

Assignment 0

PF Revision

I want Your effort, I don't need perfect code

Topics: Character/integer array, Functions, Pointers(1D & 2D dynamic arrays), Regrow and shrink and File handling

Instructions:

- Create a main function to check all
 - **Deadline** 24 Oct 2021, Sunday night till 11.50 PM.
 - Lab will also based on this assignment 0
 - This assignment will be counted in class activity
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- Q1. Create a function named **Compare** that accepts two integer array and their size, it prints/display the elements common in both the arrays. Assume size of both array 10.
- Q2. Write a C++ program that create two function as shown below:
- a. **bool IsPrime(int)** check whether number is prime or not?
 - b. **void PrintPrimes(int [], int)** using IsPrime() function this prints all prime numbers in integer array.
- Q3. Write a C++ program that takes input in a char array from user and implement following functions.
- a. **Int Length(char []):** Find the length of character array(not size)
 - b. **Bool Compare(char src[], char dest[]):**
 - c. **Void ConvertUpperCase(char []):** Convert all characters into uppercase
 - d. **Int FindFrequency(char [], char):** Finds frequency(number of occurrence) of given character in array
 - e. **Int CountWords(char []):** Count number of words in string. Please take care of more than one space, for example : "Hi this is UCP" has only 4 words, but there are more than one space between **this** and **is**.
 - f. **Bool FindWord(char src [], char word []):** it find word in src string. If found, will return true.
- Q4. Create a C++ program that perform following operations. Use file **Data.txt** as shown below, first number is size of file.
- a. **Void ReadFile(ifstream & read, int array[], int size):** Read data in array.
 - b. Modify task in Q2, and now change **PrintPrimes()** function so it read data from file(don't use array) and print all prime numbers using **IsPrime()**.
 - c. **Void CreateEven(ifstream & read):** takes data form data.txt and create another file named as even.txt. It simply stores all even numbers in newly create file from data.txt.
- Note: passing ifstream variable in function means, file is opened in main function.
- Data.txt:** 10 12 34 56 67 23 11 33 53 9 10

Q5. Create a C++ program that perform following operations. Use file **Words.txt** as shown below, first number is size of file.

- Int Length(ifstream &):** Find the length of string present in file.
- Void ConvertUpperCase(fstream &):** Convert all characters into uppercase in file.
- Int FindFrequency(ifstream &, char):** Finds frequency(number of occurrence) of given character in array
- Int CountWords(ifstream &):** Count number of words in string. Please take care of more than one space, for example : "Hi this is UCP" has only 4 words, but there are more than one space between **this** and **is**.
- Bool FindWord(ifstream &, char word []):** it find word in src string. If found, will return true.

Words.txt: Hello I am a Programming Teacher and teach a core programming course here in UCP.

Q6. A Technology competition is going to be held in UCP on 15 Dec 2021. For that, different teams(one per university) will be participating. There will be multiple competitions; each competition has 10 points. The Winning team will be one who will get maximum numbers in total. UCP needs a software for this and to create this software implement the following functions.

Note: You are given a sample table , two files University.txt and score.txt are created in the end, have a look.

- void ReadScore(const char* filename, int**& Score, int& r, int& c);**
- void ReadUniNames(const char* filename, char**& UNames, int& rows);**
- char* FindWinner(char** Unames, int rows, int** Score, int r, int c, int& MaxScore);**
- char* FindRunner(char** Unames, int rows, int** Score, int r, int c, int &Scorevalue);**

	10	10	10	10	
	Competition 1	Competition 2	Competition 3	Competition 4	Total
UCP	10	10	3	8	31
UMT	8	7	5	9	29
UOL	3	10	4	7	24
FAST	10	8	4	6	28
LUMS	4	6	2	5	17
NED	7	1	7	4	19
UET	1	3	1	10	15
COMSATS	5	10	6	7	28

University.txt	Score.txt
8	8 4
UCP	10 10 3 8
UMT	8 7 5 9

UOL	3 10 4 7
FAST	10 8 4 6
LUMS	4 6 2 5
NED	7 1 7 4
UET	1 3 1 10
COMSTATS	5 10 6 7

Q7. Read the file in an array. **Regrow or shrink** the array according to the following menu and print values on screen.

Press 1 to add values

Press 2 to delete values

Press 3 Exit

show the user above the menu and print the array again and again.

Values.txt: 7 3 45 65 7 89 908 10