CS335A Course Project
Compiler Design

GROUP 29

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Source Language - C
Implementation Language - Python
Target Language - MIPS

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Basic Features Implemented

- •Native Data Types(Integer)
- •Variables and Expressions
- •Control Statements
    - If,If else if else,If else
    - Loops (for, while)
- Input/Output Statements
- Arrays
- Functions
    - Recursion

Basic Features Not Implemented

- •User Defined types (struct)
- •Pointers
- •Simple Library Functions sin(),cos()

Salient Features

• We have used the register allocation scheme in which the labels get register only if they are in use,i.e,they get freed as soon as they are not in use.This has been implemented by scanning the 3-ac from bottom as taught in the class.

• If all the registers are busy and there is a demand, register is alloted on the basis of Least Recently Used Scheme.,i.e,the value is stored in the memory and that corresponding register is returned.

• The evaluation of any expression is optimum in this compiler.

• In case of arrays or to access memory, we have calculated the offset value with the help of intermediate language (Python) ,if possible, to reduce the use of registers.

• put() and get() functions have been implemented to output the value and to get the value.

• typeof() function has been implemented which gives the type of any expression passed as parameter.

• Constant folding feature has been implemented.