**COMSATS UNIVERSITY OF ISLAMABAD,**

**ATTOCK CAMPUS**

**LAB TERMINAL**

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**QUESTION NO 01:**

**Brief of the project**

The provided code appears to be part of a Windows Forms application named `ProjectCompiler`. The application seems designed to take a code input (possibly a programming language or a subset of one) and tokenize it. Tokenization involves categorizing different parts of the code into distinct classes such as identifiers, symbols, reversed words, variables, numbers, pointers, and potential errors.

Namespaces and Class Definition:

Several namespaces are imported for different functionalities, including Windows Forms for GUI elements.

The Form1 class represents the main form of the application.

Inner Classes:

Symbols: Represents the symbols with their names.

MemorySaver: Represents variables and their values.

MemoryCalculating: Represents memory-related calculations.

Global Variables:

Various lists (iList, sList, rList, oList, etc.) to store identifiers, symbols, reversed words, and other related data.

f: An integer flag.

error: A string to store error messages.

Initialization:

Form1\_Load: Sets the initial size of the form and initializes lists for identifiers, symbols, and reversed words.

Token Creation Functions:

createIdentifiers, createSymbols, and createReversedWords: Populate lists with predefined identifiers, symbols, and reversed words.

createMemoryLabels: Dynamically creates and displays memory labels on the form.

printErrors: Displays error messages on the form.

Button Click Event (button1\_Click):

Splits the input code from textBox1 into tokens.

Loops through each token and identifies its type (identifier, symbol, reversed word, etc.).

Based on the type, creates a label dynamically and adds it to a flow layout panel (flowLayoutPanel1) to display the token and its category.

If the token doesn't match any predefined categories, it's labeled as an error.

Note:

The code heavily uses the Windows Forms framework to dynamically create and manage GUI elements based on the input code. The main functionality revolves around parsing the code into tokens and displaying their categoriesThis application seems to be an initial step towards creating a more advanced compiler or code analysis tool, where you can input code and get a categorized breakdown of its components.