

CS3201: OBJECT ORIENTED PROGRAMMING LABORATORY

Topic: Function Templates, Class templates, Unary Operator Overload, Revision

Lab: 06

Date: 03/05/2024

SPOT QUESTIONS

1. Develop a program to perform string operations using a class called "StringManipulator." Define the StringManipulator class to handle basic string operations such as concatenation, substring extraction, and string comparison. Implement member functions to perform the following operations:
 1. `concatenate()`: Takes two strings as parameters and concatenates them.
 2. `extractSubstring()`: Takes a string and two indices as parameters and extracts the substring between the specified indices.
 3. `compareStrings()`: Takes two strings as parameters and compares them lexicographically, returning an integer value indicating their relationship:
 - If the first string is less than the second, return -1.
 - If the strings are equal, return 0.
 - If the first string is greater than the second, return 1.

In your main function, ask the user to input two strings and select an operation to perform from a menu. Then, call the corresponding member function of the StringManipulator class to perform the selected operation and display the result.

2. Create a class called Student with data members name, credits, marks, and grades of three subjects. Implement member functions to input and display details of 'n' students. Also, implement a member function to calculate and display the total marks and CGPA of the student. Use function templates to find the highest mark among the three subjects. At the end, display names of the student and their GPA in tabular form.