

### Lab Exercises:

- 1) Write a program in C to reverse the digits of the following integer array of size 9.  
Initialize the input array to the following values.

Input array: 18, 523, 301, 1234, 2, 14, 108, 150, 1928

Output array: 81, 325, 103, 4321, 2, 41, 801, 51, 8291

- 2) Write a program in C to simulate the all the operations of a calculator. Given inputs A and B, find the output for A+B, A-B, A\*B and A/B.
- 3) Write a program in C to toggle the character of a given string. Example: suppose the string is "HeLLo", then the output should be "hElLO".
- 4) Write a C program to read a word of length N and produce the pattern as shown in the example. Example: Input: PCBD      Output: PCCBBBDDDD
- 5) Write a C program to read two strings S1 and S2 of same length and produce the resultant string as shown below.

S1: string      S2: length      Resultant String: slternigtgh

- 6) Write a C program to perform Matrix times vector product operation.
- 7) Write a C program to read a matrix A of size 5x5. It produces a resultant matrix B of size 5x5. It sets all the principal diagonal elements of B matrix with 0. It replaces each row elements in the B matrix in the following manner. If the element is below the principal diagonal it replaces it with the maximum value of the row in the A matrix having the same row number of B. If the element is above the principal diagonal it replaces it with the minimum value of the row in the A matrix having the same row number of B.

Example:

A

B				
0	1	1	1	1
5	0	2	2	2
15	15	0	3	3

1	2	3	4	5
5	4	3	2	4
10	3	13	14	15
11	2	11	33	44
1	12	5	4	6