + 4;
           System.out.println(a[enemy].getHealth());
        } while (a[enemy].getHealth() < 0);

        System.out.println("====");
        System.out.println("Your ENEMY character");
        a[enemy].info();
     }
     if (heroCharacterF > 3) {
        do {
           enemy = r.nextInt(3) + 1;
           System.out.println(a[enemy].getHealth());
        } while (a[enemy].getHealth() < 0);

        System.out.println("====");
        System.out.println("Your ENEMY character");
        a[enemy].info();
     }


        do{
        // different attack
        do{
            System.out.println("Your choose Attack :1 Defend :2 Magic :3 Run Away :4 ");
            Scanner h = new Scanner(System.in);
            if (h.hasNextInt())
            {
             attachChoose=h.nextInt();
            }

            switch(attachChoose)
            {
                case 1:     // attack
                    attack();
                    break;
                case 2:     //defend
                    defend();
```

```
public void fightWithEnemy()
  {
     defend = 5;
     magicCounter = 3;
     System.out.println("====");
     System.out.println("main character");
     a[heroCharacterF].info();

     if (heroCharacterF < 4) {
        do {
           enemy = r.nextInt(3) + 4;
           System.out.println(a[enemy].getHealth());
        } while (a[enemy].getHealth() < 0);

        System.out.println("====");
        System.out.println("Your ENEMY character");
        a[enemy].info();
     }
     if (heroCharacterF > 3) {
        do {
           enemy = r.nextInt(3) + 1;
           System.out.println(a[enemy].getHealth());
        } while (a[enemy].getHealth() < 0);

        System.out.println("====");
        System.out.println("Your ENEMY character");
        a[enemy].info();
     }



       do{
```

```
// different attack
do{
   System.out.println("Your choose Attack :1 Defend :2 Magic :3 Run Away :4 ");
   Scanner h = new Scanner(System.in);
    if (h.hasNextInt())
    {
     attachChoose=h.nextInt();
    }

    switch(attachChoose)
    {
       case 1:   // attack
          attack();
          break;
       case 2:   //defend
          defend();
```

fight.fightWithEnemy(); **method**



Program debugs list

Section 4: Reflection

I my opinion It was difficult to me to create a lot of classes and I had to pass the objects between the classes. It was important to make good design on the paper and this layout had to be transferred to the program. If I had more time I would like to extend the map and maybe to change the combat system, other way give more AI support. I could use a jframe to make more visual display.

I have learned about the inheritance and the polymorphism. Those help to make more complex program and give opportunity to work on the team (abstract class). After I finished the java program I understood importance of collaboration in real life.