

LAB # 06 TASKS – OOP LAB – BCS-2F – SPRING 2025

TASK # 01

You are required to implement a simple message handling system using object-oriented programming in C++.

Task Breakdown:

1. **Create a Message class**
 - It should have a private instance variable text of type string to store the message content.
 - Implement a method toString() that returns the message text.
 - Provide a setter method to modify the text value.
2. **Create an SMS class** that inherits from Message
 - It should have an additional instance variable recipientContactNo to store the recipient's phone number.
 - Implement appropriate accessor and mutator methods.
 - Override the toString() method to return a concatenated string containing the recipient's contact number and the message text.
3. **Create an Email class** that inherits from Message
 - It should have additional instance variables: sender, receiver, and subject.
 - Implement appropriate accessor and mutator methods.
 - Override the toString() method to return a concatenated string containing sender, receiver, subject, and the message text.
4. **Implement Keyword Search Function**
 - Define a function:
 - bool ContainsKeyword(const Message& messageObject, const string& keyword);
 - This function should return true if the text of the Message object contains the given keyword, otherwise return false.
5. **Implement Message Encoding**
 - Define a function to encode a given message using the following scheme:
 - Each character should be replaced by the next character in the alphabet (e.g., 'A' → 'B', 'b' → 'c', 'Z' → 'A', 'z' → 'a').
 - Example: If the message is "This is Java", the encoded message should be "Uijt jt Kbwb".
6. **Test the Implementation**
 - In the main() function, create sample objects of SMS and Email, assign values, and test the functionalities including keyword search and encoding.