**ASSIGMENT 2 – PROGRAMMING CONCEPT**

Aim: Practising on the basics of C; using switch-case; using multiple decision structures; understanding the repitition structures.

1. Write a program that prints the powers of 7 for nonnegative numbers less than 4

You should use a repetition structure in your code.

1. Write a program that reads two integers and calculates the following arithmetic operations: addition, subtraction, multiplication, division and square root.

**HINT:** Use switch-case for selecting an operation

# Sample output;

Please enter two integers: 20 5 Please choose an operation:

Press 1 for ADDITION

Press 2 for SUBTRACTION

Press 3 for MULTIPLICATION Press 4 for DIVISION

Press 5 for SQUARE ROOT Press 6 for EXIT

# (Sample output for Subtraction)

The result is 15

**(Sample output for Division)** The result is 4

1. Write a program that does the followings using loops:
   1. Print the sum of the integers from 0 to 9

# Sample output:

Sum of the integers within the range [0 , 9] is 45.

* 1. Print all integers from 1 to 5 line by line as shown below (Each line should include the specified number printed for same times as the number itself). You must use nested loops.

# Sample output:

Numbers:

1

22

333

4444

55555

1. Write a program that reads a grade point and prints its letter grade. (Implement two different versions of your program using the followings to decide about the letter grade: switch-case, if-else.)

# Sample output:

Please enter your grade: 92 Your letter grade is A.

1. Write a program to compute the **factorial** of the given nonnegative integer.

# Sample output:

Enter a nonnegative integer: 6 6! = 720

1. Write a program that reads the grades of “10” students and prints whether the students are passed the course or not. Your program should take a grade and then tell if it is honor [100-85], satisfactory (85-60] or unsatisfactory (60-0]. It should also display the total numbers of the students in each category.

# SAMPLE OUTPUT (Bold parts are entered by user)

Please enter the grades of 10 students:

|  |  |  |
| --- | --- | --- |
| **70** |  | |
| 70 | is | satisfactory. |
| **65** |  |  |
| 65 | is | satisfactory. |
| **53** |  |  |
| 53 | is | unsatisfactory. |
| **34** |  |  |
| 34 | is | unsatisfactory. |
| **29** |  |  |
| 29 | is | unsatisfactory. |
| **90** |  |  |
| 90  **…** | is | honor grade. |

Total number of honor students: 1

Total number of satisfactory students: 2

Total number of unsatisfactory students: 3

(**HW:** Modify your answer to Question#3 such that the number of the students of the course is not known at the beginning. Assume that the user enters -1 to quit.)

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