Lab instructions

Week 08

Introduction to Programming
ECS 102, 2018-19 Semester II

IISER Bhopal

use_array.c

(a) Define two two-dimensional matrices A and B. Compute

1. $A + B$
2. $A - B$

(b) Define two matrices of $m \times n$ and $n \times p$ dimensions.

$$A = \begin{bmatrix} a_{11} & \cdots & a_{1n} \\ \cdots & \cdots & \cdots \\ a_{m1} & \cdots & a_{mn} \end{bmatrix} \qquad B = \begin{bmatrix} b_{11} & \cdots & b_{1p} \\ \cdots & \cdots & \cdots \\ a_{n1} & \cdots & a_{np} \end{bmatrix}.$$

The product of the matrices A and B are given by $C = A * B$, where

$$C_{ij} = \sum_{k=1}^{n} a_{ik} b_{kj} .$$

Write a program to implement the **matrix multiplication**.

sorting.c

Write a program to sort a list of names in alphabetic order.

Hints: Use two nested *for* loops and *strcmp* function.

pass_array.c

Write a function *sort* that takes inputs as an array of integers and the length of the array. The function should sort the array. In the main program, print the array before and after the sorting.

Hint: The return type of the *sort* function should be *void.* It means that sorting will be done in the input array that will alter the array in the main function.

use_recursion.c

Using recursive function, do the following.

(a) Factorial

(b) Fibonacci series

(c) Palindrome, a string reads the same backwards as forwards