UNIVERSITY OF CENTRAL PUNJAB, LAHORE

Mid-Term Fall 2021

Course Title: Programming Fundamentals	**Time:** 90 minutes
Course Instructor:	**Program Name:** BS(CS), BS(SE)
Semester: Fall 2021	**Date:** 13-Dec-2021

Total marks: 40 marks   **Obtained Marks:** _____

Question 1: You have been hired as an intern in the HR department of UCP, Lahore. You have been given a task by the HR manager to analyze the employee covid vaccination data. You have been given a file certificates.txt, read data from this file in order to complete the given tasks. **Vaccine_Certificate** (1 means submitted, 0 means not submitted). **[15 marks]**

a) Perform the given tasks by using functions (make as many functions as possible)

b) Extract employees that have not submitted their vaccination certificate. Write such employees data in a new file nonvaccinated.txt

c) According to WHO, people with age greater than 40 are more at risk of getting hospitalized if not vaccinated. Extract the data of employees with age greater than 40 and show this data on console.

NOTE: Column1 represents **Employee_name, Column2: Employee_age, Column3: Employee_id, Column4: Employee_Status , Column5: Vaccine_Certificate, Column6: Vaccine_Name, Column7: Number of Doses**

File Name: certificates.txt

waleed	29	0012	Regular	1	pfizer	2
haider	50	0030	Contract	0	Nill	0
Zunair	30	0128	Contract	1	moderna	2
Amna	28	0111	Regular	0	Nill	0
Ayesha	55	0200	Contract	0	Nill	0
Zunain	30	2065	Contract	1	pfizer	2
shazia	28	0251	Regular	1	pakvac	1
Mobeen	45	2032	Contract	0	Nill	0

Console output:

Haider	50	0030	Contract	0	Nill	0
Ayesha	55	0200	Contract	0	Nill	0
Mobeen	45	2032	Contract	0	Nill	0

Nonvaccinated.txt

Haider	50	0030	Contract	0	Nill	0
Amna	28	0111	Regular	0	Nill	0
Ayesha	55	0200	Contract	0	Nill	0
Mobeen	45	2032	Contract	0	Nill	0

Question 2: Case study   [15 marks]

UCP is growing day by day. So, the administration of UCP has decided to build their own pharmacy which will assist the staff and students. This pharmacy will have a desktop-based software which can be used by both customers and pharmacists. Data will be accessed and updated through files and pharmacist can add, delete, search, update medical item's detail into the system. For a while just imagine they have hired you to provide prototypes of all the required functions in order to successfully implement this task.

NOTE: No code is required, you only need to provide prototypes of the required functions.

Question 3: Write missing line of code for the following program. [10 marks]

```
1    #include<iostream>
2    using namespace std;
3    _____
4    int main()
5    {
6        char str[20] = {'i','m','r','a','n','\0'};
7        cout << "Original NAME : " << str << endl;
8        convertOpposite(____);
9        cout << "Coverted NAME : " << str << endl;
10       return 0;
11   }
12   void convertOpposite(char str___)
13   {
14       for (int i = 0; _____; i++)
15       {
16           if (str[i] >= 'a' ___ str[i] <= 'z')
17               str[i] = str[i] - 32;
18           else if (str[i] >= 'A' ___ str[i] <= 'Z')
19               str[i] = str[i] + 32;
20       }
21   }
```

Line Number	Missing Code [Write your answers on answer sheets]
3	
8	
12	
14	
16	
18	

Sample Output:
Original NAME : imRan
Coverted NAME : IMrAN