

# 15-110 Recitation Week 3

## Reminders

- Check 2 due Monday 9/20 at Noon EDT!
- Check 1 and HW1 Revisions due 9/21 at Noon EDT
- Quiz 1 on 9/22 during lecture
- HW 1 grades are out! The resubmission deadline is 9/21
- For recitation today:
  - There is a starter code file on the website
  - Recitation feedback form: <https://forms.gle/m1VtwJvTE6kfAXRg6>

## Overview

- Debugging
- Functions 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.

- 1) 

```
def computeIntAverage(x, y, z):  
    sum = x + y + z  
    count = 3  
    return sum // count  
print(computeIntAverage(5, "6", 7))
```
  
- 2) 

```
def findLineIntersect(m1, b1, m2, b2):  
    x = (b2 - b1) / (m1 - m2)  
    y = m1 * x + b1  
    print('y coord', y)  
    return x
```
  
- 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!
```
  
- 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 = x1 - x0 / 2  
    maxRad = y1 - y0 / 2  
    area = math.pi * minRad * maxRad  
    return area
```

```

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

```

## FUNCTIONS PRACTICE

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.

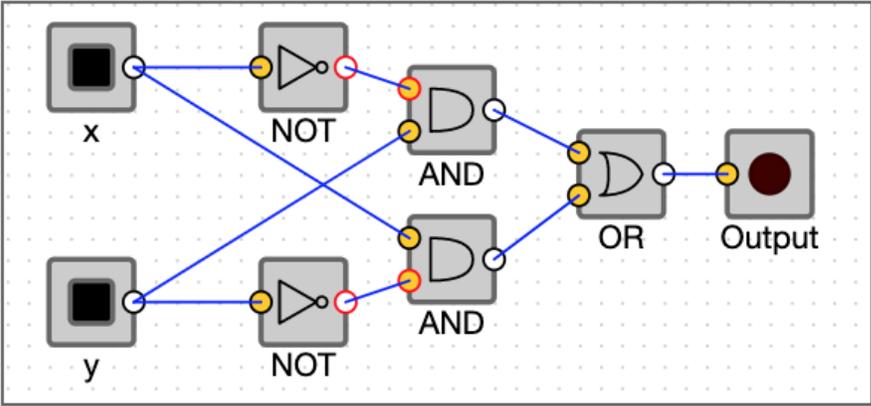
You end up with this grading scale (the student will fail if they turn in 0 pages):

| 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.

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

# 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 |
|---|---|--------|
|   |   |        |
|   |   |        |
|   |   |        |
|   |   |        |