Topics:
Functions, Array and Pointers

A3.1
Read two integers (say, x and y) from the user and print the value of x/y. What happens when y is given as 0?

A3.2
Read Integer N and print the First 10 Powers (i.e. N, N^2, N^3, N^4, …)
HInt: do this using function and loop

A3.3
Take two arrays of integers. Both of them are of equal sizes. Print the elements that are common to both arrays.

A3.4
Take 15 positive integers from the user as input in an array. Then calculate the following in a single program

a. Sum of the elements
b. Mean of the elements
c. Max and Min of the elements
d. Median of the elements
e. Standard deviation of the elements

A3.5
Declare a character array of size 20. Then take an input string from the user into that array (assume input string size is less than 20). Then do the following

a. Reverse print that string
b. Print the length of the string (count of the characters)
c. Remove all the vowels (if any) from the string

A3.6
Create a program to print the n^{th} fibonacci number using the following two approaches

a. Using loop
b. Using recursion

A3.7
Take input a person's name (including space) as a string (character array) and print the abbreviated version for the same. E.g. “Soumadip Biswas” should become “S. Biswas”; “Shrikant Kumar Arya” will become “S. K. Arya”, etc. You can assume the input name will contain less than 100 characters.

A3.8

Write functions to do the following

a. Calculate the area of an right angle triangle, given the length of the base and height
b. Calculate the area of a parallelogram, given the length of the two sides
c. Calculate the area of a circle, given the radius
d. Calculate the sum of natural numbers from 1 to N (N is given as input)
e. Calculate the sum of natural numbers form M to N (M, N given as input, 0 < M < N)

A3.9

Implement linear search. You take an array of 20 integers. Then ask the user to give an input key to find in the array. Print whether the input key is present or not.

A3.10

Start with a string with spaces (at least 10 words). Print the word by word reverse version of the sentence. I.e. for the sentence “a quick brown fox jumped over", you will print “over jumped fox brown quick a”.