C++

Phase - 5

Functional Programs

1. Create a Calculator in C++ by using all types of user defined functions. User can perform all types of basic arithmetic operations until he/she wants.

2. Develop a solution for Akshay by which he can retrieve factorial of all numbers between given range of two numbers using a C++ user defined function (UDF).

3. Kevin has two plain floors within different bowls containig one coin in each bowl. He bet his friend to transfer that coins in either bowls within 5 minutes. Help him by providing a C++ solution using UDF.

4. Design a C++ UDF which producing cubes of all elements of provided array in form of another array. Then, find average value of that new array. Based on that average value decide that array's kind:

- If $22 \leqslant average \leqslant 35$, then an array is "TIGHTER"
- If $35 < average \leqslant 50$, then an array is "BALANCED"
- If $average > 50$, then an array is "TOXIC"
- If $average < 22$, then an array is "LOOSER"

5. A scientist wants to create a sientific calculator which only contains functionalities like:

- maximum number from 3 numbers
- square of a given number
- square root of a given number
- components of a given number

Design a C++ system to help this scientist by using UDFs.

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6. A Reality show on TV organizes “Fastest-fingers Fast” round for entering in a Game. In this round participant has to find reverse of a given number as soon as possible to win this round. Design a C++ UDF for that.

7. Ajay has to find Fibonacci Series upto given number to successfully pass in Math’s examination. Help him by designing a UDF in C++.

8. Design a C++ UDF which converts given seconds into time in format of HH:MM:SS. Also create another UDF which converts given time into total seconds. End user have choice to perform either operations whenever he/she wants.

9. A Supreme Court wants a system which automatically figure out difference of two given time whether it is in seconds or any other format. Develop a solution in C++ using UDF.

10. A bomb is planted at Suratgarh Railway Station. It can be defused by entering any number which is itself an Armstrong number. Design a C++ UDF which figures out if a given number is Armstrong or not.

11. Declare a result of the survey that tells us which country have largest Army strength, US, China or India. Design a C++ UDF to announce the result of this survey to the public.

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12. Two buses(Bus B1 & Bus B2) head forwards from Mumbai to Kolkata. Both of them have to cover total distance of 1933 KM. Bus B1 reached on destination with total time of 40 Hr & Bus B2 takes total time of 46 Hr. Find out velocity of both buses using a C++ UDF.

13. Develop a C++ solution for Maths students to solve all types Geometry problems such like:

- Area of Circle
- Perimeter of Circle
- Area of Square
- Area of Rectangle
- Area of Triangle
- Area of Sphere

14. A window on a side wall have a dimension of 10×4 feet. Kaveri wants to apply curtains on that window such that a window will perfectly coverd from all sides with extra 2 feet. Design a C++ UDF with figures out if a given dimensions of curtains satisfies mentioned criteria or not.

15. Determine how many phrases(of 350×90 px dimensions) are perfectly arranged in an A4 size Canvas with distance of 8 px between all phrases. Develop a C++ UDF to count total number of phrases arranged in an A4 size Canvas.