Compilers

Follow Sets

Alex Aiken

- Definition:

    Follow(X) = { t | S $\rightarrow^*$ β X t δ }

- Intuition
    - If X $\rightarrow$ A B then First(B) $\subseteq$ Follow(A) and

                  Follow(X) $\subseteq$ Follow(B)
        - if B $\rightarrow^*$ ε then Follow(X) $\subseteq$ Follow(A)

    - If S is the start symbol then $ $\in$ Follow(S)

Algorithm sketch:

1. $\$ \in$ Follow(S)

2. First(β) - $\{\varepsilon\} \subseteq$ Follow(X)

    – For each production $A \rightarrow \alpha\, X\, \beta$

3. Follow(A) $\subseteq$ Follow(X)

    – For each production $A \rightarrow \alpha\, X\, \beta$ where

    $\varepsilon \in$ First(β)

- Recall the grammar

    E → T X   X → + E | ε
    T → (E) | int Y   Y → * T | ε