Everest Engineering College

Sanepa-2, Lalitpur

Subject: Programming in C

Date of Distribution: . . . . . .
Date of submission: . . . . . .

Lab 6

Title: Array

Objective:

- To be familiar with 1-D and 2-D array

Theory:

- Definition of array, importance of array, Limitation of array
- Types of arrays (1-D and 2-D) its declaration and initialization

Lab Exercises:(Please code yourself and show the output to the instructor)

1-D Array

1. Write a Program to read n elements in array and display them in reverse order.
2. WAP to read n numbers in an array and find the sum of even numbers and odd numbers and count them also.
   Now,
   - *Sum of all numbers*
   - *Find the sum of odd numbers only*
   - *Find the sum of even numbers only*
3. Write a program to read n number from keyboard and find the smallest and largest number using array.
   (Write a C program using array to find largest and smallest number from the list of 100 given
   numbers).
4. WAP to check whether the given number is present in an array or not and if present find its position.
   (Write a program to search an element in one-dimensional array containing five integer elements)
5. WAP to input n number in an array and sort them in **Ascending** order.
   - *WAP to input n number in an array and sort them in **Descending** order.*
   - *WAP to read marks of n students and print the marks of top five.*

(Write a program to read n numbers and find third largest element among n numbers.)

2-D array

6. Write a program to read matrix of order m*n from user and multiply each element of matrix by 3.
7. WAP to input m*n order matrix and find the sum of all elements.
   Now similarly, perform the following operations:
   a) Sum of even elements
   b) Sum of odd elements
   c) Sum of diagonal elements (Main diagonal)
   d) Sum of diagonal elements from Right
   e) Sum of each row
   f) Sum of each column
   g) Sum of particular row
   h) Sum of particular column

   *(Perform above operations for 3*3 matrix)*
8. WAP to input m*n order matrix and find its transpose
   *(Perform similar operations for 3*4 matrix)*
9. WAP to input m*n order matrix and convert it to the upper triangular matrix.
   (Perform similar operation for lower triangular matrix)
10. Write a program to enter the matrix of size 3 x 2 and generate new matrix after replacing all even elements by 0.
11. Write a program to add two 3X3 matrix. Display the sum stored in third matrix
    (Perform similar operation for matrix subtraction)
    (Write a program to add two matrices of size 2 X 3)
12. WAP to read m*n order matrix and find the largest element among them.
    (Perform similar operation to find smallest element)
13. WAP to read two m*n matrix and multiply them if possible.
14. WAP to test whether given two matrix are equal or not.
15. Write a program that asks a user for a number and find outs if the number is present in the array of size m*n.