**Programming with C Language**

**Practical Session**

1. Write a program to input an item number, description, price of a product, quantity, and display item number, description with the total price

Total price = price of a product \* quantity

2. Write a program to an input birth year of a student and display the student is a ‘Teenager’ or ‘Not a Teenager’.

3. Display each of the following number series using 1. While 2. Do while and 3. For loops

1. 1 2 3 4 …………..100
2. 50 45 40 …………...5
3. -2 -4 -6 ……………… -20

4. Modify the program in Question 2 to display the ‘Teenager’ count of 10 students. (Use while loop)

5. Allow the user to input a series of numbers terminates when the user enters either ‘N’ or ‘n’ and display the running total (Sum of all the entered numbers). (Use do-while loop)

6. Input 10 numbers and display the total count of odd, even numbers in the entered number series. (Use for loop)

7. Declare a Single dimensional array with 10 elements. Input the values to the array and find the followings;

1. Minimum value
2. Maximum value
3. Average value
4. Reverse order of values

8. Declare two 3 x 3 square matrices and display the matrix sum.

The following illustration shows the process of calculating the matrix sum. The values are used as samples.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | 2 | 4 | + | 2 | 6 | 3 | = | 5 | 8 | 7 |
| 1 | 4 | 6 | 4 | 3 | 2 | 5 | 7 | 8 |
| 4 | 3 | 2 | 5 | 1 | 7 | 9 | 4 | 9 |

1. Write a function integerPower(base, exponent) that returns the value of baseexponent For example, integerPower( 3, 4 ) = 3 \* 3 \* 3 \* 3. Assume that exponent is a positive, nonzero integer, and base is an integer. Function integerPower should use for to control the calculation. Do not use any math library functions.
2. Write a program that inputs a series of integers and passes them one at a time to function even, which uses the remainder operator to determine if an integer is even. The function should take an integer argument and return 1 if the integer is even and 0 otherwise.
3. Implement the following integer functions:

a) Function celsius returns the Celsius equivalent of a Fahrenheit temperature.

b) Function fahrenheit returns the Fahrenheit equivalent of a Celsius temperature.

c) Use these functions to write a program that prints charts showing the Fahrenheit equivalents of all Celsius temperatures from 0 to 100 degrees, and the Celsius equivalents of all Fahrenheit temperatures from 32 to 212 degrees. Print the outputs in a neat tabular format that minimizes the number of lines of output while remaining readable.

1. Write a function that displays the smallest of three floating-point numbers