Week: 03 Date: 02/03/2022

15-110 Recitation Week 3

Reminders

- Check 2 due Monday 2/7 at Noon EDT!
- HW 1 grades are out!
- Check 1 and HW1 Revisions (+Ex revisions) due 2/8 at Noon EDT
- Quiz 1 on 2/09 during lecture
    - Small groups this weekend
        - TAs work with 2-5 students from their recitation to review content or collaboratively work on problems related to the course content. This is an excellent resource for students who want more guided study time and practice. Small group sessions take place either in person or via Zoom, and are not recorded.
        - Ask your TA for specifics!
- For recitation today:
    - There is a starter code file on the website
    - Recitation feedback form: https://forms.gle/L21iwvPZgr3BCaWZA

Overview

- Debugging
- Timed Function Practice
- Circuits and Gates

Problems

DEBUGGING

1. Rubber Duck Debugging 🦆

2. Printing and Experimenting

3. Thorough Tracing

Catch the Error:

These are also in the starter file, with some additional code to help you.

For each function, specify **the type of error** (syntax/runtime/logical), **error name,** and **what the error means.**

1)
```
def computeIntAverage(x, y, z):
     sum = x + y + z
     count = 3
     return sum // count
print(computeIntAverage(5, “6”, 7))
```

Type:	
Name:	
What it means:	

```
2) def findLineIntersect(m1, b1, m2, b2):
         x = (b2 - b1) / (m1 - m1)
         y = m1 * x + b1
         print(‘y coord’, y)
         return x
```

Type:	
Name:	
What it means:	

```
3) # leaving is a boolean that tells us if we should say hello or goodbye
   def sayHelloOrGoodbye(leaving, name):
         if leaving == True:
               return “Hello ”+ name
         else:
               return “Goodbye, ”+ name+ “, and have a great day!
```

Type:	
Name:	
What it means:	

```
4) import math

   # Don’t worry about how this function works! It just returns a boolean
   that tells us if the two values are approximately equal

   def apxEqual(x, y):
       return abs(x - y) < 1E-12

   def circleArea(x0, y0, x1, y1):
       minRad = x_1 - x0 / 2
       maxRad = y1 - y0 / 2
       area = math.pi * minRad * maxRad
       return area
```

Type:	
Name:	
What it means:	

```
5) import math
   def roundDistance(x1, y1, z1, x2, y2, z2):
         dX = x2 - x1**2
         dY = (y2 - y1) ** 2
         dZ = pow(2, (z1 - z2) )
         dist = math.ceil(dX + dY + dZ) ** 0.5
         return dist
```

Type:	
Name:	
What it means:	

TIMED FUNCTION PRACTICE

To help prepare for the upcoming quiz, we will use this as a practice for writing code with a time limit. You will have 5 minutes to write the code independently (your TAs will help time this for you). Take out a piece of paper and pen (not in Pyzo) and write the code in paper, to simulate the Quiz environment.

You're a professor trying to get through exam grading during finals week. Unfortunately, you're the only instructor and there are just too many exams to grade. You realize that you can create a function that decides each student's grade based on how many pages their exam is and the last number of their student ID.

You end up with this grading scale (the student will fail if they turn in 0 pages):

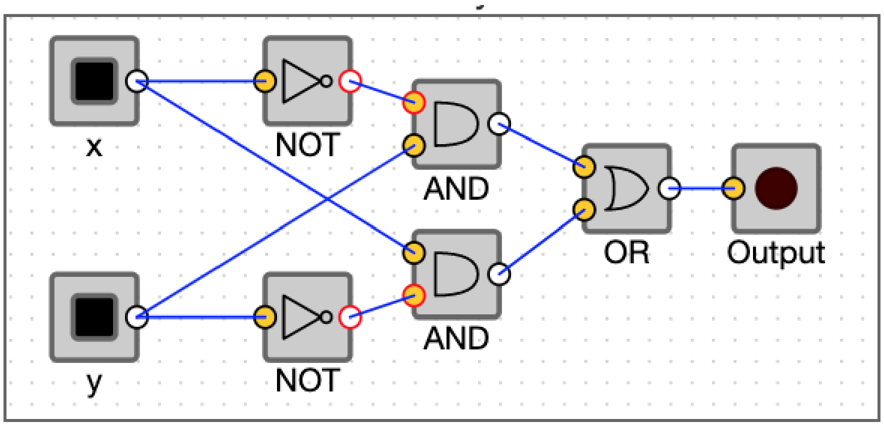
Number of Pages	**Last Digit of Student ID**	**Grade**
More than 4	Even	A
More than 4	Odd	B
4 and under	Even	C
4 and under	Odd	D
0	-	F

Write the function studentGrade(numPage, studentID) that takes in the number of pages that the exam is and the student's full ID number and implement the above grading scale.
Note: You should nest if statements within the function and return early when necessary.

Ex: `studentGrade(2, 123456) = "C"`

...write your code on the next page

CIRCUITS AND GATES



Write the equivalent Boolean expression demonstrated by the circuit:

Fill out the truth table that corresponds to the circuit and boolean expression above:

x	y	output