C++ Lab Sample Exercises:

1.   Write a C++ program that will display the calculator menu. The program will prompt the user to choose the operation choice (from 1 to 5). Then it asks the user to input two integer vales for the calculation. See the sample below.
MENU 1. Add 2. Subtract 3. Multiply 4. Divide 5. Modulus
Enter your choice: 1
 Enter your two numbers: 12 15 Result: 27

2.   Write a C++ program to find those numbers which are divisible by 8 and multiple of 5, between 1000 and 2000 (both included)

3. Write function that take a string then reverse it.

 Sample String: "1234abcd" Expected Output: "dcba4321

4."Write a C++ program to guess a number between 1 to 9. Note : User is prompted to enter a guess. If the user guesses wrong then the prompt appears again until the guess is correct, on successful guess, user will get a "Well guessed!" message, and the program will exit.

5. Write a C++ program to construct the following pattern, using a nested for loop.
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* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*

6. Write a C++ program that accepts a word from the user and reverse it. (should not use any functions)

7. Write a C++ program which takes two digits m (row) and n (column) as input and generates a two-dimensional array. The element value in the i-th row and j-th column of the array should be i*j. Note :
i = 0,1.., m-1
j = 0,1, n-1.

Test Data : Rows = 3, Columns = 4
Expected Result : [[0, 0, 0, 0], [0, 1, 2, 3], [0, 2, 4, 6]]

8. Write a C++ program that accepts a string and calculate the number of digits and letters.

Sample Data : SRMIST 2022

Expected Output :
Letters 6
Digits 4

9.Write a C++ program to check the validity of password input by users.
Validation :

- At least 1 letter between [a-z] and 1 letter between [A-Z].
- At least 1 number between [0-9].
- At least 1 character from [$#@].
- Minimum length 6 characters.
- Maximum length 16 characters.

Sample output

Input your password srmist@2017

Not a Valid Password

Input your password Srmist@2022

Valid Password

10.Write a C++ program to find numbers between 100 and 400 (both included) where each digit of a number is an even number. The numbers obtained should be printed in a comma-separated sequence.

11. Write a C++ program to convert month name to a number of days.

12.Write a C++ program to sum of two given integers. However, if the sum is between 105 to 200 it will return 200.

13. Write a C++ program to construct the following pattern, using a nested loop number.
Expected Output:
999999999
88888888
7777777
666666

55555
4444
333
22
1