

**HACETTEPE UNIVERSITY**

**COMPUTER SCIENCE AND ENGINEERING DEPARTMENT**

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**IDENTITY NUMBER** : 21992943  
**COURSE** : BBM104  
**EXPERIMENT** : Programming Assignment III  
**SUBJECT** : Polymorphism, Exceptions  
**DATA DUE** : 07.05.2021  
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**MAIN PROGRAM** : A War Game

## 2. Software Design Notes

### 2.1 Problem:

There are two groups. The names of these groups are "Zorde" and "Calliance". Each group has different types of soldiers and each soldier has different strengths and characteristics. This game is played on a board. This game is similar to chess. The aim of the game is to move the soldier of the group and kill the opposing team.

### 2.2 Solution:

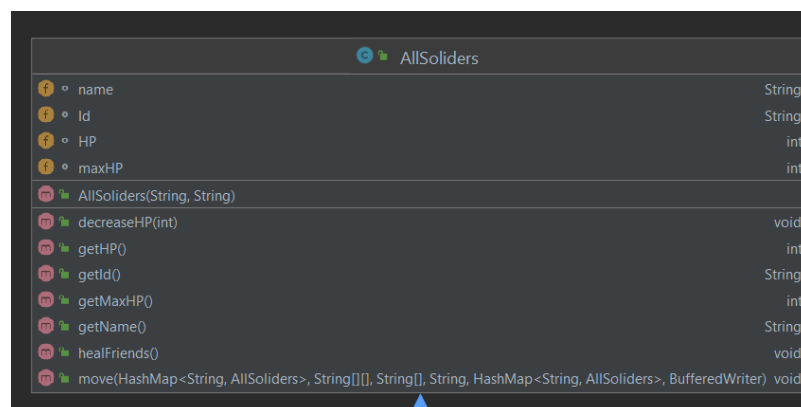
#### 2.1 Initialization:

I created class for AllSoliders and its subclasses. Also I created, Methods, MyException and Main class. Also, there is a constant class for constant values.

I took the "initials.txt" and "commands.txt" and read one by one. While reading create an object belonging to the associated class and add it in an ArrayList.

I used a lot of methods. And override this methods in in inherit classes. It is obvious what it does from its name for most of these methods. These methods make my code more flexible, especially move method.

#### 2.2 Classes:



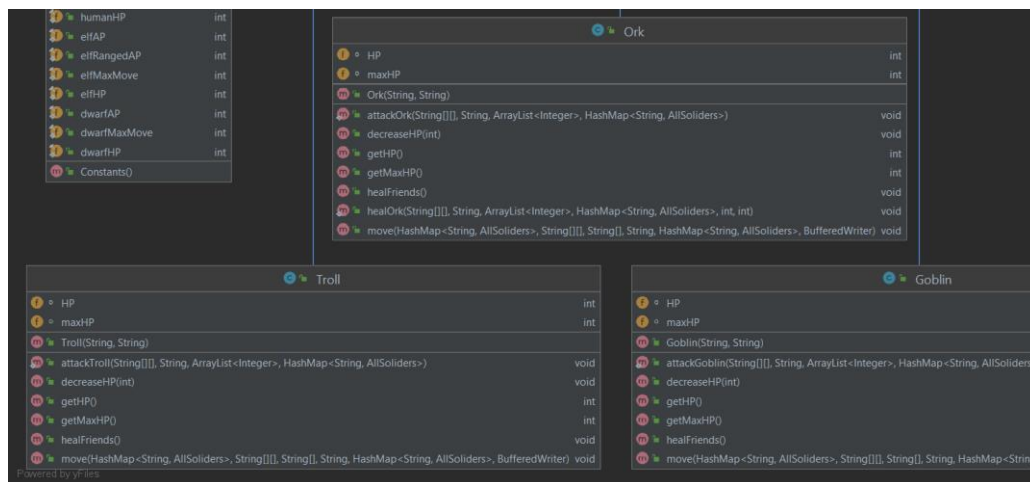
#### 1. AllSoliders Class

**2.1** I defined private attributes for People Class. These are private because it is safer.

**2.2** I create get methods. Because I need to get some attributes to complete the command. Also, I override this methods in subclasses.

**2.3** Then, I created an Zorde Class and Calliance Class(subclass) inherits the attributes from the AllSoliders class (superclass). This subclasses doesn't have important method. These are just to define group of solidier.

**2.4** Then, I created Ork, Troll, Goblin Class(subclass) inherits the attributes. These are very similar to each other. Now I will explain these 3 subclasses one by one. I explained all override methods in Initialization part.



## 1. Ork Class

Ork Class has some methods and attributes. All methods are override method without `healOrk()` and `attackOrk()`.

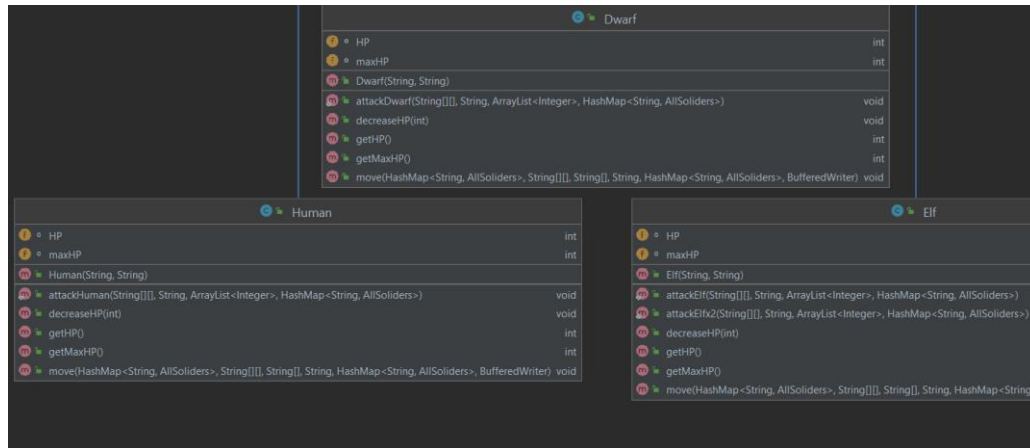
## 2. Troll Class

Troll Class has some methods and attributes. All methods are override method without `attackTroll()`.

## 3. Goblin Class

Troll Class has some methods and attributes. All methods are override method without `attackGoblin()`.

**2.5** Then, I created Dwarf, Human, Elf Class(subclass) inherits the attributes. These are very similar to each other. Now I will explain these 3 subclasses one by one. I explained all override methods in Initialization part.



## 1. Dwarf Class

Dwarf Class has some methods and attributes. All methods are overridden without `attackDwarf()`.

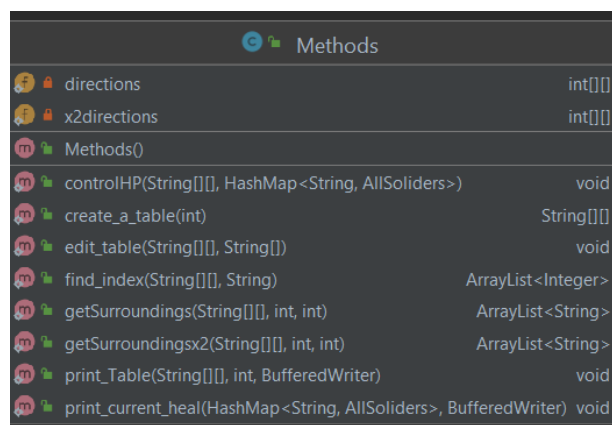
## 2. Human Class

Human Class has some methods and attributes. All methods are overridden without `attackHuman()`.

## 3. Elf Class

Elf Class has some methods and attributes. All methods are overridden without `attackElf()`.

## 2.Methods Class



In order not to repeat what I use all the time, I created this class and added methods in it. These are `controlHP()`, `create_a_table`, `edit_table`, `find_index`, `getSurrounding`, `getSurroundingx2`, `print_table`, `print_current_heal`. It is obvious what it does from its name for these methods. I also explained all methods with comments in my code.

### **3.Constant Class**

This class has some constant values. For example, `elfAP`, `elfHP`.

### **4.MyException Class**

When boundary exception occurred, it threw this exception.