

**CSC 316 / DSC 615  
Project 1**

**Pokémon Battle System**

**Overview**

You are tasked to create a simplified Pokémon Battle System using Python. You are wandering through the forest and happen to come across a wild Bulbasaur. You want to catch it, so you choose a Pikachu! Both your Pikachu and the Bulbasaur are only know two abilities:

**Tackle**

Deal 10 damage to your opponent's hit points

**Sand Attack**

Reduce the probability of your opponents accuracy by 10

In addition you can choose to throw a pokeball to try to catch Bulbasaur

**Throw Pokeball**

Capture the Bulbasaur with 1-hp % probability.

**R1. Program must repeat the following prompt before every battle** **5 pts**

At program start, or after the completion of each battle, you must display the following prompt.

```
It's a Bulbasaur
<<press enter>>
```

```
What do you want to do?
1. Battle
2. Run away
```

```
<<input 1. or 2.>>
```

**R2. If player selects '2. Run Away' then program terminates** **5 pts**

```
Goodbye!
<<program ends>>
```

**R3. If player selects '1. Battle' then we choose Pikachu and continue the game** **5 pts**

```
Pikachu I choose you
<<press enter>>
```

**R4. After Each turn, we display the hitpoints and accuracy for each Pokémon** **5 pts**

Bulbasaur  
hp 100 acc 100  
Pikachu  
hp 100 acc 100

**R5. Bulbasaur (opponent) strikes first, and attacks with either Tackle or Sand Attack 10 pts**

50 / 50 chance of using Tackle and Sand Attack

If Tackle,

Bulbasaur uses Tackle  
<<press enter>>

Bam! (if hit)

But it missed! (if miss)

If Sand Attack,

Bulbasaur uses Sand Attack  
<<press enter>>

Swoosh! (if hit)

But it missed! (if miss)

**R6. Then it is your turn, and you must select between Tackle, Sand Attack, and Throw Pokeball 15 pts**

What to do?  
1. Tackle  
2. Sand Attack  
3. Throw Pokeball  
<<enter 1, 2, or 3>>

**R7. On Pikachu's turn you must select between Tackle, Sand Attack, or Throw Pokeball 15 pts**

If Tackle,

Pikachu uses Tackle  
<<press enter>>

Bam! (if hit)

But it missed! (if miss)

If Sand Attack,

Pikachu uses Sand Attack  
<<press enter>>

Swoosh! (if hit)

But it missed! (if miss)

If Throw Pokeball,

You threw a Pokeball  
<<press enter>>

You caught a Bulbasaur! (if catch)

But it broke free! (if no catch)

**R8. The probability of landing a Tackle or Sand attack is accuracy %.** **10 pts**

For example, if Pikachu's accuracy is 100, and if Pikachu uses Tackle, the Tackle will hit guaranteed.

If Pikachu's accuracy is 0, and if Pikachu uses Tackle, the Tackle will miss guaranteed.

If Bulbasaur's accuracy is 70, and if Bulbasaur uses Sand Attack the Sand Attack will hit with 70% probability.

**R9. The chance of catching Bulbasaur is  $(100 - \text{Bulbasaur\_hp})$  percent** **10 pts**

Bulbasaur is easier to catch if it has low hp.

For example, if Bulbasaur has 10 hp, then Throw Pokeball has a 90% chance of catching Bulbasaur.

If Bulbasaur has 80 hp, then Throw Pokeball has 20% chance of catching Bulbasaur.

If Bulbasaur has 100 hp, then Throw Pokeball cannot catch Bulbasaur.

**R10. Tackle deals 10 damage.** **5 pts**

If Pikachu uses Tackle, and if it hits, then Bulbasaur loses 10 hp.

If Bulbasaur uses Tackle, and if it hits, then Pikachu loses 10 hp.

**R11. Sand Attack reduces accuracy by 10** **5 pts**

If Pikachu uses Sand Attack, and if it hits, then Bulbasaur loses 10 accuracy.

If Bulbasaur uses Sand Attack, and if it hits, then Pikachu loses 10 accuracy.

**R12. The battle ends with one of the following conditions** **10 pts**

If Pikachu loses all hp

Pikachu fainted

If Bulbasaur loses all hp

Bulbasaur fainted

If Bulbasaur is caught

You caught a Bulbasaur!

**All input must be robust. All input prompts must repeat if given invalid input** **10 pts**

For example

What do you want to do?

1. Fight
2. Run away

**3**

Please enter 1 or 2

What do you want to do?

1. Fight
2. Run away

**I don't know**

Please enter 1 or 2

What do you want to do?

1. Fight
2. Run away

**Fight**

Please enter 1 or 2

What do you want to do?

1. Fight
  2. Run away
- 2**  
Goodbye!

### **Additional Deductions**

- |            |  |                 |
|------------|--|-----------------|
| <b>D.1</b> | <b>If program fails to run, but TA can easily fix the issue</b>    | <b>-10 pnts</b> |
| <b>D.2</b> | <b>If program fails to run, but TA cannot easily fix the issue</b> | <b>-50 pnts</b> |
| <b>D.3</b> | <b>If student forgets to write their name in the comment</b>       | <b>-10 pnts</b> |