**COA LAB 16-08-2023 Monday**

**Assignment Number :** 4 **Problem Number :** 1, 2

**Group Number :** 9 **Semester :** AUTUMN 2023

**Group Members :**

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**Question 1 : ( Sum of series of 11 + 22 + 33 + …. + nn )**

* **Invalid Input :** Any n <= 0 is Invalid
* **Base Case :** 
  + If n == 1, return 1
* **Recursion Step :**
  + Sum(n) = nn + Sum(n-1)
  + nn is computed in a separate loop

**Question 2 : ( Number of steps before converging to 1 : Collatz Conjecture )**

* **Invalid Input :** Any n <= 0 is Invalid
* **Base Case :** 
  + If n == 1, return 0 // because there is no need of any steps ahead
* **Recursion Step :**
  + If n is even, Steps(n) = 1 + Steps(n/2)
  + If n is odd, Steps(n) = 1 + Steps(3\*n+1)