



University of Central Punjab

Faculty of Information Technology

Programming Fundamentals (PF)
Final Term Exam Lab – spring 2020

Total Marks: 60

Time Allowed: 2.5 hours (2 hrs and 30 mins)

Instructions:

1. Total number of questions given are 4.
2. Attempt all questions.
3. Submit the .cpp files on your respective Ms Teams.
4. Make sure to add necessary check in the code
5. Make functions to get full marks. One function shall only perform one task.

Q1: Write a C++ function based program that reads the name of person from file “input.txt” and return the count of total name end with a letter input by user. **(15 Marks)**

Note: Maximum length of a name is 100 character.

Input.txt

```
Ali Ahmed
Adeez
Arslan Moiz
Nabeel Shaukat Khan
Zubair Qayyum
Rameez
```

Sample:

C:\WINDOWS\system32\cmd.exe

```
Enter the letter for which you want to get count
Z
Count = 3
Press any key to continue . . .
```

Q2: In the current situation of COVID-19 government of Pakistan hired you for the analysis of some stats regarding COVID-19 in Pakistan. You have been provided by data of COVID-19 of different areas of Pakistan includes. **(15 Marks)**

- a) punjab.txt
- b) bloch.txt
- c) gilgit.txt
- d) khyber.txt
- e) sindh.txt

These files include the details regarding COVID-19 patients. Format of one file shown below the format of the rest of the files are same.

File Format

“punjab.txt”

Number of patients = 78000

Number of recovered patients = 29000

Number of deaths = 2000

Number of tastes per/day = 20000

Number of patients on ventilators = 250

Number of total ventilators = 1000

Remaining of ICU bed = 2500

Write a C++ function based program to calculate following stats.

1. Total number of patients in Pakistan
2. Total number of recovered patients in Pakistan
3. Total number of deaths in Pakistan
4. Province running maximum number of test per day
5. Total number of ventilators in Pakistan

Sample Output:

```
Total Number of Patient in Pakistan= 176780
Total Number of Recoverd Patient in Pakistan= 60600
Total Number of Deaths in Pakistan= 10000
Max Test by Province in Pakistan= 20000
Total Numbers of Ventilator in Pakistan= 5000
Press any key to continue . . .
```

Q3: Write a C++ program that reads in a set of positive integers from file “input.txt” (one integer per row) representing test score for a class, and writes the outputs how many times a particular number appears in the list in “output.txt”. The numbers must be output in increasing order. The input data ends with -99. **(15 Marks)**

Note: You are not allowed to declare an extra size of memory

File Format

"input.txt"	"output.txt"
55	53 1
80	55 2
78	65 1
92	78 3
95	80 1
55	85 2
78	92 3
53	95 4
92	
65	
78	
95	
85	
92	
85	
95	
95	
-99	

Q4: You have been provided with a text file **"data.txt"** in which first element represents the total no of rows in 2d array and then data of each row is shown below. The size of columns are unknown. Your task is to populate that data in 2d dynamic array and display it with the help of functions. After that, remove the duplicate data from each row and display updated 2D array on console. **(15 Marks)**

Note: You are not allowed to declare an extra size of memory

Data.txt

6

A A C D

A F G F G

B B C C

T G H J T H

B B B B B B B B B B B B B B B B B B B B

T T T I K L M N O

Sample Output:

A C D

A F G

B C

T G H J

B

T I K L M N O

Press any key to continue . . .