



### **Group Members**

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**Submitted To:** Sir Bilal Haider Bukhari

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## **Lab Terminal**

## **Question No5:**

what challenges your faces during the project:

Implementing lexical and semantic analysis for a compiler in C# poses various challenges, including the intricate nature of language specifications, complexities in designing regular expressions and finite automata for token recognition, and the need for a robust symbol table considering scoping rules and variable lifetimes. Type checking and detection of semantic errors demand a deep understanding of language semantics. The implementation of optimization strategies, error handling mechanisms, and recovery strategies requires careful consideration. Designing an intermediate code representation that balances optimization gains with target language suitability is challenging, as is the task of developing a user-friendly interface if part of the project. Comprehensive documentation and thorough test case development are time-consuming but crucial for ensuring the correctness and performance of the compiler. Effective project management and adaptability to unexpected challenges further contribute to the complexity of the compiler construction process.