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CC LAB TERMINAL

Q5:- what challenges your faces during the project ?

Ans:-The challenges we faced during the project were:-

Designing the Abstract Syntax Tree (AST):

Creating a well-structured AST that accurately represents the grammar of the programming language can be challenging.

Lexical Analysis and Tokenization:

Implementing a robust lexical analyzer to break down the source code into tokens might involve dealing with irregularities and edge cases.

Syntax Parsing:

Designing and implementing a parser to analyze the syntax of the language and generate a valid AST can be challenging, especially for complex grammars.

Error Handling:

Developing a comprehensive error-handling mechanism to provide meaningful error messages to users can be demanding.

Code Generation:

Generating efficient and correct code from the AST can be a complex task, especially when dealing with optimizations and target-specific code generation.

Optimizations:

Implementing optimization techniques to improve the performance of the generated code can be challenging, requiring a deep understanding of compiler optimizations.

Debugging and Testing:

Debugging a compiler can be challenging due to the layers of abstraction involved. Developing effective testing strategies, including unit tests and integration tests, is crucial.

Documentation:

Maintaining clear and comprehensive documentation for the compiler, including the language specification, can be time-consuming but is essential for users and future developers.

Compatibility and Portability:

Ensuring that the compiler works correctly on various platforms and with different input programs can be challenging for achieving broad compatibility.

Learning Curve:

If the team is not familiar with compiler construction, there might be a learning curve to understand the principles and best practices in building compilers.

Project Scope Management:

Managing the scope of the project to avoid feature creep and focusing on essential functionalities can be challenging.