



University of Central Punjab

(Incorporated by Ordinance No. XXIV of 2002 promulgated by Government of the Punjab)
FACULTY OF INFORMATION TECHNOLOGY

Programming Fundamentals

Assignment 01

Instructions

Deadline: April 12, 2020, 11:59:59 pm

- Strictly avoid copying from others
- Put all *.cpp files and word document (required in Q.3) into a folder and compress it
- Rename compressed folder with your Registration No.
- Send only *.cpp files of code
- No late submission in any case will be accepted

Question No. 01

Take an array of type integer with 50 elements. Populate this array with random function but each value should be between -1000 to +1000. Now, ask user to enter a number to check whether this no. exists in array or not? You have to search a no. using *Binary search algorithm*.

Note: Binary search algorithm requires an array to be sorted. So, you can use any sorting algorithm to sort array before your start searching.

Sample output:

After populating with random function:

0	1	2		48	49
-845	124	-55		997	105

After Sorting:

0	1	2		48	49
-845	-55	105		124	997

Please enter a value to be searched: 124

Output: 124 found at index no. 48.

Question No. 02

Write a C++ program which reads all contents of a text file and replaces all blank spaces with a special character entered by the user. You also have to Print total no. of spaces replaced and total no. characters which are not replaced in file (non space characters).

Sample output:

Please enter an alternative character for space: @	
Input.txt	Output.txt
I am studying BSCS at University of Central Punjab.	I@am@studying@BSCS@at@University@of@central@punjab

Question No. 03

Write a C++ program which reads contents of a text file and rewrite them into the same file after applying some Encryption on text. You have to define your own encryption algorithm. If file is already encrypted, Your program should be able to Decrypt it to its original content. Use two user-defined functions for encryption and Decryption. Two sample encryption algorithm are given below.

Note: Please clearly define your algorithm with an example in separate word document(.docx) file while submitting your assignment.

Sample Algorithm 1:

Replace each character in text file with its ASCII value.

File.txt - <i>Before Encryption</i>	File.txt - <i>After Encryption</i>
UNIVERSITY	8578738669828373

Sample Algorithm 2:

Replace a with z, b with y, c with x, d with w ... , y with b, and z with a.

File.txt - <i>Before Encryption</i>	File.txt - <i>After Encryption</i>
Your name please?	Bifi mznv kovziv?