COMSATS University Islamabad (CUI) Attock Campus

**C**

**Final Term**

**MUHAMMAD YAQOO CIIT/FA21-BCS-044/ATK**

**Submitted To: Dr. Bilal Haider  
subject: CC**

**Question1:**

Class Diagram:

+------------------+ +---------------------+

| Scanner | | Parser |

+------------------+ +---------------------+

| - components | | - syntaxTree |

| + Initialize() | | + Parse(tokens) |

| + Dispose() | | + GenerateTree() |

+------------------+ +---------------------+

| |

v v

+--------------------+ +------------------------+

| SemanticAnalyzer | | CodeGenerator |

+--------------------+ +------------------------+

| - symbolTable | | + GenerateCode() |

| + Analyze(tree) | | + OptimizeCode() |

+--------------------+ +------------------------+

|

v

+------------------+

| SymbolTable |

+------------------+

| - entries |

| + AddEntry() |

| + Lookup() |

+------------------+

+---------------------------+

| User Input |

+---------------------------+

|

v

+-----------------------------+

| Mini Compiler (Phases) |

| - Lexical Analysis |

| - Syntax Analysis |

| - Semantic Analysis |

| - Code Generation |

+-----------------------------+

|

v

+-------------------+

| Optimized Output |