CISC231 Foundations of Computing II

Assignment2 (100 pts) – Repetition Structures (Loops)

Create a folder named *Yourlastname_Yourfirstname_hw2*. (**5 pts**)

Problem 1 (15 pts)

Write a class named problem1.

In main method of this class, ask the user to input a series of natural numbers and allow the user to enter 0 to indicate that the user is finished providing inputs. Calculate and **display** the sum and the average.

Problem 2 (20 pts)

Write a class named problem2.

In main method of this class, ask the user for an integer and determine whether this integer is a prime number or not.

Display true if it is prime, false otherwise.

A prime number is a number greater than 1 with only two factors – themselves and 1.

A prime number cannot be divided by any other numbers without leaving a remainder.

Problem 3 (30 pts)

Write a class named problem3

In main method of this class, ask the user for an integer and check whether this integer is a perfect number or not.

Display true if yes, false otherwise.

A perfect number, a positive integer that is equal to the sum of its proper divisors. The smallest perfect number is 6, which is the sum of 1, 2, and 3. Other perfect numbers are 28, 496, and 8,128.

1. with for loop (10 pts)
2. with while loop (10 pts)
3. with do-while, respectively (10 pts)

Problem 4 (25 pts)

Write a method named problem4.

In the main method of this class, **display** the following pattern by using nested loops.

The inner loop MUST be a for loop, the outer loop MUST be a while loop.

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Submission Instructions:

1. **Zip your folder** (*yourlastname_yourfirstname_hw2*) and submit the zipped folder on Blackboard.
2. Submit it through **Blackboard -> Course Material ->Unit 6 ->Assignment**
3. **You need to provide some comments for your codes (5 pts)**