The Combat Game -Assignment(1)

**FIT9133 Programming foundations
in python S2 2018.**

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Introduction

At the start the game, each player is given a starting total of $10. Units are purchased and stored in their army. The user may spend as much or as little of their money as they desire. After the armies are assembled, the units are then made to fight each other in the order they were purchased in.

There are three types of units available in the **Basic Game** and each unit cost $1. Each unit has weakness and strength. The outcome of battles based on strength and weakness when units enter combat is following.

Type of unit	Archer	Soldier	Knight
Archer	Tie	Archer	Knight
Soldier	Archer	Tie	Soldier
Knight	Knight	Soldier	Tie

After each fight, the winner is left on the battlefield to fight the next combatant. If both units lose, then two new units are taken from army and begin their fight. The outcome of each fight is listed until one army is defeated. Once this occurs, the winner is listed and the **Basic Game** ends.

The **Extended Game** is upgraded version of **Basic Game** in which there are two new units for the user to choose from. The first one Siege Equipment who win against everyone except Knights and Wizards and the second one Wizard who can beat anything, but they can't dodge the Archer arrows.

Based on weakness and strength the costs are different for different units. The Archer cost is $2, Soldier cost is $1, Knight cost is $2, Siege Equipment cost is $2 and Wizard cost is $3. The outcomes of battles based on their strength and weakness when units enter the combat is following.

Type of unit	Archer	Soldier	Knight	Siege Equipment	Wizard
Archer	Tie	Archer	Knight	Siege Equipment	Archer
Soldier	Archer	Tie	Soldier	Siege Equipment	Wizard
Knight	Knight	Soldier	Tie	Knight	Wizard
Siege Equipment	Siege Equipment	Siege Equipment	Knight	Tie	Wizard
Wizard	Archer	Wizard	Wizard	Wizard	Tie

Money remaining after the purchasing is used to hire and outfit medics. When a unit dies , it will be returned to the pool at the back of the army. Each time this happens, supplies for the medics decreases. Once the medics have no supplies left, they will be unable to save any more units.

After each fight, the winner is left on the battlefield to fight the next combatant. If both units lose, then two new units are taken from army and begin their fight. The outcome of each fight is listed until one army is defeated. Once this occurs, the winner is listed and the **Extended Game** ends.

The Basic Game

Step by step demonstration of how to use the program.

1. As the basic game begin the user will be prompted to take decision whether user wants to add unit or not. User will be prompted to enter "y" to add unit or "n" not to add unit.

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =
```

2. If user hits "y", user will get available list of units and prompted to choose one.

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =
```

3. Once user has selected any unit the player-1 army list will be updated and the fund value will be deducted by $1.

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =1
Your remaining funds is = $9
If u want to add unit hit y or n not to add =
```

4. User will be again prompted to take a decision and select any unit .Every time user purchases one unit, player-1 list will be updated and this process will continue up until the fund value is zero. But if user wants to buy just few units then he needs to hit "n" to stop addition of units.

```
If u want to add unit hit y or n not to add =y2
Invalid Selection
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =3
Your remaining funds is = $2
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =2
Your remaining funds is = $1
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =3
Your remaining funds is = $0
Player one your army units list is = ['Soldier', 'Knight', 'Knight', 'Soldier', 'Archer', 'Soldier', 'Archer', 'Knight', 'Soldier', 'Knight']
Your remaining fund is = $0
```

When user utilized all fund value and fund value is zero.

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =2
Your remaining funds is = $9
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =3
Your remaining funds is = $8
If u want to add unit hit y or n not to add =n
Player one your army units list is = ['Soldier', 'Knight']
Your remaining fund is = $8
```

When user decides to purchase just few units and stop addition of units to player one list

5. Once player-1 list is established user will be prompted to take a decision for player-2 whether user wants to add units or not . Steps are same for adding units in player-2 list as of player-1 .

```
Player two you have $10 make your army selection
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =1
Your remaining funds is = $9
If u want to add unit hit y or n not to add =y
1.Archer
2.Soldier
3.Knight
Your Selection =3
Your remaining funds is = $8
If u want to add unit hit y or n not to add =n
Player Two your army units list is = ['Archer', 'Knight']
Your remaining fund is = $8
```

6. After both players list is updated the combat will begin and output for every units fight will be declared and eventually the final result of war will be declared.

```
*-*-* Player One and Player Two Units Combat Outcome *-*-*


Archer from army 2 won
Knight from army 1 won
---Tie---


No outcome. Match is a tie.
```

7. While taking the decision if user types anything other than "y" or "n", Invalid Selection message will be rendered and user will be prompted to take decision again.

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =yes
Invalid Selection
If u want to add unit hit y or n not to add =
```

8. While selecting unit from the available list if user types other than 1 or 2 or 3, you selected wrong option message will be rendered and user will again need to decide whether user wants to add unit or not.

```
1.Archer
2.Soldier
3.Knight
Your Selection =r
You selected wrong option
If u want to add unit hit y or n not to add =
```

The Extended Game

1) As the Extended Game begin the user will be prompted to take decision whether user wants to add unit or not. User will be prompted to enter "y" to add unit or "n" not to add unit.

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =
```

2) If user hits "y", user will get available list of units and prompted to choose one.

```
If u want to add unit hit y or n not to add =y
1.  Archer = $2
2.  Soldier = $1
3.  Knight = $2
4.  Siege Equipment = $2
5.  Wizard = $3
Your Selection =
```

3) Once user has selected any unit the player-1 army list will be updated and the fund value will be deducted by $1.

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =y
1.  Archer = $2
2.  Soldier = $1
3.  Knight = $2
4.  Siege Equipment = $2
5.  Wizard = $3
Your Selection =1
Your remaining funds is = $8
If u want to add unit hit y or n not to add =
```

4) User will be again prompted to take a decision and select any unit .Every time user purchases one unit, player-1 list will be updated and this process will continue up until the fund value is zero. But if user wants to buy just few units and save rest of the money for the medics then he needs to hit "n" to stop addition of units.

```
If u want to add unit hit y or n not to add =y
1. Archer = $2
2. Soldier = $1
3. Knight = $2
4. Siege Equipment = $2
5. Wizard = $3
Your Selection =5
Your remaining funds is = $5
If u want to add unit hit y or n not to add =y
1. Archer = $2
2. Soldier = $1
3. Knight = $2
4. Siege Equipment = $2
5. Wizard = $3
Your Selection =3
Your remaining funds is = $3
If u want to add unit hit y or n not to add =y
1. Archer = $2
2. Soldier = $1
3. Knight = $2
4. Siege Equipment = $2
5. Wizard = $3
Your Selection =2
Your remaining funds is = $2
If u want to add unit hit y or n not to add =y
1. Archer = $2
2. Soldier = $1
3. Knight = $2
4. Siege Equipment = $2
5. Wizard = $3
Your Selection =4
Your remaining funds is = $0
Player one your army units list is = ['Archer', 'Wizard', 'Knight', 'Soldier', 'Siege Equipment']
Your remaining fund is = $0
```

When user utilized all fund values and fund value is zero.

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =y
1. Archer = $2
2. Soldier = $1
3. Knight = $2
4. Siege Equipment = $2
5. Wizard = $3
Your Selection =5
Your remaining funds is = $7
If u want to add unit hit y or n not to add =y
1. Archer = $2
2. Soldier = $1
3. Knight = $2
4. Siege Equipment = $2
5. Wizard = $3
Your Selection =2
Your remaining funds is = $6
If u want to add unit hit y or n not to add =n
Player one your army units list is = ['Wizard', 'Soldier']
Your remaining fund is = $6
```

When user decides to purchase just few units and save rest fund values for medics.

5) Once player-1 list is established user will be prompted to take a decision for player-2 whether user wants to add units or not . Steps are same for adding units in player-2 list as of player-1.

```
Player two you have $10 make your army selection
If u want to add unit hit y or n not to add =y
1. Archer = $2
2. Soldier = $1
3. Knight = $2
4. Siege Equipment = $2
5. Wizard = $3
Your Selection =3
Your remaining funds is = $8
If u want to add unit hit y or n not to add =y
1. Archer = $2
2. Soldier = $1
3. Knight = $2
4. Siege Equipment = $2
5. Wizard = $3
Your Selection =5
Your remaining funds is = $5
If u want to add unit hit y or n not to add =n
Player TWO your army units list is = ['Knight', 'Wizard']
Your remaining fund is = $5
```

6) After both players list is established the combat will begin and output for every units fight will be declared and died unit will be appended to their respective army automatically until medics value is zero. Eventually the final result of war will be declared.

```
*-*-* Player One and Player Two Units Combat Outcome *-*-*

Wizard from army 1 won
Tie
Soldier from army 1 won
Wizard from army 2 won
Tie
Soldier from army 1 won
Wizard from army 2 won
Tie
Soldier from army 1 won

All units of army two are dead so army one is the winner
```

7) While taking the decision if user types anything other than "y" or "n", Invalid Selection message will be rendered and user will be prompted to take decision again

```
Player one you have $10 make your army selection
If u want to add unit hit y or n not to add =yes
Invalid Selection
If u want to add unit hit y or n not to add =
```

8) While selecting unit from the available list if user types other than 1 or 2 or 3, you selected wrong option message will be rendered and user will again need to decide whether user wants to add unit or not.

```
1.Archer
2.Soldier
3.Knight
Your Selection =r
You selected wrong option
If u want to add unit hit y or n not to add =
```

Conclusion

The Basic Game different cases and their output:-

1) Player one your army units list is = []

Player Two your army units list is = []

--* Player One and Player Two Units Combat Outcome *-*-*

No outcome. Match is a tie.

2) Player one your army units list is = ['Knight']

Player Two your army units list is = []

--* Player One and Player Two Units Combat Outcome *-*-*

Player two has no unit so player one is the winner.

3) Player one your army units list is = []

Player Two your army units list is = ['Archer']

--* Player One and Player Two Units Combat Outcome *-*-*

Player one has no unit so player two is the winner.

4) Player one your army units list is = ['Knight', 'Soldier', 'Knight', 'Soldier', 'Archer', 'Archer', 'Archer', 'Soldier', 'Soldier', 'Soldier']

Player Two your army units list is = ['Soldier', 'Soldier', 'Knight', 'Knight', 'Knight', 'Archer', 'Archer', 'Knight', 'Soldier', 'Knight']

--* Player One and Player Two Units Combat Outcome *-*-*

Soldier from army 2 won
----Tie----
Soldier from army 2 won
----Tie----
Knight from army 2 won
Knight from army 2 won
Knight from army 2 won
Soldier from army 1 won
Soldier from army 1 won
Soldier from army 1 won
Archer from army 2 won
Archer from army 2 won
Archer from army 2 won

Player one has no unit so player two is the winner.

5)

```
Player one your army units list is = ['Knight']

Player Two your army units list is = ['Archer', 'Soldier']

*-*-* Player One and Player Two Units Combat Outcome *-*-*


Knight from army 1 won
Soldier from army 2 won


Player one has no unit so player two is the winner.
```

The Extended Game Different cases and their result:-

1)
```
Player one your army units list is = ['Wizard']

Player TWO your army units list is = ['Archer']

*-*-* Player One and Player Two Units Combat Outcome *-*-*

Archer from army 2 won
Archer from army 2 won
Archer from army 2 won
Archer from army 2 won
Archer from army 2 won
Archer from army 2 won
Archer from army 2 won
Archer from army 2 won


All units of army one are dead so army two is the winner
```

2)
```
Player one your army units list is = ['Wizard']

Player TWO your army units list is = ['Wizard']

*-*-* Player One and Player Two Units Combat Outcome *-*-*

Tie
Tie
Tie
Tie
Tie
Tie
Tie
Tie

No outcome. Match is a tie
```

3)
```
Player one your army units list is = ['Archer', 'Soldier', 'Knight', 'Siege Equipment', 'Wizard']

Player TWO your army units list is = ['Wizard', 'Siege Equipment', 'Knight', 'Soldier', 'Archer']
```

```
*-*-* Player One and Player Two Units Combat Outcome *-*-*


Archer from army 1 won
Siege Equipment from army 2 won
Siege Equipment from army 2 won
Knight from army 1 won
Tie
Seige Equipment from amry 1 won
Seige Equipment from army 1 won


All units of army two are dead so army one is the winner
```

4)
```
Player one your army units list is = ['Siege Equipment', 'Wizard']
```

```
Player TWO your army units list is = ['Archer', 'Soldier', 'Knight']
```

```
*-*-* Player One and Player Two Units Combat Outcome *-*-*


Seige Equipment from army 1 won
Seige Equipment from amry 1 won
Knight From army 2 won
Seige Equipment from army 1 won
Seige Equipment from amry 1 won
Knight From army 2 won
Seige Equipment from army 1 won
Seige Equipment from amry 1 won


All units of army two are dead so army one is the winner
```

5)
```
Player one your army units list is = ['Knight', 'Wizard', 'Soldier']
```

```
Player TWO your army units list is = ['Archer']
```

```
*-*-* Player One and Player Two Units Combat Outcome *-*-*


Knight from army 1 won
Knight from army 1 won
Knight from army 1 won
Knight from army 1 won
Knight from army 1 won
Knight from army 1 won
Knight from army 1 won
Knight from army 1 won
Knight from army 1 won


All units of army two are dead so army one is the winner
```

References

1) https://www.alexandriarepository.org :- To learn the basic of python.
2) https://www.w3schools.com/python :- To learn the basic syntax and semantics of python.
3) http://pythontutor.com:- To visualize code and identify the mistakes.

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