CS 335: Compiler Design Course Project
Ada Version 3
Group 12

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1 Aim of the project

To build a compiler for Ada Programming Language supporting basic arithmetic and relational operations, conditional statements, iterative statements, procedures, functions, object-oriented programming features like classes with inheritance and polymorphism. Error handling and type checking are also to be handled.

2 What has been achieved

We have implemented the following features of Ada language using PLY (Python-Lex-Yacc)

- basic data types
- arithmetic and relational operators
- if-then-else statements
- iterative statements (for and while loops)
- one dimensional and multi-dimensional arrays
- procedures, recursive procedures(self and mutual), nested procedures
  - Call by value
  - Call by reference.
- Simple Classes (i.e. packages) with procedures (Nesting in packages is not handled)
- error handling and type checking
- Printing outputs as integers and characters.
- Generation of 3 address code and corresponding SPIM code (Standard short circuiting approach has been implemented using back-patching for 3-address code generation)

3 What has not been achieved

- Case conditional statements
- Object oriented features like polymorphism, inheritance etc
- Access types
- Abstract types, interfaces and over-riding

Contributions

All the group members have contributed equally (25% each) to the project.