



Universidad Politécnica de Durango

Software Engineering BIS

Units I, II & III Final Project

Professor: MC Christian Chavarría Student: _____
Class: Compilers & Interpreters Date: _____
Term: Jan-Apr 2024 Group: _____

Instructions

During the course, you are required to undertake the development of a comprehensive project, with each phase corresponding to the evaluation of an academic unit. The recommended programming languages for implementation are C++ or Python.

Problem:

Develop a basic programming language that encompasses the following structures:

1. Comments (one line and multi-line)
2. Declaration of variables with their respective data types (allowing initialization)
3. Arithmetic, relational, and logical operations
4. Simple conditionals (if)
5. Multiple conditionals (switch)
6. Cyclic structures (do, while, for)
7. Functions

Project Delivery Phases:

Phase 1: Lexical Analyzer (Unit I)

- Finite automaton (33%)
- State transition table (33%)
- Functional source code of the lexical analyzer (34%)

Phase 2: Syntactic (predictive method) and Semantic Analyzer (Unit II)

- Context-free grammars (33%)
- Transition matrices (33%)
- Functional source code of syntax and semantics (34%)

Phase 3: Code Generation (Unit III)

- Must allow generating code in Python or C++ (33%)
- Alternatively, run the program as an interpreter by default (33%)
- Documentation (34%)