­LL(1) sintaksna analiza

* **Primer: Grupa 5**  
    
  CaseStatement → case ( ID ) { WhenStatementList }  
    
  WhenStatementList → WhenStatementList WhenStatement | WhenStatement  
    
  WhenStatement → when CONST : Statement  
    
  Statement → CaseStatement | ID = ID ; | ID = CONST ;
* **Smene gramatike:  
    
  (1)** CaseStatement → case ( ID ) { WhenStatementList }  
    
  **(2)** WhenStatementList → WhenStatement WhenStatementList’  
    
  **(3)** WhenStatementList’ → WhenStatement WhenStatementList’   
    
  **(4)** WhenStatementList’ → ε  
    
  **(5)** WhenStatement → when CONST : Statement  
    
  **(6)** Statement → CaseStatement  
    
  **(7)** Statement → ID = ID ;  
    
  **(8)** Statement → ID = CONST ;
* **FIRST I FOLLOW:**

First

|  |  |  |
| --- | --- | --- |
| Redni broj | Smena | First(Smena) |
| 1 | CaseStatement → case ( ID ) { WhenStatementList } | {case} |
| 2 | WhenStatementList → WhenStatement WhenStatementList’ | {when} |
| 3 | WhenStatementList’ → WhenStatement WhenStatementList’ | {when} |
| 4 | WhenStatementList’ → ε |  |
| 5 | WhenStatement → when CONST : Statement | {when} |
| 6 | Statement → CaseStatement | {case} |
| 7 | Statement → ID = ID ; | {ID} |
| 8 | Statement → ID = CONST ; | {ID} |

Follow

∪ ⊂ ∈

**CaseStatement: FOLLOW(CaseStatement) = {#, when, } }**

# ∈ FOLLOW(CaseStatement),­

(6) FOLLOW(Statement)⊂FOLLOW(CaseStatement)}

**WhenStatementList: FOLLOW(WhenStatementList) = { } }**

(1) } ∈ FOLLOW(WhenStatementList)

**WhenStatementList’: FOLLOW(WhenStatementList’) = { } }**

(2) FOLLOW(WhenStatementList)⊂FOLLOW(WhenStatementList’)

(3) FOLLOW(WhenStatementList’)⊂FOLLOW(WhenStatementList’)

**WhenStatement: FOLLOW(WhenStatement) = { when, } }**

(2) FIRST(WhenStatementList’) ⊂ FOLLOW(WhenStatement)

(2)WhenStatementList → WhenStatement => FOLLOW(WhenStatementList) ⊂ FOLLOW(WhenStatement)

(3) FIRST(WhenStatementList’) ⊂ FOLLOW(WhenStatement)

(3) WhenStatementList’ → WhenStatement => ` FOLLOW(WhenStatementList’) ⊂ FOLLOW(WhenStatement)

**Statement: FOLLOW(Statement) = { when, } }**

(5) FOLLOW(WhenStatement) ⊂ FOLLOW(Statement)

* **Sintaksna tabela:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Simbol na vrhu magacina | Ulazni simbol | | | | | | | | | | | |
| case | ( | ) | ID | { | } | when | CONST | : | = | ; | # |
| CS | (case (ID) {WS},1) |  |  |  |  |  |  |  |  |  |  |  |
| WSL |  |  |  |  |  |  | (WS WSL’,2) |  |  |  |  |  |
| WSL’ |  |  |  |  |  | (ε,4) | (WS WSL’,3) |  |  |  |  |  |
| WS |  |  |  |  |  |  | (when CONST : S,5) |  |  |  |  |  |
| S | (CS,6) |  |  | (ID = ID;,7)  (ID = CONST :,8) |  |  |  |  |  |  |  |  |
| case | pop |  |  |  |  |  |  |  |  |  |  |  |
| ( |  | pop |  |  |  |  |  |  |  |  |  |  |
| ) |  |  | pop |  |  |  |  |  |  |  |  |  |
| ID |  |  |  | pop |  |  |  |  |  |  |  |  |
| { |  |  |  |  | pop |  |  |  |  |  |  |  |
| } |  |  |  |  |  | pop |  |  |  |  |  |  |
| when |  |  |  |  |  |  | pop |  |  |  |  |  |
| CONST |  |  |  |  |  |  |  | pop |  |  |  |  |
| : |  |  |  |  |  |  |  |  | pop |  |  |  |
| = |  |  |  |  |  |  |  |  |  | pop |  |  |
| ; |  |  |  |  |  |  |  |  |  |  | pop |  |
| # |  |  |  |  |  |  |  |  |  |  |  | acc |

* **Postupak sintaksne analize:**

|  |  |  |
| --- | --- | --- |
| Radni magacin | Ulazni simbol | Akcija |
| CS # | case | smena 1 |
| case (ID) {WSL} # | case | pop |
| case (ID) {WSL} # | ( | pop |
| case (ID) {WSL} # | ID | pop |
| case (ID) {WSL} # | ) | pop |
| case (ID) {WSL} # | { | pop |
| case (ID) {WS WSL’} # | when | smena 2 |
| case (ID) {when CONST : WSL’} # | when | smena 5 |
| case (ID) {when CONST : S WSL’} # | when | pop |
| case (ID) {when CONST : S WSL’} # | CONST | pop |
| case (ID) {when CONST : S WSL’} # | : | pop |
| case (ID) {when CONST : ID = ID ; WSL’} # | ID | smena 7 |
| case (ID) {when CONST : ID = ID ; WSL’} # | ID | pop |
| case (ID) {when CONST : ID = ID ; WSL’} # | = | pop |
| case (ID) {when CONST : ID = ID ; WSL’} # | ID | pop |
| case (ID) {when CONST : ID = ID ; WSL’} # | ; | pop |
| case (ID) {when CONST : ID = ID ; } # | ­} | smena 4 |
| case (ID) {when CONST : ID = ID ; } # | } | pop |
| case (ID) {when CONST : ID = ID ; } # | # | acc |