**CSE2002**

**Theory of Computation and Compiler Design**

**J-Component**

Designing a mini-compiler for C-language

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**Abstract and introduction:**

Compiler: A program that converts instructions into a machine-code or lower-level form so that they can be read and executed by a computer.

In this project we will attempt to create a simple mini-version of a C compiler. The compiler that we create would check an input program for the following rules:

1. Data types: Integers, strings and characters
2. Arithmetic expressions:
   1. Arithmetic operators (+, -, \*, /, %)
   2. Uniray operator
   3. Paranthesis
   4. Relational expressions (>, <, >=, <=, ==, !=)
3. Statements:
   1. Declarations
   2. Initialisations
   3. If-else without nesting
   4. Switch statements without nesting
   5. While/for statements
4. Input/output statements

The compiler would read the input program and based on the above specifications it would check for errors. For this we would require error handling library, resources libraries, the main compiler code and an input program. If the program that is input is correct according to the rules mentioned above, then the compiler will generate machine code and display it on the screen.