PES UNIVERSITY

(Established under Karnataka Act No. 16 of 2013)
100 Feet Ring Road, BSK III Stage, Bengaluru-560 085
Department of Computer Science and Engineering

UE20CS207 - DATA STRUCTURES AND ITS APPLICATIONS LABORATORY

WEEK – 1
30th August to 4th September 2021

RECURSION(5 + 5 MARKS)
(i) Write a recursive function to search for a substring within a given string. Return True if substring is found, else return false
Ex: input :
string : This is our first DS Lab
substring : DS
output : True

string : This is our first DS Lab
substring : DBMS
output : False

(ii) Write a recursive function to generate all permutations of a given text
Ex : input : ABC, output : ABC,ACB, BAC, BCA, CAB, CBA

STRUCTURE AND DYNAMIC MEMORY ALLOCATION (10 MARKS)
1). Write a C program to create a record for few students containing the student details as SRN, Name, semester, marks for 5 subjects. Each subject should have a code associated with it
a. Compute the class average marks in a particular subject.
b. Sort the students based on SRN.

ASSIGNMENT : (10 MARKS)

1. Perform Tower of Hanoi using recursion
2. Write a C program to create a record for IPL Players containing the details as player name, team name, details of the matches played. Match details should keep track of 14 matches, with player playing the match or not and runs scored if he has played a particular match.
a. Display the player details who scored maximum runs in a particular match.
b. Also compute the number of matches played by each player.