Aror University of Art, Architecture, Design & Heritage Sukkur.

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Department of Artificial Intelligence and Multimedia Gaming

Fundamentals of Programming (Fall-2023)

LAB No. 10

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Objective of Lab No. 10:
After performing lab 8, students will be able to:
- Return arrays with functions
- Write Overloaded functions
- Call functions by value and by reference
- Write Recursive functions and call them

Lab Exercises:

1. **Define a function in C++ to calculate the sum of numbers from 1 to n using recursion.**

2. **Define a function in C++ to print even or odd numbers in a given range using recursion.**

3. **Define a function to calculate the power of any number using recursion.**

4. **Define a function which uses recursion to generate the first n terms of the Fibonacci series.**

5. **Define overloaded functions named area, first function should take length and width as its parameter while other function should take length as a parameter only, considering it as a square.**

6. **Define overloaded functions named print_student_data, one function should only take an array of student names and print it on the console, other function should take two arrays: one for student names and other for student ids and print them on console side by side, third function should take three parameters, an array for student ids, an array for student names, and an array for their semester marks and print them on console side by side.**

7. Define a function named Make_zero, which takes an integer parameter by reference, and assigns it with a value zero.

8. Define a function which takes an integer array as a parameter and returns an array containing multiples of 5 from the parameter array.