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**COMSATS University Islamabad (CUI)**

**Lab Terminal**

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Here are five optimization examples for the Mini-C Compiler project:

**Constant Folding**: Simplify constant expressions at compile time. For example, replace 2 + 3 with 5 during compilation.

**Dead Code Elimination**: Remove code that does not affect the program's output. For instance, if a variable is assigned a value but never used, the assignment can be removed.

**Loop Unrolling**: Reduce the overhead of loop control by duplicating the loop body multiple times. This can improve performance for small loops.

**Common Subexpression Elimination**: Identify and eliminate duplicate expressions that compute the same value. For example, if a = b + c is computed twice, store the result in a temporary variable and reuse it.

**Inline Expansion**: Replace function calls with the body of the function to eliminate the overhead of the call. This is particularly effective for small, frequently called functions.

These optimizations can help improve the performance and efficiency of the compiled code. If you need more details or specific implementation examples, feel free to ask!