Minnesota State University, Mankato
Exam 2
Total Exam Points: 100 points

Full Name: _____

1. (25pts) Write a function that is capable of taking a list and determine what values are even/odd and add them to a dictionary. The dictionary should only have two keys (Even and Odd).

   Then use the values from the dictionary and create an external file with the values as follows (numbers do not need to be sorted):

   Even: 2 2 4 .....

   Odd: 1 3 9 .....

2. (25 pts) Generate two list with 200 random numbers from the ranges 1-100 and then determine how many numbers generated are the same. Keep track of the amount of times each number appears in each list in a single dictionary.

   Display the duplicated numbers and how many times they appeared in each list. Write the results in a new file called (RESULTS4.TXT)

3. (50 pts) A Personal Fitness Tracker is a wearable devices that tracks your physical activity. One common activity that most of these devices track is the number of steps you take each day. The file steps.txt contains the number of steps a person has taken each day for a non-leap year (so February has 28 days). There are 365 lines in the file, and each line contains the number of steps taken during a day (first line is January 1st). Write a program that reads the file, then displays the average number of steps taken for each month. Output the results in a table to a new file called steps by month.txt. See the sample output below:

BONUS!

Write a recursive function that can determine if number is whit in the list.

MONTH	AVERAGE
January	5246.1
February	4851.9
March	5777.6
April	5802.1
May	4711.5
June	4792.3
July	5638.2
August	5759.6
September	6114.6
October	5411.0
November	4268.8
December	5138.1

Figure 1: Example of expected output