Problem Set 1

Handed out: Tuesday, October 10th, 2023

Due: Tuesday, October 17th, 2023

This problem set will introduce you to the programming environment Spyder from the Anaconda Distribution of Python, and to programming in Python, as well as to our general problem set structure. In this problem set, you will confirm your installation of Python, and write some simple programs.

Assignment:

We will be writing five programs in this problem set.

Part A:

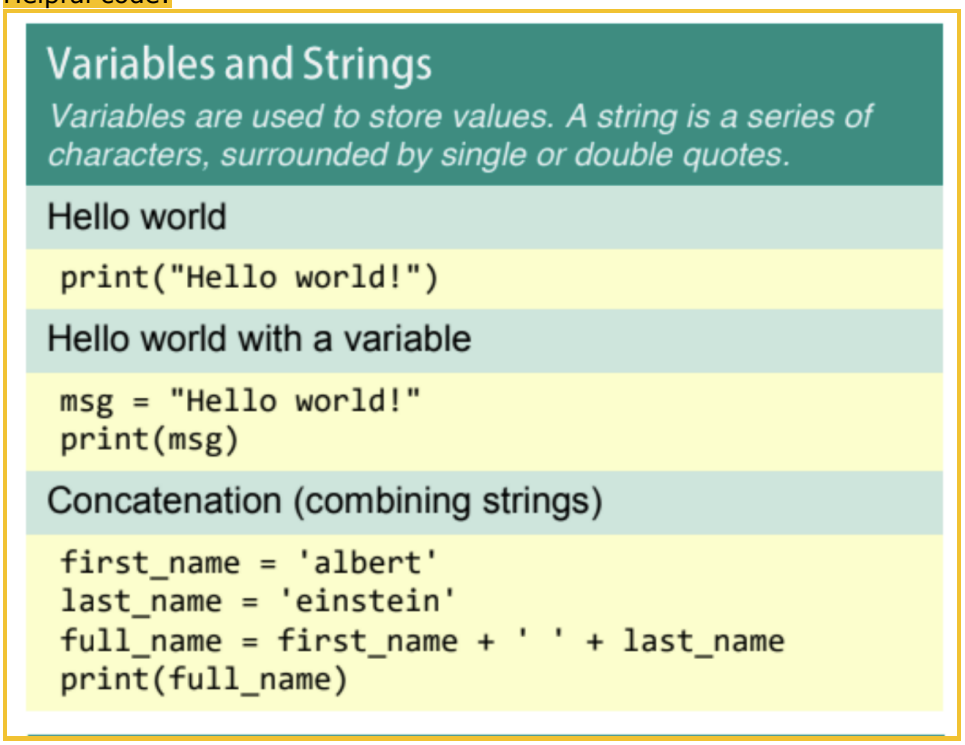
TA's, please use screenshare to help students locate Spyder on their computers, open Spyder, create a new file, and save that file.

Use Spyder to create your program, and save your code in a file named 'ps1_partA_name.py' where name is your name. If my name was Justin, I would save my file as `ps1_partA_justin.py'

Write a program that tells us a little about yourself. The program should do the following:

1. Prints out your name.
2. Prints out why you decided to take this class.
3. Prints out what you hope to learn from this class.

Helpful code:



Part B:

Use Spyder to create your program, and save your code in a file named 'ps1_partB_name.py' where name is your name.

Write a program that does the following in order:

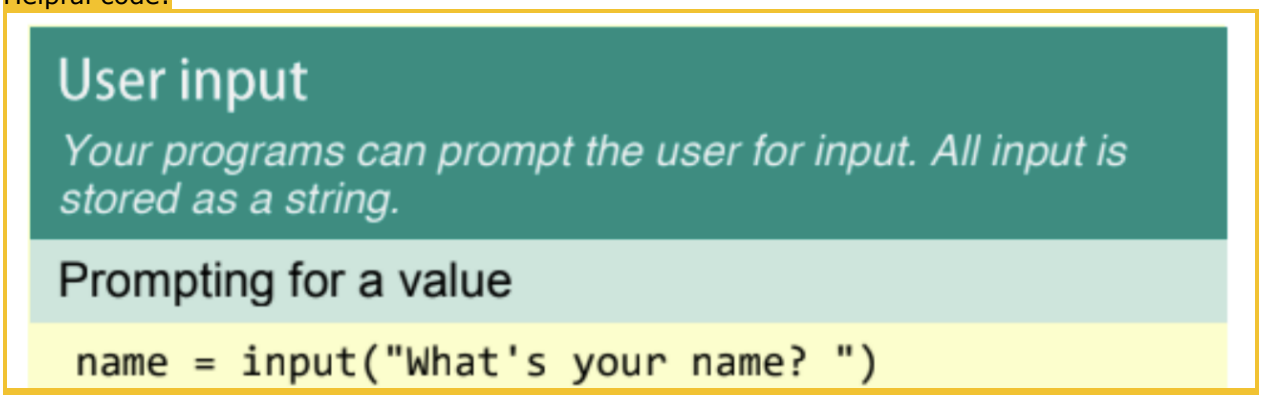
1. Asks the user to enter their name
2. Prints "Hello, {name}." where name was entered previously.

An example of an interaction with your program is shown below. The words printed in blue are ones the computer should print, based on your commands, while the words in black are an example of a user's input. The colors are simply here to help you distinguish the two components.

For example, if the user decides to enter Justin as their name, then the output should look like the following:

```
What is your name? Justin
Hello, Justin.
```

Helpful code:



Part C:

Use Spyder to create your program, and save your code in a file named 'ps1_partC_name.py' where name is your name.

Write a program that does the following in order:

1. Asks the user to enter a number "x"
2. Asks the user to enter a number "y"
3. Prints out number "x" plus "y".
4. Prints out number "x" minus "y".
5. Prints out number "x" times "y".

Assume that the user always enters a valid number.

For example, if the user decides to enter 3 for x and 2 for y, then the output should look like the following:

```
Enter number x: 3
Enter number y: 2
x+y = 5
x-y = 1
x*y = 6
```

Helpful code:

Prompting for numerical input

```
age = input("How old are you? ")
age = int(age)

pi = input("What's the value of pi? ")
pi = float(pi)
```

Part D:

Use Spyder to create your program, and save your code in a file named 'ps1_partD_name.py' where name is your name.

Write a program that does the following in order:

1. Asks the user to enter a value r.
2. Prints the area of a circle with radius r. (3.14 * r * r)
3. Prints the circumference of a circle with radius r. (3.14 * 2 * r)

Assume that the user always enters a valid number.

For example, if the user decides to enter 4 for r, then the output should look like the following:

```
Enter radius r: 4
The area of the circle is 50.24
The circumference of the circle is 25.12
```

Part E (extra credit):

Use Spyder to create your program, and save your code in a file named 'ps1_partE_name.py'

where name is your name.

Write a program that does the following in order:

1. Asks the user to enter a temperature in celsius.
2. Prints the temperature in fahrenheit ((temperature × 1.8) + 32)

Assume that the users always enters a valid number.

For example, if the user decides to enter 5 for the celsius temperature, then the output should look like the following:

```
Enter celsius temperature: 5
The fahrenheit temperature is 41
```

Grading:

Part A - 2.5 points

Part B - 2.5 points

Part C - 2.5 points

Part D - 2.5 points

Part E - 2 bonus points