

Ch 5 Code Generation and Optimization

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★ Operand descriptors

(i) Attributes \rightarrow contains length, type etc of operand.

(ii) Addressability \rightarrow specifies location of operand

(a) Addressability Code:

M: Operand in memory

R: Operand in Register

AM: Address in memory

AR: Address in register

(b) Address \rightarrow Address of CPU register

★ Quadruples

(i) Useful in optimizing compiler.

(ii) more space required

(iii) we can move statements

Triples

(i) not much useful in optimizing compiler.

(ii) Less space required

(iii) ~~can~~ cannot move statements.

★ Code Optimization

- (i) Dead Code Elimination
- (ii) Frequency Reduction
- (iii) Strength Reduction

★ Directed Acyclic Graph (DAG) for an expression identifies the common sub-expressions in the expression