**Name: Session:**

**Programming I**

**Lab Exercise 10.17.2024**

For each of these problems, submit your solution source code.

1. Open animation.py and run it. Notice that the red rectangle will animate from left to right. Open problem1.py and modify it to make the red rectangle move from the upper left corner to the lower right corner.
2. Open problem2.py and modify the program so the animation continually runs from upper left corner to lower right corner then back to the upper left corner.
3. Write a function

def mergeSorted(a, b)

that merges two sorted lists producing a new sorted list. Keep an index into each list, indicating how much of the list has been processed already. Each time, append the smallest unprocessed element from either list, then advance the index. For example, if list a is

1. 4 9 16

and list b is

4 7 9 9 11

the mergeSorted function returns a new list containing the values

1. 4 4 7 9 9 9 11 16
2. Write a program that reads a file containing two columns of integers with each line representing a dataset. The file contains one million data sets. The filename is numbers.dat and is located on the server. The program should print the average of each column.