Name: **CP Lab - 3** Duration: **3 Hrs** Date: **7 Dec, 2022**   Maximum Marks: **20**

INSTRUCTIONS:

1. Please carefully read all assignment problems and write the required programs in C language.
2. All **PROBLEMS** are **COMPULSORY**.
3. **You should submit the following**
    ● **Five C files -** Name the file as follows:
        ○ **Program1_S2022xxxxx.c**
        ○ **Program2_S2022xxxxx.c**
        ○ **Program3_S2022xxxxx.c**
        ○ **Program4_S2022xxxxx.c**
        ○ **Program5_S2022xxxxx.c**
    ● **Five text files** containing output of running the programs
        ○ **Output1_S2022xxxxx.txt**
        ○ **Output2_S2022xxxxx.txt**
        ○ **Output3_S2022xxxxx.txt**
        ○ **Output4_S2022xxxxx.txt**
        ○ **Output5_S2022xxxxx.txt**
4. Replace the **"S2022xxxxx"** in the filenames with your full roll number.
5. **DO NOT zip**. Upload the files directly to your submission in the common Google classroom.
6. Don't share or copy the codes. If malpractice is found, you will be awarded **Zero**.
    If you do not follow the above-mentioned instructions, a strict penalty would be imposed

<u>ASSIGNMENT PROBLEMS</u>

1. Read a character from the keyboard and check whether it is a vowel or a consonant.   **[2 marks]**

2. Take the marks from the keyboard. Based on the marks, display the grade as follows: **[4 marks]**
    Marks 91 – 100   Excellent
    Marks 81 – 90   Good
    Marks 71 – 80   Above Average
    Marks 61 – 70   Average
    Marks 51 – 60   Below Good
    Marks 41 – 50   Poor

3. Take three inputs - a, b, and c from the keyboard and find the value of

$(a^{bc} + b^{ac} + C^{ab})^2$.   **[4 marks]**

4. Read the marks of 3 subjects from the user. Calculate the total and average marks of 3 subjects. Use switch case to display the grade as given in the table. **[4 marks]**

Average Marks	Grade
91-100	O
75 - 90	E
55-74	A
45-54	B
41-44	C
<=40	F

5. Write a program to compute base taxi fare based on the following chart, after computing it, add 10% of the base fare as a service charge in order to obtain the total fare. Finally, print the total fare, including the base fare and service charges.Total number of Kilometers traveled will be input by the user as a floating point number.   **[6 marks]**

   ▪ First 0 -10 KM: Rs. 120/-
   ▪ Next 5 KM: Rs. 10 per KM
   ▪ Next 5 KM: Rs. 8 per KM
   ▪ Above 20 KM: Rs. 6 per KM

Test case:
Input: 50.5
Output: 432.3