**Module 5: Lab Activity – Iterative Programming**

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**Deliverables:**

* Python program solutions to the following 5 problems

**Make Sure You:**

* Add comments

# Your name

# The date

# What the program does

* Test your program
* Fix any bugs (try out the debugging techniques you read about)

**Problem 1** – Consider a program that prints “Hello World” to the screen 100 times. Use draw.io to draw the flow of execution. Then write the program. Submit both the flowchart and the code.

*#Joel Navarrete  
#9/8/2020  
#this program will print "Hello World" 100 times*for i in range(100):  
 print(**"Hello World"**)

**Problem 2** – Assume you have a list of numbers 12, 10, 32, 3, 66, 17, 42, 99, 20.

1. Write a loop that prints each of the numbers on a new line.
2. Write a loop that prints each number and its square on a new line.

*#this program lists the numbers on a new line seperate from others  
#on another new line it also gives the square of those numbers*numbers = [12, 10, 32, 3, 66, 17, 42, 99, 20]  
for i in numbers:  
 print(i)  
  
squared = [ ]  
for i in numbers:  
 squared.append(i\*i)  
 print(**"The square of {} is {}"**.format(i, squared[-1]))

**Problem 3** – Write a program that asks the user for the number of sides, the length of the side, the color of the line, and the fill color of a regular polygon. The program should draw the polygon and then fill it in.

*#Author: Joel Navarrete  
#The program should draw the polygon and then fill it in after the users inputs the size.*import turtle  
wn = turtle.Screen()  
alex = turtle.Turtle  
sides = int(input(**"Enter the number of sides: "**))  
angle = 360/ sides  
length = int(input(**"Enter the length of sides: "**))  
line\_color = input(**"Enter the color of the lines: "**)  
alex.color(line\_color)  
  
fill\_color = input(**"Enter the fill color for the polygon:"** )  
alex.fillcolor(fill\_color)  
alex.begin\_fill()  
for i in range(sides):  
 alex.forward(20)  
 alex.left(angle)  
alex.end\_fill()

**Problem 4** – Consider a program that iterates the integers from 1 to 50. For multiples of three print “Divisible by three” instead of the number and for the multiples of five print “Divisible by five”. For numbers which are multiples of both three and five print “Divisible by both”. Use draw.io to draw the flow of execution. Then write the program. Submit both the flowchart and the code.

*#author: Joel Navarrete  
#This program iterates the integers from 1 to 50   
#If integers are divisbile by 3 and 5 or seperate it will print "divisble by 3, 5, or both."*for i in range(1, 51):  
 if (i%5 == 0) and (i%3 == 0):  
 print(i, **" is divisble by 3 and 5"**)  
 elif (i%3 == 0):  
 print(i, **" is divisble by 3"**)  
 elif (i%5 == 0):  
 print(i, **" is divisble by 5"**)

**Problem 5** – Write a program to draw some kind of picture. Be creative and experiment with the turtle methods provided in [Summary of Turtle Methods](https://runestone.academy/runestone/static/thinkcspy/PythonTurtle/SummaryofTurtleMethods.html#turtle-methods).

*#author: Joel Navarrete  
#This program draws a figure with the color the users chooses  
#changing the angle changes the figure*import turtle  
  
window = turtle.Screen()  
  
turtle.color(**"pink"**)  
turtle.begin\_fill()  
  
for i in range(12):  
 turtle.forward(100)  
 turtle.right(30)  
turtle.end\_fill()  
  
window.exitonclick()