**CPRO Assignment-4**

**Question 1)**

**Code file:-** a4q1.c

**Input format:-**

Enter first 4 integers signifying real part , imaginary part of complex no 1 . Then real and imaginary part of complex no 2..

Then it gives a option from choosing between 4 options 1 for addition 2 for subtraction 3 for multiplication 4 for exit ….

Enter the given integer ..

**Output format:-**

The code gives output for option you choose in format a+bi..

**Explanation:-**

Since we were required to do this question by structs I made a struct of complex number having real and imaginary parts of complex no .. Then I wrote functions of addition subtraction and multiplication of complex numbers …

Then in main function I first took input of 2 complex and saved them . Then I made a user defined program to implement 4 things :-

1. Addition
2. Subtraction
3. Multiplication
4. Exiting the program..

Then various function were implemented and answers were obtained …

**Question 2)**

**Code file:-** a4q2.c

**Input format:-**

Enter a integer which signifies the number of students..

Then enter the appropriate information for these n students ..

Then for part c of question an email is inputted by the user ..

**Output format:-**

First it outputs the name of all students having age 19 (if there are any). If there is no student , no student having age 19 is displayed ..

Second it outputs the name of all students whose email address start with T or I or I or t .. If there are no students , no students have email id which start with T,I,t or i is printed …

Third the code outputs the details of the email if the same email exists otherwise it outputs no student with this email exists.

**Explanation:-**

First I made a struct known as info which stores email,name,age,roll no,hostel address of a student .. Then to accommodate more than 20 students. I first took input from user of how many students are there . Then I made a array having datatype of struct info and I took input of these n students and stored them in array…

Then to implement part a of ques , since I have how many students are there , I traversed the loop for n times and put a if condition to check if age of any student is equal to 19 and if it was true I printed their name . If no student have age 19 I just printed No one has age 19..

Then to implement part b of ques , I traverse the loop for n times and put a condition if the starting word of email is T or I or i or t and if it is true I print the name of the student . If no student is found . it prints no student is found with given email constraints…

Then to implement part c of ques , I take the input of email to be found ,traverse the loop and use strcmp function to check if the same email checks. If it is found I print all the other details , else no student with this email is printed….

**Question 3)**

**Code file:-** a4q3.c

**Text file:-**  Sample.txt

**Input format:-**

No input in the terminal..

**Output format:-**

No output in the terminal..

**Explanation:-**

In this question first I opened the sample file in r+ mode . I started reading the content character by character and as soon as I read the first character I go into while loop with flag=1 and capitalize it if it is small and do flag=0 as I have done the first character of the word then to capitalize the last word I first check for blank space or \n and whenever it comes I put flag=1 and go back 2 spaces by using fseek function and use fgetc and get the character . if the character obtained needs to be capitalized it will do it else it will just move the cursor by forward by 1 byte ..

This is done again and again till we reach the end of the file and for the last character we do it again outside the while loop …

For capitalizing we first read the character , if the ascii value of character is in 97-122 we subtract 32 from it and use fseek to go back 1 byte and use fputc function to put the file character in the text file….

**Question 4)**

**Code file:-** a4q4.c

**Text file:-**  Assignment1.txt,Assignment2.txt,Assignment3.txt

**Output Text file:-**  Assignment4.txt

**Input format:-**

No input in the terminal..

**Output format:-**

No output in the terminal..

**Explanation:-**

In this question I assume there are 3 different files assignment 1,2,3 and I finally combine them in a single file with email roll no and marks of all 3 assignments..

For above implementation I am making a struct having email,roll no,marks1,marks 2,marks 3 then I read assignment 1 and store the whole information in struct ..

Then I read assignment 2 and find the roll no and store marks 2 ..

Similarly I do it for assignment 3 and store marks 3.

Then I make a new text file Assignment 4 and write all the data in the file (email,roll no ,marks1 , marks2 ,marks3) student by student in the file assignment 4.