

Additional Practice Problems ENGR 102

Problem 1. Write a Python program that asks the user to input 5 integers, all on one line, with a single space in between. The program should check to see if any of the 5 numbers are duplicates of another (i.e. check whether any of the integers were entered more than once.) If a duplicate is found, the program should print “Duplicates”, otherwise it should print “All Unique”.

Example output for inputs **1 2 3 3 5**:
Enter five integers: **1 2 3 3 5**
Duplicates

Example output for inputs **1 2 3 4 5**:
Enter five integers: **1 2 3 4 5**
All Unique

Problem 2. Write a program that will ask the user to input two integers and calculate the sum of the integers between the inputted numbers (inclusive) that are multiples of 4. If the user enters a second integer that is smaller than the first, print a message and do no calculations. Implement a loop to compute the partial sum. Do not use lists, tuples, arrays.

Example output for inputs **2 12**:
Enter integer 1: **2**
Enter integer 2: **12**
The sum of multiples of 4 between 2 and 12 is: 24

Problem 3. Write a program that will repeatedly ask a user to enter names and ages of people, stopping when an age of 0 is entered (and not processing that person). The program should collect this information, and then output the average age, the name of the oldest person, and the name of the youngest person. You may assume no two people have the same age.

Example output (input in bold, red text):
Enter the name and age of the next person: **Ritchey 38**
Enter the name and age of the next person: **Zoe 5**
...
Enter the name and age of the next person: **Nobody 0**
The average age is 21.3
Frank is the oldest at 85
Ada is the youngest at 2

Problem 4. Write a program that prints out the sum of the even numbers between 2 to 200, inclusive. You must use a loop.

Problem 5. Write a program that asks a user for an area and prints out the radius of a circle with the same area, and the length of one side of a square with the same area. Format your output to display one decimal place.

Example output for input **5**:

Enter an area: **5**

A circle with area 5.0 has radius: 1.3

A square with area 5.0 has side length: 2.2

Problem 6. Write a Python program that allows the user to enter two (2) integers and then prints all of the values between (and including) the starting and ending integers, that are multiples of both 5 and 7. Format your output nicely with a comma and space between each number.

Example output for inputs **240** and **385**:

Enter the first integer: **240**

Enter the second integer: **385**

Multiples: 245, 280, 315, 350, 385