COMPILER DESIGN

Our Team

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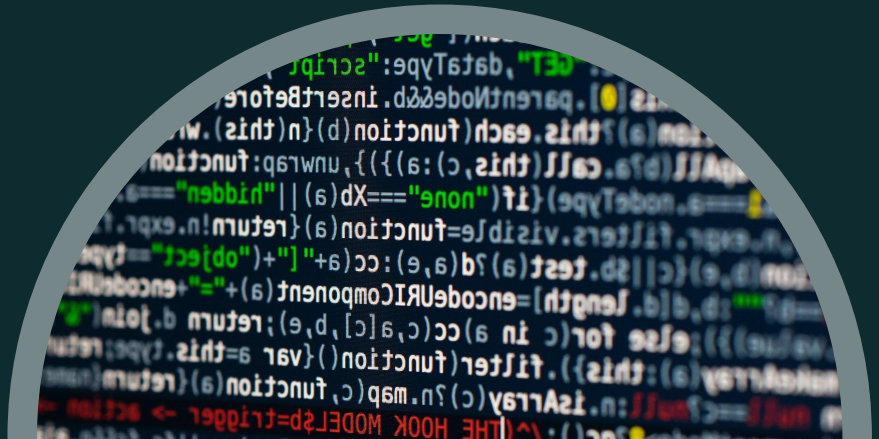
Python Compiler



- Constructs handled:
  - If-else
  - while
- Optimizations:
  - Packing temporaries
  - Constant propagation
- Used C language till optimisation of ICG
- Used python for target code generation

Hypothetical Machine Model

1) **Load/Store Operations:**
   ST <loc>, R
   LD R, <loc>
2) **Move Operations:**
   MOV R_d, #<num>
3) **Arithmetic Operations:**
   <ADD/SUB/MUL/DIV> R_d, R_1, R_2
4) **Compare Operations:**
   CMP<cond> R_d, R_1, R_2

   (<cond>: **E** for ==, **NE** for !=, **G** for >, **L** for <, **GE** for >= or **LE** for <=)
5) **Logical Operations:**
   NOT R_d, R
   <AND/OR> R_d, R_1, R_2
6) **Conditional Branch:**
   BNEZ R_d, label
7) **Unconditional Branch:**
   BR label

Challenges

1) Re-iterate over CFG to remove conflicts
2) Label count
3) Try variety of inputs
4) Creation of Quadruple
5) Scope of variables

Reference Links

1) [Introduction to Yacc]
2) [Intermediate Code Generator]
3) [Target Code Generation]
4) [Javatpoint - Code Generation]
5) [UC Davis - Code Generation]

Thank You!