**Outline**

t.b.d.

**Objectives**

* tbd

**Materials**

* tbd

**Level 0: Teacher Demo of Sample Programs**

1. Sample program #1 is an example of a "Syntax Error". Follow the teacher demo and explain the characteristics of a syntax error. Consider the following criteria:  
   1. Did the program have an error before starting to run?  
      Yes, the program didn’t run.
   2. Did the program encounter an error before it finished running?  
      It didn’t run.
   3. Did the program do what it was supposed to do?

It didn’t run.

1. Sample program #2 is an example of a "Run-time Error". Follow the teacher demo and explain the characteristics of a run-time error. Consider the following criteria:  
   1. Did the program have an error before starting to run?  
      No, it did start to run.
   2. Did the program encounter an error before it finished running?  
      Yes, on line 17.
   3. Did the program do what it was supposed to do?

No the program was supposed to make 3 circles but because of the error it only ran 2.

1. Sample program #3 is an example of a "Logic Error". Follow the teacher demo and explain the characteristics of a logic error. Consider the following criteria:  
   1. Did the program have an error before starting to run?  
      Yes, it started running.
   2. Did the program encounter an error before it finished running?  
      There were no errors.
   3. Did the program do what it was supposed to do?

No, it gave 2 black circles. It was supposed to make 3 colourful circles.

**Level 1: Syntax Errors**

1. Research the definition of the word "Syntax". Summarize its meaning below and how it relates to computer languages and programming.

The arrangement of words and phrases to create wee-formed sentence in a language

1. Research the definition of a "Syntax Error" related to computer programming. Summarize this definition below.

A syntax error is a character or string incorrectly placed in a command or instruction that causes a failure in execution.

1. Explain why Sample Program #1 is an example of a "Syntax Error".

Sample Program number 1 is an example of a syntax error because it does not even begin.

1. Find and correct the syntax errors in Sample Program #1. Provide a listing of your corrected program below.
   * Use a "#" at the beginning of each line containing an error   
     to "Comment Out" the bad code
   * List the corrected code line underneath the commented out error line

import turtle

myPen = turtle.Turtle()

circleColors = [(196,196,0),(196,0,196),(0,196,196)]

def drawCircle(rgb) :

myPen.down(#)

myPen.color(rgb)

myPen.begin\_fill()

myPen.circle(8)

myPen.end\_fill()

myPen.up()

myPen.forward(22)

circleNumber = 0

for circleIndex in range(3) :

# drawCircle(circleColours[circleNumber])

circleNumber = circleNumber + 1

**Level 2: Run-time Errors**

1. Research the definition of a "Run-time Error" related to computer programming. Summarize this definition below.

Is a program error that occurs while the program is running. There are many types of runtime errors like syntax or logic

1. Explain why Sample Program #2 is an example of a "Run-time Error".

This is an example of a runtime error because it runs but the error shows up in the middle of it’s run

1. Find and correct the run-time errors in Sample Program #2. Provide a listing of your corrected program below.
   * Use a "#" at the beginning of each line containing an error   
     to "Comment Out" the bad code

List the corrected code line underneath the commented out error line   
import turtle

myPen = turtle.Turtle()

circleColours = [(196,196,0),(196,0,196),(0,196,196)]

def drawCircle(rgb) :

myPen.down()

myPen.color(rgb)

myPen.begin\_fill()

myPen.circle(8)

myPen.end\_fill()

myPen.up()

myPen.forward(22)

circleNumber = 1

for circleIndex in range(3) :

# drawCircle(circleColours[circleNumber])

circleNumber = circleNumber + 1

1. Explain the difference between a "syntax error" and a "run-time error".

A syntax error doesn’t begin if there is an error, a runtime error does run but stops when it encounters the error

**Level 3: Logic Errors**

1. Research the definition of a "Logic Error" related to computer programming. Summarize this definition below.

A logic Error is a mistake in the source code that results in incorrect or unexpected behavior.

1. Explain why Sample Program #3 is an example of a "Logic Error".

Sample program number 3 is an example of logic error because it did something unexpected by making the circles black.

1. Find and correct the logic errors in Sample Program #3. Provide a listing of your corrected program below.
   * Use a "#" at the beginning of each line containing an error   
     to "Comment Out" the bad code

List the corrected code line underneath the commented out error line   
import turtle

myPen = turtle.Turtle()

circleColours = [(196,196,0),(196,0,196),(0,196,196)]

def drawCircle(rgb) :

myPen.down()

myPen.color(rgb)

myPen.begin\_fill()

myPen.circle(8)

myPen.end\_fill()

myPen.up()

myPen.forward(22)

numOfCircles = 3

for circleIndex in range(3) :

circleNumber = numOfCircles - circleIndex - 1

drawCircle(circleColours[circleNumber])

1. Explain the difference between a "logic error" and a "syntax error".

A syntax error is the mistake in the language of python. A logic error

1. Explain the difference between a "logic error" and a "run-time error".

In a logic error it was unexpected that the circles turned black and finished with only two circles but in the run-time error it started on the right track before it stopped.

**Level 4: Your Sample Program**

1. Create a sample program to show the different types of programming errors. Provide your program listing below.
   * Your program must be of your own design and must be different from the sample programs provided in this module.
   * Your program must contain at least one example of each of: a syntax error, a run-time error, and a logic error.
   * Provide the corrected code in a comment underneath the error code (using a "#" at the beginning of the comment line).

import turtle

myPen = turtle.Turtle()

myPen.delay(5 # sytax error need a bracket at the end

from turtle import \*

colors = ['red', 'purple', 'blue', 'green', 'orange']# Logic error should have 'yellow'

for x in range(100):

pencolor(colors[x % 6])

width(x / 100 + 1)

forward(x)

left(50)# run time error, should be 59

**SAMPLE PROGRAM #1 - Syntax Error**

import turtle

myPen = turtle.Turtle()

circleColors = [(196,196,0),(196,0,196),(0,196,196)]

def drawCircle(rgb) :

myPen.down(

myPen.color(rgb)

myPen.begin\_fill()

myPen.circle(8)

myPen.end\_fill()

myPen.up()

myPen.forward(22)

circleNumber = 0

for circleIndex in range(3) :

drawCircle(circleColours[circleNumber])

circleNumber = circleNumber + 1

**SAMPLE PROGRAM #2 - Run-time Error**

import turtle

myPen = turtle.Turtle()

circleColours = [(196,196,0),(196,0,196),(0,196,196)]

def drawCircle(rgb) :

myPen.down()

myPen.color(rgb)

myPen.begin\_fill()

myPen.circle(8)

myPen.end\_fill()

myPen.up()

myPen.forward(22)

circleNumber = 1

for circleIndex in range(4) :

drawCircle(circleColours[circleNumber])

circleNumber = circleNumber + 1

**SAMPLE PROGRAM #3 - Logic Error**

import turtle

myPen = turtle.Turtle()

circleColours = [(196,196,0),(196,0,196),(0,196,196)]

def drawCircle(rgb) :

myPen.down()

myPen.begin\_fill()

myPen.circle(8)

myPen.end\_fill()

myPen.up()

myPen.forward(22)

numOfCircles = 3

for circleIndex in range(2) :

circleNumber = numOfCircles - circleIndex - 1

drawCircle(circleColours[circleNumber])

import turtle

myPen = turtle.Turtle()

circleColours = [(196,196,0),(196,0,196),(0,196,196)]

def drawCircle(rgb) :

myPen.down()

myPen.color(rgb)

myPen.begin\_fill()

myPen.circle(8)

myPen.end\_fill()

myPen.up()

myPen.forward(22)

numOfCircles = 3

for circleIndex in range(3) :

circleNumber = numOfCircles - circleIndex - 1

drawCircle(circleColours[circleNumber])

**Jhgdjg**

**import turtle**

**myPen = turtle.Turtle()**

**myPen.delay(5) # sytax error**

**from turtle import \***

**colors = ['red', 'purple', 'blue', 'green', 'yellow', 'orange']**

**for x in range(300): # Logic error**

**pencolor(colors[x % 6])**

**width(x / 100 + 1)**

**forward(x)**

**left(59)**