**Worksheet Answers by Robert Myers**

# Worksheet Week 7, 02 - Guess the animal game

## Predict

Take a look at the code below. Read it carefully and explain exactly what might happen when this code is executed. Think about the possible inputs that could be entered and what might happen in each scenario. For example, if the user enters a y, what will happen? If the user enters an n, what will happen?

```
1   print("Pick either Ostrich, Lion or Whale")
2   print("I will attempt to guess your choice")
3   print("Does the animal live in the water? Y/N")
4   answer = input().lower()
5
6   if answer == "n":
7     print("Does the animal have wings? Y/N")
8     answer = input().lower()
9     if answer == "y":
10      print("It must be an Ostrich!")
11    else:
12      print("It must be a Lion!")
13  else:
14    print("It must be a Whale!")
```

Write your prediction in the space provided below:

> Line 1 will print a request to select an animal, line 2 will print "I will attempt to guess the animal", line 3 will ask if the user's animal lives in water, line 4 is where the user inputs their Y or N answer, line 5 is a nested sequence if the answer is n then line 6 will print, the user will then input either y or n in line 7 and if the answer is y then line 9 will be printed, line 10 will print if the answer to line 4 is n

and line 7 answer is n, otherwise if line 4 is y and line 7 is n then line 13 will print due to else statement.

## Run

Open and run the file with this code. Here's a copy of the program if needed.

Was your prediction correct? Did anything unexpected happen? Write down your thoughts below:

was correct.

## Investigate

| Questions/activities | Your answers |
| --- | --- |
| Enter a y for the first question.<br>• What is the output? | line 14 |
| Run the program again. Enter a 2 for the first question.<br>• What is the output? | line 14 |
| • What needs to be the input for the output to be "It must be a Whale!" | any input |

Run the program again. Enter an n for the first question.
• What is the output?

line 7

• Which line of code is executed when the condition on line 6 is True?

line 7

• Which line of code is executed when the condition on line 6 is False?

line 11

Run the program again. Enter an n for the first questions and an n for the second question.
• What is the output?

It must be a lion

• What needs to be the input for the output to be “It must be a Lion!”

line 6 needs to be answered with no and then line 9 with the same answer

Run the program again. Enter an n for the first question and a y for the second question.
• What is the output?

line 10

| | |
|---|---|
| • Which line of code is executed when the condition on line 9 is True? | line 10 |
| • Which line of code is executed when the condition on line 9 is False? | line 12 |
| • Does a user *have* to enter a **lower case** n or y for the code to execute correctly? Explain your answer. | no because lower just means it will return your input all lowercase |

## Modify

| **Modification** | **Hint** |
|---|---|
| • At line 14 enter a new line of code that outputs “Is the animal a mammal? Y/N” | |
| • At line 15 enter a new line of code that holds the user input in answer. | See line 8 for help with the code.<br><br>The final line of code should now be at line 16. |
| • Test your code. Check the input/output in the hint to see if it is working correctly. | Pick either Ostrich, Lion or Whale<br>I will attempt to guess your choice<br>Does the animal live in the water? Y/N<br>y<br>Is the animal a mammal? Y/N<br>y<br>It must be a Whale! |

• At line 16 enter a new line of code that will check if the answer to “Is it a mammal?” is equal to n

The program should output “It must be a Fish!” if the condition on line 16 is True and “It must be a Whale!” if the condition is False.
• Enter the necessary lines of code to make this happen.

See line 6 for help with the code. Remember your indents.

• Test your code. Check the input/output in the hint to see if it is working correctly.

```
Pick either Ostrich, Lion or Whale
I will attempt to guess your choice
Does the animal live in the water? Y/N
y
Is the animal a mammal? Y/N
n
It must be a fish!
```

• Test your code again. Check the input/output in the hint to see if it is working correctly.

```
Pick either Ostrich, Lion or Whale
I will attempt to guess your choice
Does the animal live in the water? Y/N
y
Is the animal a mammal? Y/N
y
It must be a Whale!
```

• Edit the instructions at the beginning of the code to reflect the addition of a fish to the animal choices.

Please enter your modified code below:

```
1   print("Pick either Ostrich, Lion, Whale or Fish")
2   print("I will attempt to guess your choice")
3   print("Does the animal live in the water? Y/N")
4   answer = input().lower()
5   if answer == "n":
6     print("Does the animal have wings? Y/N")
7     answer = input().lower()
8     if answer == "y":
```

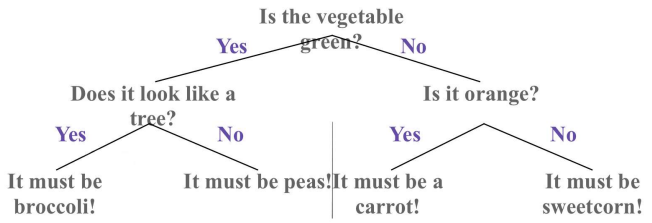
```
9           print("It must be an Ostrich!")
10       else:
11          print("It must be a Lion!")
12
13    else:
14      print("Is the animal a mammal? Y/N")
15      answer = input().lower()
16      if answer == "y":
17        print("It must be a Whale!")
18      else:
19        print("It must be a Fish!")
```

## Make

Make a ‘guess the vegetable’ game. Your game will consist of four vegetables:

- Peas
- Broccoli
- Carrot
- Sweetcorn

The vegetables need to be divided into categories. To help you plan your game, a tree diagram has been created for you below.




Here is some input and output to help your test your code:

**Example: The user has chosen carrot as their vegetable** (Y if it was successful)
**Note:** Use this example to check your program. This is the output your program should produce for the given input.

| | | |
|---|---|---|
| The user is given instructions and a question prompt. | Pick either Carrot, Broccoli, Peas or Sweetcorn<br>I will attempt to guess your choice<br>Is the vegetable green? Y/N | ok |
| The user enters their reply. | n | ok |
| The program checks the response against a condition and displays the following prompt. | Is the vegetable orange? Y/N | ok |
| The user enters their reply | y | ok |
| The program checks the response against a condition and displays the message. | It must be a Carrot! | ok |

**Example: The user has chosen peas as their vegetable** (Y if it was successful)
**Note:** Use this example to check your program. This is the output your program should produce for the given input.

| | | |
|---|---|---|
| The user is given instructions and a question prompt. | Pick either Carrot, Broccoli, Peas or Sweetcorn<br>I will attempt to guess your choice<br>Is the vegetable green? Y/N | ok |
| The user enters their reply. | y | ok |
| The program checks the response against a condition and displays the following prompt. | Does the vegetable look like a tree? Y/N | ok |
| The user enters their reply | n | ok |
| The program checks the response against a condition and displays the message. | It must be Peas! | ok |

Please enter your code below:

```
1  print("Pick either Carrot, Broccoli, Peas or Sweetcorn")
2  print("I will attempt to guess your choice")
3  print("Is the vegetable green? Y/N")
```

```
answer = input().lower()
if answer == "n":
  print("Is the vegetable orange? Y/N")
  answer = input().lower()
  if answer == "y":
    print("It must be Carrot!")
  else:
    print("It must be Sweetcorn!")

else:
  print("Does it look like a tree? Y/N")
  answer = input().lower()
  if answer == "y":
    print("It must be Broccoli!")
  else:
    print("It must be Peas!")
```

## Explorer task

- Join the animal and vegetable games together into one program. It should:
  - Give the user a list of animals and vegetables to choose from at the beginning of the game.
  - Then ask, “Is your choice an animal?”
  - Then continue through the game, asking the same questions.

```
print("Pick either Carrot, Broccoli, Peas, Sweetcorn, Lion, Ostrich, Whale or Fish")
print("I will attempt to guess your choice")
print("Is your choice a vegetable? Y/N")
answer = input().lower()
```

```
5   if answer == "y":
6       print("Is the vegetable green? Y/N")
7       green = input().lower()
8       if green == "y":
9           print("Does it look like a tree? Y/N")
10          tree = input().lower()
11          if tree == "y":
12              print("It must be Broccoli")
13          else:
14              print("It must be Peas")
15      else:
16          print("Is the vegetable orange? Y/N")
17          orange = input().lower()
18          if orange == "y":
19              print("It must be Carrot")
20          else:
21              print("It must be Sweetcorn")
22  else:
23      print("Is your animal a mammal? Y/N")
24      mammal = input().lower()
25      if mammal == "y":
26          print("Does it live in the sea? Y/N")
27          sea = input().lower()
28          if sea == "y":
29              print("It must be Whale")
30          else:
31              print("It must be Lion")
```

```
    else:
        print("Does it have wings? Y/N")
        wings = input().lower()
        if wings == "y":
            print("It must be Ostrich")
        else:
            print("It must be Fish")
```