**Lab 2 Activities**

1. Write a program that prompts the user for two integers and the prints:

a. the sum

b. the difference

c. the average

d. the product

e. the larger integer

f. the smaller integer

Note: Use the max and min functions found in the algorithm header for questions e and f.

2. Write a program that inputs a five-digit integer, separates the integer into its individual digits and prints the digits separated from one another by three spaces each. For example, if the user types 32156, the program should print:

3 2 1 5 6

3. Write a C++ program that calculates and displays the value of the current flowing through an RC circuit. The circuit consists of a battery connected in a series to a switch, a resistor and a capacitor. When the switch is closed, the current, *i*, flowing through the circuit is given by this formula:

*i = (E/R) e-t/RC*

*E* is the voltage of the battery in volts

*R* is the value of the resistor in ohms.

*C* is the value of the capacitor in farads.

*t* is the time in seconds after the switch is closed.

*E* is Euler’s number, which is 2.71828.

Using this formula, write a C++ program to determine the voltage across the capacitor. Test your program with the two data sets below:

1. Voltage = 20 volts, *R* = 10 ohms, *RC* = 0.044, *t* = 0.023 seconds
2. Voltage = 35 volts, *R* = 10 ohms, *RC* = 0.16, *t* = 0.067 seconds

4. Write a program that plays a word game with the user. The program should ask the user to enter the following:

* First name
* Last name
* Year of birth (eg. 1990)
* Name of university
* A favorite hobby
* A pet’s name

Write a program that will produce an outcome as below:

Enter first name: Kamal

Enter last name: Jan

Enter year of birth: 1990

Name of university: INU

Favorite hobby: read

Pet’s name: Chucky

"There lives a person name Kamal Jan who is currently 21 years of age. Kamal is studying at INU. It is interesting because Kamal likes to read with Chucky and they lived happily ever after!"