1. What is duck typing?

How does this pertain to object-oriented programming (programming with classes)?

What is the following code’s output?

Module 1:

class OrderedPair:

def \_\_init\_\_(self, x, y):

self.x = x

self.y = y

def calculate(self):

return self.x + self.y

def get\_coordinates(self):

return (self.x, self.y)

class FractionalCoordinates:

def \_\_init\_\_(self, x, y):

self.x = x

self. y = y

def calculate(self):

return (x\*2000, y\*2000)

def get\_coordinates(self):

return(self.x, self.y)

Module 2:

if \_\_name\_\_ == ‘\_\_main\_\_’:

a = OrderedPair(500, 500)

b = FractionalCoordinates(.5, .5)

c = FractionalCoordinates(.75, .75)

d = OrderedPair(1000, 1000)

list = [a, b, c, d]

for item in list:

print(item.calculate())

1. What is the “with” statement? What’s an example of its usage?

Come up with 2 examples of using a with statement

Have an error be raised in one and no error in the other.

Write the output of your example

1. What are events in tkinter?

What does the following code do?

import random

import tkinter

class App:

def \_\_init\_\_ (self):

self.\_root = tkinter.Tk()

self.\_canvas = tkinter.Canvas(master = self.\_root,

width = 500, height = 500, background = ‘#000000’)

self.\_canvas.grid(row = 0, column = 0, padx = 10, pady = 10)

self.\_previous =[]

self.\_current = ‘#000000’

self.\_canvas.bind(‘<Button-1>’, self.\_on\_left\_click)

self.\_canvas.bind(‘<Button-2>’, self.\_on\_right\_click)

def start(self):

self.\_root.mainloop()

def \_on\_left\_click(self, event):

self.\_previous.append(self.\_current)

random = ‘#’

for x in range(6):

random += random.randint(0, 9)

self.\_current = random

self.\_canvas = tkinter.Canvas(master = self.\_root,

width = 500, height = 500, background = random)

def \_on\_right\_click(self, event) if len(self.\_previous) == 0: self.\_current = ‘#000000’ else: self.\_current = self.\_previous[len(self.\_previous) -1] self.\_previous.pop() self.\_canvas = tkinter.Canvas(master = self.\_root, width = 500, height = 500, background = self.\_current)

1. What’s the difference between grid() and pack()?
2. What’s the difference between fractional coordinates and absolute coordinates?

Canvas = canvasstuff

Frac x = canvas.winfo\_width() \* .75

Frac y =canvas.winfo\_height() \* .75

X = 0

Y = 0

For i in range(500):

X+= 1

Y+= 1

Redraw canvas

From before the midterm:

1. Review try, except, else, finally statements.
2. Programming with classes. Make sure you’re able to write your own classes!