Python Worksheet II

Part I - Input

1) Remember with the `input()` command, we can save the input into a variable like this:

```
>>> myInput = input()
```

Write a program that asks for the user's name and then greets them. The output should look similar to the following:

```
Hello. What is your name?
Carly
Hi, Carly!
```

2) Write a program that acts as a waiter at a restaurant. The program should ask the user for their name and how many people will be attending. The output should

```
Hello, welcome to Snappy Jacks. What name is your booking under?
Carly
Hi, Carly! How many people will be attending today?
4
Ok Carly, I'll see if I can find you a table for 4.
```

Part II - Lists

1) Remember we create an empty list with the square brackets '`[]`' In the python shell, create an empty list and assign it the variable **`myList`**. Use the **`append()`** command to add the numbers 1 to 10 to the list. If you `print()` the list it should look like this:

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

2) Continuing from question 1) using the **`remove()`** command, remove all the even numbers from **`myList`**. If you `print()` again, you should see this:

```
[1, 3, 5, 7, 9]
```

3) We can access elements in the list by their position or index. For example, if we want to print the 3rd element of **`myList`**, we use the command:

```
>>> print(myList[2])
5
```

Remember we start counting from 0, not 1, which is why we we use **myList[2]** to access the 3rd element. We can also assign new values to elements in the list. With the list from question 2, change the first and last elements to 0:

```
[0, 3, 5, 7, 0]
```

4) We can assign different types of things into a list. Make the following variables in the python shell

```
>>> numberOfRobots = 128
>>> robotHeight = 12.45
>>> robotClass = "TL-89"
```

What types are each of these variables? Make an empty list called **robotData** and add each of these items into the list so when we print the list we get:

```
>>> print(robotData)
['TL-89', 12.45, 128]
```

5) You're heading on a voyage across the ocean and into the jungles of the Congo! But first, you will need to pack your backpack. Write a program that asks the user to add three items to pack. Store these items in a list. Once it's finished it should print the contents of the backpack. The output should look something like this (The user's input in in black):

```
Hail adventurer! Before we set sail, you will need to pack your
backpack. What is the first item you would like to pack? Spyglass
Ok great, what next? Towel
Never leave home without a Towel hey? Great there should be enough
room for one more. Lucky bone charm
Fantastic! You have packed:
['Spyglass', 'Towel', 'Lucky bone charm']
Good luck!
```

6) Save you program from question 5 as a new file. Now modify the program to **`remove()`** the second item at the end:

```
Hail adventurer! Before we set sail, you will need to pack your
backpack. What is the first item you would like to pack? Spyglass
Ok great, what next? Towel
Never leave home without a Towel hey? Great there should be enough
room for one more. Lucky bone charm
Fantastic! You have packed:
['Spyglass', 'Towel', 'Lucky bone charm']
Oops. I don't think we have room for a Towel. I'll take that out.
You have left:
['Spyglass', 'Lucky bone charm']
```

7) Save you program from question 5 as a new file. Now modify the program to replace the second item with a map:

```
Hail adventurer! Before we set sail, you will need to pack your
backpack. What is the first item you would like to pack? Spyglass
Ok great, what next? Towel
Never leave home without a Towel hey? Great there should be enough
room for one more. Lucky bone charm
Fantastic! You have packed:
['Spyglass', 'Towel', 'Lucky bone charm']
Actually, I don't think you need a Towel. I'm going to replace it
with a map. Here is what you've packed:
['Spyglass', 'Map', 'Lucky bone charm']
```

Part III - Turtle

Description	Command	Example
Create a pen	`import turtle` `myPen = turtle.Pen()`	
Draw a line	`myPen.forward()`	`myPen.forward(100)`
Draw a circle	`myPen.circle()`	`myPen.circle(60)`
Lift up the pen, to stop drawing	`myPen.up()`	
Put pen down to draw	`myPen.down()`	
Change direction of the pen	`myPen.Left() or` `myPen.right()`	`myPen.Left(20)`
Change pen color	`myPen.color()`	`myPen.color("red")`
Change pen width	`myPen.width()`	`myPen.width(10)`

1) See if you can draw these shapes with python turtle.

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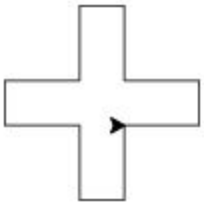
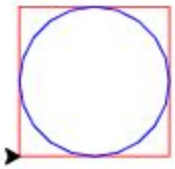
a)</td><td> 
b)</td><td> 
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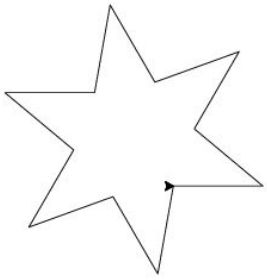
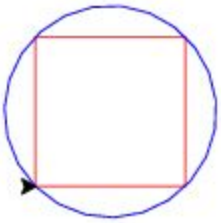
d)</td><td> 
e)</td><td> 
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