**Outline**

Access the Python Development environment and continue the tutorial to gain an additional exposure to the Python programming language. Begin to develop an familiarity with intermediate programming concepts.

**Objectives**

* Use correct terminology to describe programming concepts;
* Describe the types of data that computers can process and store (e.g., numbers, text);
* Explain the difference between constants and variables used in programming;
* Use variables, expressions, and assignment statements to store and manipulate numbers and text in a program

**Materials**

* Python3 Development Environment at: //repl.it/
* Python Tutorial at: <http://www.letslearnpython.com/learn/>

**Accessing the Python3 Web IDE Environment**

Accessing the IDE

* Go to: <https://repl.it/>
* Select Python3
* Sign-up / Create an account
* Make sure you can remember your account information for the rest of the course.

Using the IDE

* Use the black area like a calculator to try simple statements or commands
* Use the white area to create programs with multiple statements

**Accessing the Tutorial**

Accessing the Tutorial

* Go to: <http://www.letslearnpython.com/learn/>
* Read up to “Lesson 3: Math”

**Level 1: Input & Logic**

1. Read through “Lesson 12: Input – What Is Input?” and “Lesson 12: Input – Example” and “Lesson 12: Input – Shortcut”.
2. Type the following code into the white area of the IDE and run the program. Explain what you see in the black area of the IDE.

print("Type your name:")

name = input()

print("Hi", name, "how are you?")

It responded with “Hi, Raaj, how are you?

1. Complete “Lesson 9: Logic – Many Choices” by typing the sample commands in the white area of the IDE.
   1. Combine the lesson code with the code from question #2 above to create a logic choice based on input read from the console.
   2. If the typed name equals your name then print out “Hello Me!”
   3. Else if the typed name equals your friend’s name then print out “Hello Friend.”
   4. Else print out “Who are you?”
   5. Provide your complete program below.

print("Type your name:")

myname = "Raaj"

myname = input()

if myname == "Raaj":

print("Hello me!")

elif myname == "Fred":

print("Hello Friend.")

else:

print("Who are you?")

**Level 2: Loops**

1. Complete “Lesson 10: Loops – What Are Loops” and “Lesson 10: Loops – Counting Loops” by typing the sample commands in the white area of the IDE.
   1. Modify the loop to start at 0 and repeat 5 times..
   2. Provide your modified code and resulting output below.

for mynum in [0, 1, 2, 3, 4, 5]:

print("Hello", mynum)

1. Create a list of the names of at least 5 of your friends and use a counting loop to print out their names as follows:.
   1. Create a list of the names of at least 5 of your friends.
   2. Identify the highest list index (i.e. Index of the last name.)
   3. Create a counting loop to loop over the list indexes
   4. Use the loop index number to print “Hello “ + name for each of your friends.
   5. Provide your modified code and resulting output below.

Friendnum [“Jeff”, “Bob”, “Al”, “John”, “Dave”]

print ("Hello", friendnum)

The highest index is 4 which is Dave.

friendnum[4]

Dave

1. Complete “Lesson 10: Loops – Conditional Loops” by typing the sample commands in the white area of the IDE.
   1. Modify the loop to stop when the count becomes greater than 5.
   2. Provide your modified code and resulting output below.

mycount = 0

while (mycount < 6):

print('The count is:', mycount)

mycount = mycount + 1

1. Create a list of the names of at least 5 of your friends and use a conditional loop to print out their names as follows:.
   1. Use your list of friends from question #2 above
   2. Create a conditional loop to loop over the list indexes
   3. Use the loop index number to print “Hello “ + name for each of your friends.
   4. Provide your modified code and resulting output below.

Friendnum [“Jeff”, “Bob”, “Al”, “John”, “Dave”]

Mycount = -1

while (mycount < 4):

mycount = mycount + 1

print("Hello", friendnum[mycount])

**Level 3: Functions**

1. Complete “Lesson 11: Functions – Functions” by typing the sample commands in the black area of the IDE.
   1. Create a list of instructions for tying your shoes..
   2. Provide your shoe tying function below.

Tying my shoes

Grab both shoe laces

Make a X with the left lace going over the right lace

Bring the left lace through the bottom whole and tighten the laces

Make two loops using the laces

Have the left lace go underneath the right lace and pull

Tying\_shoes (lace, X, tighten, loops, pull)

1. Lace means grab the laces, X means make and X, tighten means pull together, loops mean make two loops and pull means tighten your shoes.

**Level 4: Programming Challenge**

1. Create a running Python program based on specifications provided t.b.d.