

Department of Computer Science and Engineering  
Bangladesh University of Engineering and Technology  
CSE 105 : Structured Programming Language

**Assignment 1:** are two vectors orthogonal?

Consider 2 three-dimensional vectors  $X$  and  $Y$  whose components are specified by the user and stored in 1D arrays. Write the C code that calculates if the two vectors are orthogonal.

**Assignment 2:** reversing an array

Consider an array  $X$  (type float) of length  $n$ . Write the C code that prints the array  $Y$ , which is  $X$  in reverse order.

**Assignment 3:** minimum and position

Consider an array  $X$  of length  $n$  randomly initialized. Write a program that returns the position and value of the minimum.

**Assignment 4:** matrix product

Write the C code that computes the product of two  $3 \times 3$  matrices. The code must print the result on the screen.

**Assignment 5:** concatenation of two tables

Consider  $X$  and  $Y$ , two sorted arrays of integers. Write a C code that concatenates the two tables into one table  $Z$  (sorted) which contains the elements of  $X$  and  $Y$ .

**Assignment 6 :** Implement string library

Implement all the following string library functions. You can only declare array. Use pointer to pass array to function, access the array.

1. Strcpy (copy)
2. Strcat (concatenation)
3. Strcmp (comparison)
4. Strstr (find substring)
5. Strlen (length)