6.1 Analysis Continued

6.1.1 Parsing Continued

6.1.1.1 LR(0) Parsing

Example 6.1 -

- $S \rightarrow E\$$

- $E \rightarrow E + a$

- $E \rightarrow a$

You can not parse this grammar with LL because the praser does not how many times to apply the recursive rule.

6.1.1.2 LR(0) Parsing Algorithm

- for each a in $\ell\$$ (ℓ is input)
    - While ($Reduce(\text{stack}) = \{A \rightarrow \gamma\}$)
        * Pop $|\gamma|$ times
        * Push A
    - if ($Reject(stack + a)$) then throw ERROR
    - push a
- $Reject(\alpha) = \alpha$ is not a viable prefix
- $Reduce(\alpha) = \{A \rightarrow \gamma | \exists P, \alpha = \beta\gamma \text{ and } \beta A \text{ is a viable prefix }\}$

Definition 6.2 α *is a* <u>*viable prefix*</u> *if it is a prefix of a some sentential form which is any sequence that can be derived from the start symbol.*

Only some viable prefixes ever occur as stacks and these subsets form a regular language.