GOVERNMENT POLYTECHNIC, AHEMEDABAD

COMPUTER DEPARTMENT

Subject: ACP (3320702) **Sem : 2nd(CE)**

Lab Plan – 1 Write, Test, Debug & Execute minimum five programs on one dimensional array for operation like display, sort, insert and delete

1. Write a program to get and print one dimensional Array.
2. Write a program to delete element in one dimensional array at given index.
3. Write a program to search the element in one dimensional array using given index
4. Write a program to merge two single dimensional Array and print the Array
5. Write a program to sort one dimensional array in ascending order/ descending order.

Lab Plan – 2Write, Test, Debug & Execute minimum five programs on two dimensional array for operation like display, sort, insert and delete

6. Write a program to get and print two dimensional array.
7. Write a program to transpose the 2- dimensional array.
8. Write a program to add two 2-dimensional arrays.
9. Write a program to multiply two 2-dimensional arrays.
10. Write a program to search element in 2-dimensional array and print it index in row and column wise.

Lab Plan –3 Write, Test, Debug & Execute programs on string operations using string handling functions.

11. Write programs using String functions strlen(), strcpy(), strcmp() and strcat(), strrev().
12. Write programs using String functions strlwr(),strupr(), strchr() and strstr().

Lab Plan –4 Write, Test, Debug & Execute programs on string operations

13. Write a program to get and print string of characters.
14. Write a program to find the length of a given string.
15. Write a program to get reverse string and to check whether it is palindrome string or not.
16. Write a program to copy given string in another string.
17. Write a program to compare two given strings entered by user.
18. Write a program to concatenate two given strings entered by user.

Lab Plan –5 Write, Test, Debug & Execute four programs using pointers

19. Write a program to add two elements through its address stored in pointers.
20. Write a program to demonstrate pointer and print the value using pointer.
21. Write a program to swap values using pointers
22. Write a program to access array elements using pointers

Lab Plan –6 Write, test, debug and execute programs using array of Pointers and pointers of pointers.

23. Write a program to demonstrate array of pointers.
24. Write a program to demonstrate pointer of pointers.
25. Write a program to arrange given five words into alphabetic order.
26. Write a program to read and print matrix of size **mxn.** Create matrix dynamically and use pointers.

Lab Plan –7 Write, Test, Debug and Execute programs common math and other functions like sqrt(), pow(), ceil(), round(), sin(), cos(), tan(), div(), abs() etc.

27. Write programs using common math functions like sqrt(), pow(), ceil(), round(), sin(), cos(), tan(), div(), abs().

Lab Plan –8 Write, Test, Debug and Execute programs using functions

28. Write a program to add two elements entered by user using function
    I. No arguments and No return Values
    II. No arguments and return Values
    III. arguments and No return Values
    IV. arguments and return Values
29. Write a program to swap two values entered by user using function
    I. Call by Value
    II. Call by Reference

Lab Plan –9 Write, Test, Debug and Execute programs using recursive functions

30. Write a program to find factorial of given number using recursion.
31. Write a program to find the value of ${}^{n}C_{r}$. Where ${}^{n}C_{r}$= n! / (n-r)! * r!
32. Write a program to generate Fibonacci series using recursion.

Lab Plan –10 Write, Test, Debug and Execute programs for implementing Pre-processor Directives such as constants and Macros

33. Write a program to demonstrate #define macro substitution.
34. Write a program to demonstrate predefined macros by ANSI C.
35. Write a program to check whether macro is defined or not using #if, #ifdef, #ifndef.
36. Write a program that accepts a string and counts number of alphabets, digits, spaces and special symbols. (use ctype.h header file)

Lab Plan –11 Write, Test, Debug and Execute programs with various features of Structures

37. Write a program to insert student's basic details using structure and print the same.
38. Write a program to access student's basic details using pointer of structure and print the same.
39. Write a program to insert five students basic details using array of structure and print the same.
40. Write a C program to enter basic salary of an employee and calculate gross salary according to given conditions:
    Basic Salary <= 10000 : HRA = 20%, DA = 80%
    Basic Salary is between 10001 to 20000 : HRA = 25%, DA = 90%
    Basic Salary >= 20001 : HRA = 30%, DA = 95%

Lab Plan –12 Write, Test, Debug and Execute programs using Union and pointer of Union

41. Write a program to insert student's basic details using union and print the same.
42. Write a program to access student's basic details using pointer of union and print the same.

Lab Plan –13 Write, Test, Debug and Execute programs using elementary read/write file operations

43. Write a program to read the file ABC and print it in console.
44. Write a program to create file ABC and insert record of student information entered by console.
45. Write a program to read file ABC and copy it to new file DEF.
46. Write a program to append the content in given file ABC.

Lab Plan –14 Write, Test, Debug and Execute programs using fprintf(), fscanf(), getc(), putc(), fgetc(), fputc(), fseek(), feof() functions

47. Write, programs to copy content of one file to another file using getc(), putc() functions.
48. Write, programs to copy content of one file to another file using fprintf(), fscanf() functions
49. Write, programs to manipulate file using rewind(), fseek() and ftell() functions.