Week 9- Day 1 : Coding Challenge

(Maximum marks -15)

Solve following questions with the help of recursion:

Q-1) Check if a number is Palindrome: (5 marks)

Given an integer, write a function that returns true if the given number is palindrome, else false.
For example,

Sample input:
12321

Sample output:
palindrome

eg2:

Sample input:
1451

Sample output:
not palindrome.

Q-2) Program for Sum of the digits of a given number:(5 marks)

Sample Input:
1234567
Sample output:
28

Q-3) Given a number n, find sum of first *n* natural numbers:(5 marks)

Examples :

```
Input : 5
Output : 15
Explanation : 1 + 2 + 3 + 4 + 5 = 15

Input : 7
Output : 28
Explanation : 1 + 2 + 3 + 4 + 5 + 6 + 7 = 28
```

Q-4) [Bonus Question] Given two number x and y, find product using recursion.
(3 extra marks)

Examples :

```
Input : x = 5, y = 2
Output : 10

Input : x = 100, y = 5
Output : 500
```

(**Hint**: x * y = x+x+x+...y times…+x)

Marks distribution:
Question 1,2 and 3 carry 5 marks each.

Question 4 is a bonus question, that means if you leave that question you dont lose a mark, but if you solve it, you can get an extra 3 marks.

Practise questions carry no marks, they are just for revision of concepts.

Remark: maximum marks you can get is 15, bonus question helps only of you are not able to solve another question.

Practise questions (zero marks):

Q - 1) Rat in a Maze

https://www.geeksforgeeks.org/rat-in-a-maze-backtracking-2/

Q-2) Given a *3 x n* board, find the number of ways to fill it with *2 x 1* dominoes.

https://www.geeksforgeeks.org/tiling-with-dominoes/

Q-3) Find factorial of a number.

Q-4) Find nth number in fibonacci series.