# CANNON FODDER GROUP 8 PROJECT REPORT

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In this project, our goal is making a slash game using object-oriented programming. In this project we have 23 classes and 1 interface class. Our first class was "Item". Iteam has private data member as name, weight and value; attributes are getName, setName, getWeight, setWeight, getValue, setValue and printInfo. It was superclass of Clothes and Weapons.

Clothes has one extra attributes and it is protection and and it has an extra private data member as protection. Clothes has 3 subclass's. They are HardArmor, MediumArmor and LightArmor.

Weapons has one extra private data member and it is damage and it has one extra attributes called damage. Weapons has 3 subclasses. They are Shileds, Swords and Wands. In every subclass's of Weapons we have one extra data member and it is attack. And in every subclass we have an attributes that is called firstAttack.

Shields has 3 subclass. They are SmallShield, Buckler and TowerShiled.
Swords has 3 subclass. They are LongSword, Scimitar and ShortSword.
Wands has 2 subclass. They are BoneWands and WoodWands.

This project has an Interface class called InterfaceCharacter. This class has attributes as pick, specialAction, examine, listInventory, wear, attack, unwieldy, wield and calculateDamage.

In this project we have another class that called Characters. This class has implemented from InterfaceCharacter class. Characters private data members are Strength, Vitality, Intelligence, hp, isWielded, inventory, calculateDamage, weapons, clothes, damage1, invSize and level. We have attributes as attack, calculateDamage, wield, unwieldy, wear, pick specialAction, examine, listInventory and printInfo. In addition we have setter and getter methods for every data member. This class has 4 subclass's. They are EnemySoldier, Fighter, Healer and Tanks.

EnemySoldier has a private data member as hp.
Fighter has a protected data member as level.
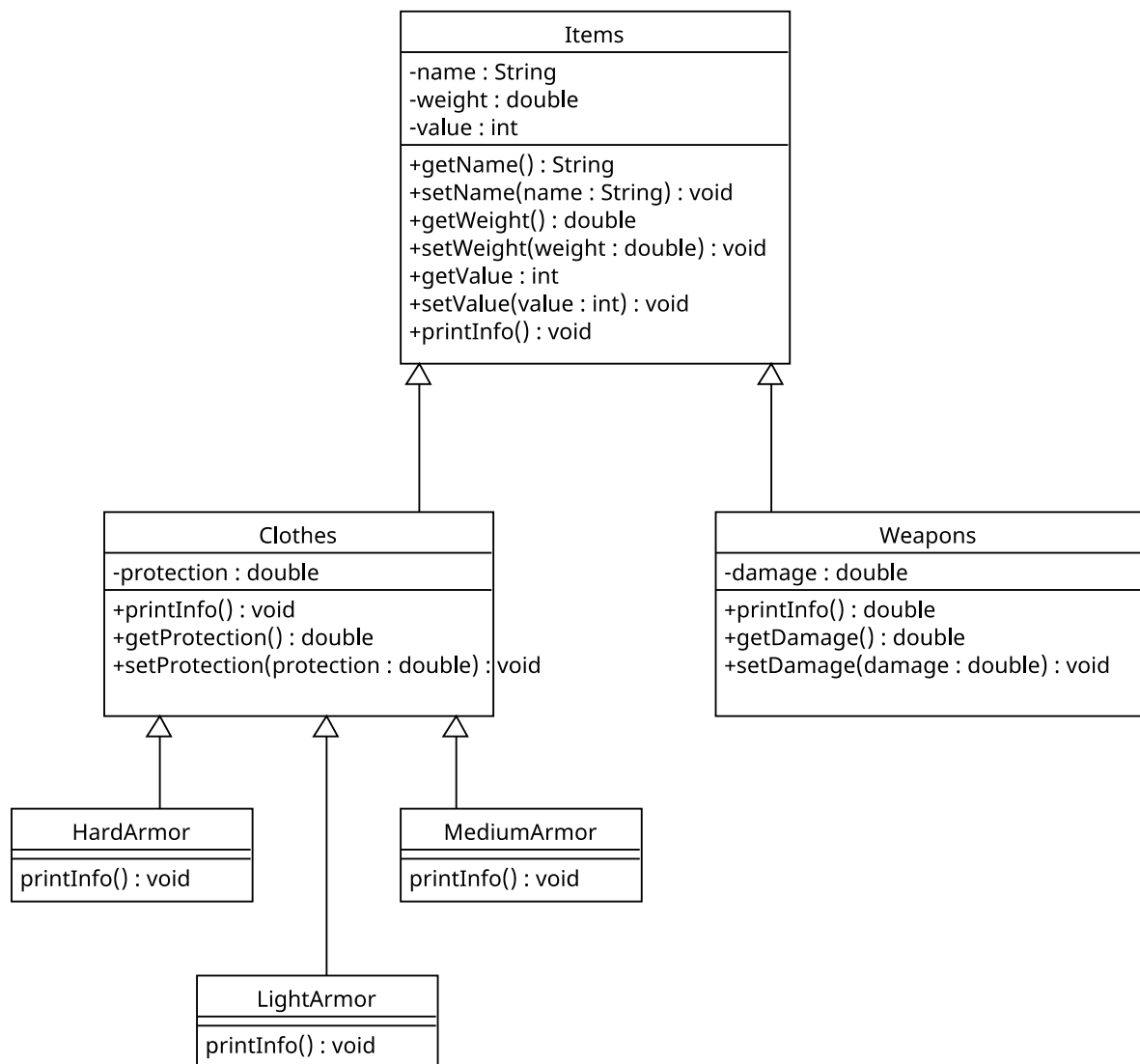Healer has a protected data as level.
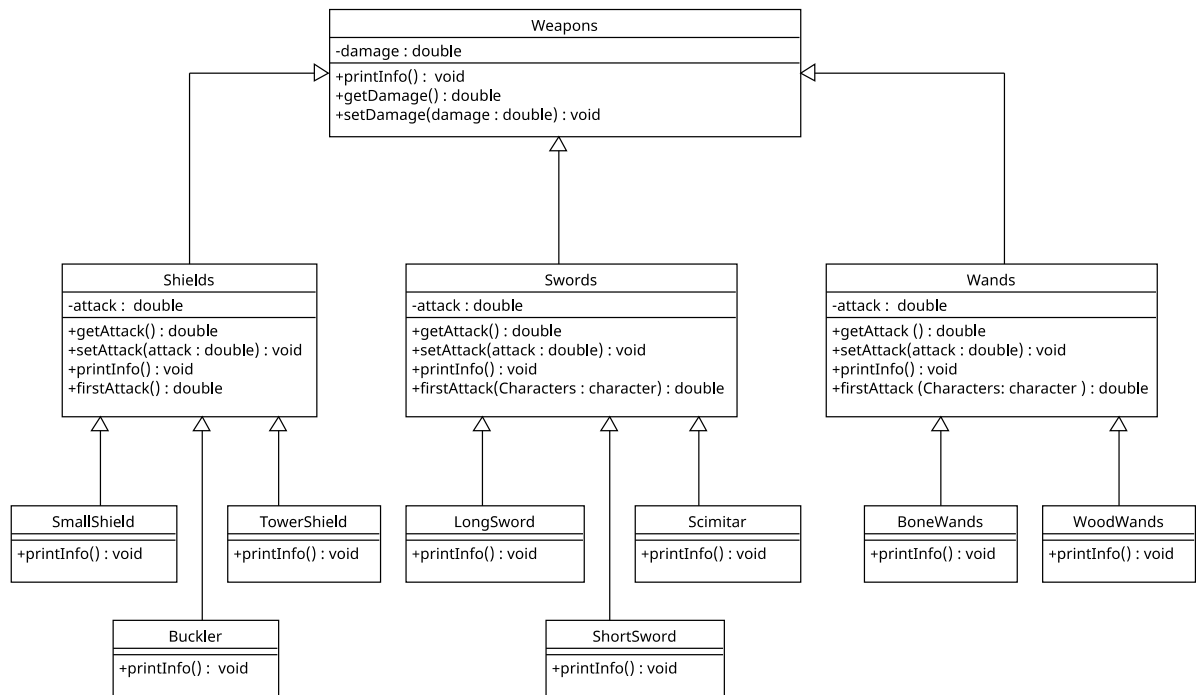Tank has a protected data member as level.

We have Game class which has main method. This project runs at this class. In this class we create our characters as random and for this we use RandomSecure class. We create object from each class. We create ArrayLists for keeping our characters.
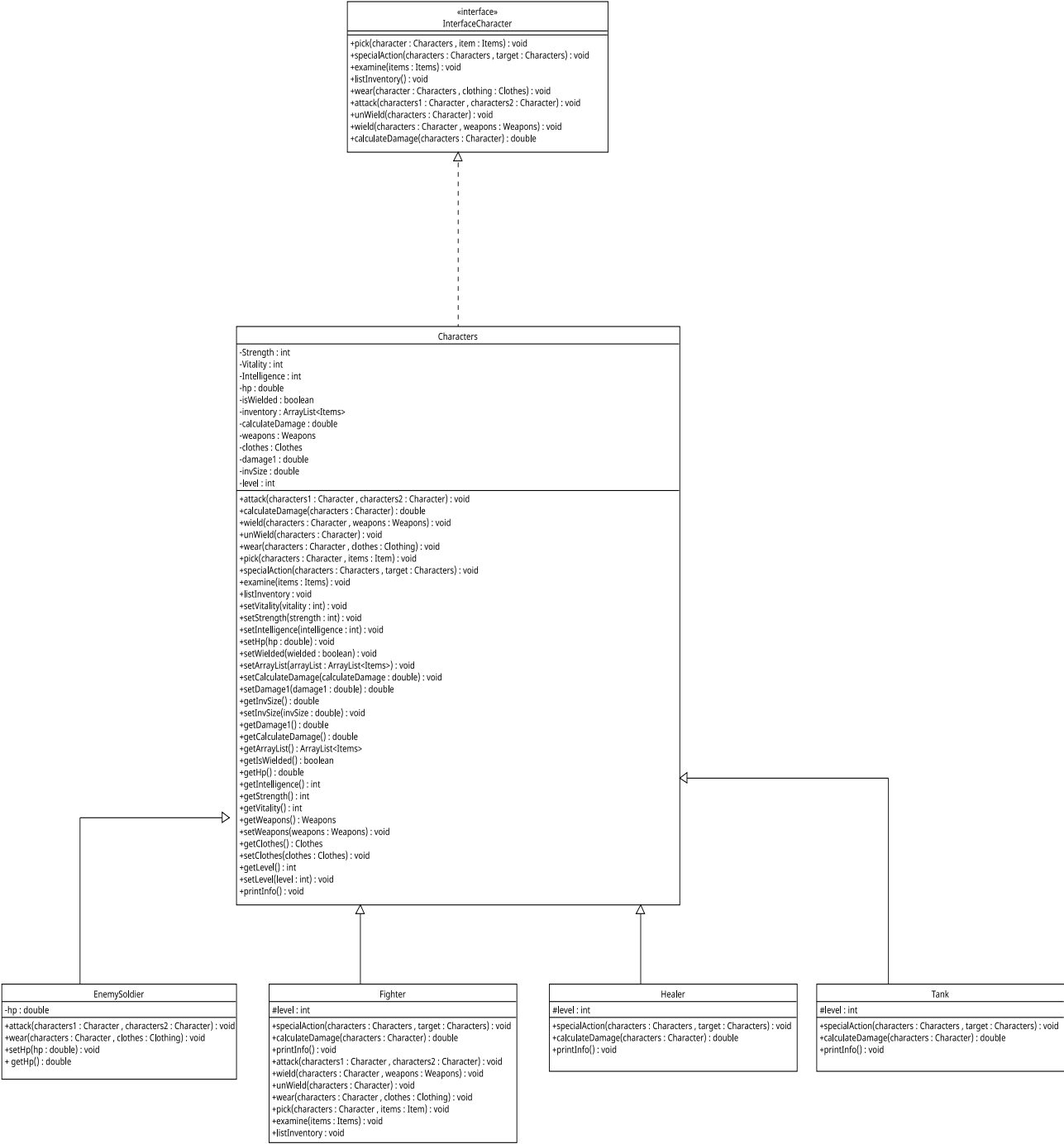
We have option menu in main method. For example, if you choose 1 you would attack to enemy soldier. If you choose 2 you would choose wield and if you choose 3 you would get armor. If you choose 4 you would see inventory. If you choose 5 you would see examine. If you choose 6 you would use special action and you should choose 7 to terminate the program.

In our game if you level would increase your enemies' number will be twice of your level. If all the characters would die than game over.

## UML CLASS DIAGRAMS

```
┌─────────────────────────────────────────┐
│                  Items                    │
├─────────────────────────────────────────┤
│ -name : String                            │
│ -weight : double                          │
│ -value : int                              │
├─────────────────────────────────────────┤
│ +getName() : String                       │
│ +setName(name : String) : void            │
│ +getWeight() : double                     │
│ +setWeight(weight : double) : void        │
│ +getValue : int                           │
│ +setValue(value : int) : void             │
│ +printInfo() : void                       │
└─────────────────────────────────────────┘
```

```
┌───────────────────────────────────────────────┐
│                    Clothes                       │
├───────────────────────────────────────────────┤
│ -protection : double                             │
├───────────────────────────────────────────────┤
│ +printInfo() : void                              │
│ +getProtection() : double                        │
│ +setProtection(protection : double) :│void       │
└───────────────────────────────────────────────┘
```

```
┌───────────────────────────────────────────┐
│                  Weapons                    │
├───────────────────────────────────────────┤
│ -damage : double                            │
├───────────────────────────────────────────┤
│ +printInfo() : double                       │
│ +getDamage() : double                       │
│ +setDamage(damage : double) : void          │
└───────────────────────────────────────────┘
```

```
┌─────────────────────────┐
│        HardArmor         │
├─────────────────────────┤
├─────────────────────────┤
│ printInfo() : void       │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│       MediumArmor        │
├─────────────────────────┤
├─────────────────────────┤
│ printInfo() : void       │
└─────────────────────────┘
```

```
┌─────────────────────────┐
│        LightArmor        │
├─────────────────────────┤
├─────────────────────────┤
│ printInfo() : void       │
└─────────────────────────┘
```

```
                          ┌─────────────────────────────────────┐
                          │              Weapons                 │
                          ├─────────────────────────────────────┤
                          │ -damage : double                     │
                          ├─────────────────────────────────────┤
                          │ +printInfo() :  void                 │
                          │ +getDamage() : double                │
                          │ +setDamage(damage : double) : void   │
                          └─────────────────────────────────────┘
```

**Shields**
- -attack : double
- +getAttack() : double
- +setAttack(attack : double) : void
- +printInfo() : void
- +firstAttack() : double

**Swords**
- -attack : double
- +getAttack() : double
- +setAttack(attack : double) : void
- +printInfo() : void
- +firstAttack(Characters : character) : double

**Wands**
- -attack :  double
- +getAttack () : double
- +setAttack(attack : double) : void
- +printInfo() : void
- +firstAttack (Characters: character ) : double

**SmallShield**
- +printInfo() : void

**TowerShield**
- +printInfo() : void

**LongSword**
- +printInfo() : void

**Scimitar**
- +printInfo() : void

**BoneWands**
- +printInfo() : void

**WoodWands**
- +printInfo() : void

**Buckler**
- +printInfo() :  void

**ShortSword**
- +printInfo() : void

## «interface» InterfaceCharacter

```
+pick(character : Characters , item : Items) : void
+specialAction(characters : Characters , target : Characters) : void
+examine(items : Items) : void
+listInventory() : void
+wear(character : Characters , clothing : Clothes) : void
+attack(characters1 : Character , characters2 : Character) : void
+unWield(characters : Character) : void
+wield(characters : Character , weapons : Weapons) : void
+calculateDamage(characters : Character) : double
```

## Characters

```
-Strength : int
-Vitality : int
-Intelligence : int
-hp : double
-isWielded : boolean
-inventory : ArrayList<Items>
-calculateDamage : double
-weapons : Weapons
-clothes : Clothes
-damage1 : double
-invSize : double
-level : int
```

```
+attack(characters1 : Character , characters2 : Character) : void
+calculateDamage(characters : Character) : double
+wield(characters : Character , weapons : Weapons) : void
+unWield(characters : Character) : void
+wear(characters : Character , clothes : Clothing) : void
+pick(characters : Character , items : Item) : void
+specialAction(characters : Characters , target : Characters) : void
+examine(items : Items) : void
+listInventory : void
+setVitality(vitality : int) : void
+setStrength(strength : int) : void
+setIntelligence(intelligence : int) : void
+setHp(hp : double) : void
+setWielded(wielded : boolean) : void
+setArrayList(arrayList : ArrayList<Items>) : void
+setCalculateDamage(calculateDamage : double) : void
+setDamage1(damage1 : double) : double
+getInvSize() : double
+setInvSize(invSize : double) : void
+getDamage1() : double
+getCalculateDamage() : double
+getArrayList() : ArrayList<Items>
+getIsWielded() : boolean
+getHp() : double
+getIntelligence() : int
+getStrength() : int
+getVitality() : int
+getWeapons() : Weapons
+setWeapons(weapons : Weapons) : void
+getClothes() : Clothes
+setClothes(clothes : Clothes) : void
+getLevel() : int
+setLevel(level : int) : void
+printInfo() : void
```

## EnemySoldier

```
-hp : double
```

```
+attack(characters1 : Character , characters2 : Character) : void
+wear(characters : Character , clothes : Clothing) : void
+setHp(hp : double) : void
+ getHp() : double
```

## Fighter

```
#level : int
```

```
+specialAction(characters : Characters , target : Characters) : void
+calculateDamage(characters : Character) : double
+printInfo() : void
+attack(characters1 : Character , characters2 : Character) : void
+wield(characters : Character , weapons : Weapons) : void
+unWield(characters : Character) : void
+wear(characters : Character , clothes : Clothing) : void
+pick(characters : Character , items : Item) : void
+examine(items : Items) : void
+listInventory : void
```

## Healer

```
#level : int
```

```
+specialAction(characters : Characters , target : Characters) : void
+calculateDamage(characters : Character) : double
+printInfo() : void
```

## Tank

```
#level : int
```

```
+specialAction(characters : Characters , target : Characters) : void
+calculateDamage(characters : Character) : double
+printInfo() : void
```

## Game

```
+temp : boolean
```

```
+printMenu() : void
+enemyNumber(characters : Characters , arrayList : ArrayList) : void
+main(String [] args) : void
```

# SAMPLE OUTPUTS



```
"C:\Program Files\Java\jdk-17.0.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.1\lib\idea_rt.jar=50774:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.1\bin" -Dfil
Hello, please enter your name:
Sabahaddin
Sabahaddin welcome.
******FIGHTER INFO********
Vitality of the Character: 3
Strength of the Character: 9
Intelligence of the Character: 5
Hp of the Character: 7.4
Wield: Short Sword
Armor: Light Armor
Level: 0

******HEALER INFO********
Vitality of the Character: 2
Strength of the Character: 5
Intelligence of the Character: 7
Hp of the Character: 4.600000000000005
Wield: Wood Wand
Armor: Medium Armor
Level: 0

******TANK INFO********
Vitality of the Character: 7
Strength of the Character: 3
Intelligence of the Character: 4
Hp of the Character: 3.8999999999999995
Wield: Scimitar
Armor: Medium Armor
Level: 0

Please enter 1 to attack to enemy soldier.
Please enter 2 to wield.
Please enter 3 to armor
Please enter 4 to see inventory
Please enter 5 to see examine
Please enter 6 to use special action
Please enter 7 to exit
```



```
Please enter 5 to see examine
Please enter 6 to use special action
Please enter 7 to exit
2
1
Wield Part
Choose your character to wield
Enter 1 for fighter
Enter 2 for tank
Enter 3 for healer
1
If you want to take enemy's weapon enter to 1
If you want to take random weapon enter to 2
2
******FIGHTER INFO********
Vitality of the Character: 3
Strength of the Character: 9
Intelligence of the Character: 5
Hp of the Character: 7.4
Wield: Short Sword
Armor: Light Armor
Level: 0
You've wielded the Wand
******FIGHTER INFO********
Vitality of the Character: 3
Strength of the Character: 9
Intelligence of the Character: 50
Hp of the Character: 7.4
Wield: Bone Wand
Armor: Light Armor
Level: 0
Please enter 1 to attack to enemy soldier.
Please enter 2 to wield.
Please enter 3 to armor
Please enter 4 to see inventory
Please enter 5 to see examine
Please enter 6 to use special action
Please enter 7 to exit
```

```
Please enter 5 to see examine
Please enter 6 to use special action
Please enter 7 to exit

1
Armor Part
Choose your character to Wear
Enter 1 for Fighter
Enter 2 for Tank
Enter 3 for Healer
1
If you want to take enemy's armor enter to 1
If you want to take random weapon enter to 2
2
7.4
You got protection
27.4
Please enter 1 to attack to enemy soldier.
Please enter 2 to wield.
Please enter 3 to armor
Please enter 4 to see inventory
Please enter 5 to see examine
Please enter 6 to use special action
Please enter 7 to exit
1
1
Armor Part
Choose your character to Wear
Enter 1 for Fighter
Enter 2 for Tank
Enter 3 for Healer
2
If you want to take enemy's armor enter to 1
If you want to take random weapon enter to 2
2
3.8999999999999995
You got protection
13.899999999999999
Please enter 1 to attack to enemy soldier.
Please enter 2 to wield.
Please enter 3 to armor
```

```
Enter 1 to examine fighter's items
Enter 2 to examine healer's items
Enter 3 to examine tank's items
1
Examine:
Name: Bone Wand
Weight: 3.0
Value: 20
Damage: 10.0
Attack: 0.0
Examine:
Name: Hard Armor
Weight: 20.0
Value: 20
Protection= 20.0
Please enter 1 to attack to enemy soldier.
Please enter 2 to wield.
Please enter 3 to armor
Please enter 4 to see inventory
Please enter 5 to see examine
Please enter 6 to use special action
Please enter 7 to exit
6
1
Choose a character to use its special power
Enter 1 to use Fighter's special action
Enter 2 to use Tank's special action
Enter 3 to use Healer's special action
1
5.0
Fighter has used its special action.
-175.0
Please enter 1 to attack to enemy soldier.
Please enter 2 to wield.
Please enter 3 to armor
Please enter 4 to see inventory
Please enter 5 to see examine
Please enter 6 to use special action
Please enter 7 to exit
```