

Lab 6 - In Lab Assignment

Due end of the lab session

Acknowledge your collaborators or source of solutions, if any. **Submission by the end of the LAB is required.** Please type your answers, handwritten submission will not be accepted. Do all of the following. A subset of your solutions will be graded.

1. Write two use cases (usage scenarios) of Recursion.
2. Change the following recursion function into a loop.

```
int A(int x) {  
    if (x<0){  
        return 0;  
    }  
    printf("%d\n", x);  
    return A(x-1);  
}  
  
int main(){  
    A(10);  
    return (0);  
}
```

3. Write a program that prints out the fibonacci numbers for a given n . In mathematical terms, the sequence F_n of Fibonacci numbers is defined by the recurrence relation:
$$F_n = F_{n-1} + F_{n-2}$$

The program should take n as input from the user. Please use recursion in your program.

Example:

Input: Enter the number of terms (n): 10

Output: Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34