

JCP (Java Compiler in Python) Compiler

CS335 Project Demo

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April, 2017

1 Implementations

- Three Address Code Generation
- Machine Code Generation

Three Address Code Generation

- The AST generated code is parsed through to generate Three Address Code (TAC).
- A class is defined for every unique TAC quadruple.
- Objects and arrays are allocated on the stack, while native types like int and float are allocated on the stack.

Machine Code Generation

- x86 machine code is generated along with the TAC.
- We implemented Jump logic in the TAC itself, so the machine code generation was more of a translation of TAC to machine code.
- For efficient register allocation, we tried to implement the Register Map Table but couldn't complete in time.

- Native Data types (integer, boolean, character, strings), Arrays.
- Variables and Expressions.
- Classes.
- Control structures.
 - While loops
 - If, If-else
 - For
 - Switch Case
 - DoWhile
- Functions.
- I/O functions, File I/O.