COMSATS UNIVERSITY ISLAMABAD, ATTOCK CAMPUS

DEPARTMENT OF COMPUTER SCIENCE

LAB TERMINAL

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Subject   **:** Compiler Construction

Section   **:** BCS 7"A"

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Question No # 5

Problems Facing During Project?

Answer:

Challenges:

Ambiguity in error messages: Error messages that are unclear or ambiguous can make debugging challenging.

Handling multiple errors efficiently: When multiple errors occur, managing and presenting them in a way that aids understanding can be complex.

Detecting and reporting semantic errors: Identifying and properly communicating errors related to the meaning of the code can be difficult.

Strategies:

Provide detailed and clear error messages: Clearly communicate the nature of errors, including location and context, to assist developers in troubleshooting.

Implement graceful error recovery mechanisms: Design the system to recover gracefully from errors when possible, allowing continued execution or providing options for resolution.

Focus on user-friendly error output: Consider the end-users of error messages. Craft messages in a user-friendly manner that helps developers understand the issue and its resolution.

Integration of Compiler Phases:

Challenges:

- Efficient data flow between phases.
- Consistency in code representation.
- Handling changes in one phase affecting others.

Strategies:

- Use standardized data structures for code representation.
- Define well-defined interfaces between phases.
- Rigorously test interfaces to ensure seamless integration.