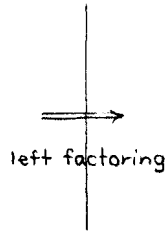


مثال: پارسر بر خورد کننده با خطا  
(روش LL(1))

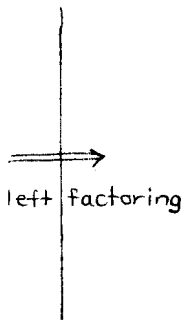
$S' \rightarrow S \$$   
 $S \rightarrow \text{if } e \text{ then } S$   
 $S \rightarrow \text{if } e \text{ then } S \text{ else } S$   
 $S \rightarrow a := e ; S$   
 $S \rightarrow \text{while } e \text{ do } S$



$S' \rightarrow S \$$   
 $S \rightarrow \text{if } e \text{ then } S A$   
 $S \rightarrow a := e ; S$   
 $S \rightarrow \text{while } e \text{ do } S$   
 $A \rightarrow \text{else } S | e$

ترکیب  
+ قواعد خطا  
panic mode

error productions :  $S \rightarrow a := e S$  ; جا افتاده در سوم است.  
 $S \rightarrow \text{while } e S$  do جا افتاده در سوم است.



$S' \rightarrow S \$$   
 $S \rightarrow \text{if } e \text{ then } S A \quad (1)$   
 $S \rightarrow a := e B \quad (2)$   
 $S \rightarrow \text{while } e C \quad (3)$   
 $A \rightarrow \text{else } S | e \quad (4, 5)$   
 $B \rightarrow ; S | S \quad (6, -6)$   
 $C \rightarrow \text{do } S | S \quad (7, -7)$

$\text{Follow}(S) = \{\$, \text{else}\}$   
 $\text{Follow}(A) = \{\$, \text{else}\}$   
 $\text{Follow}(B) = \{\$, \text{else}\}$   
 $\text{Follow}(C) = \{\$, \text{else}\}$

$\text{Synch}(A) = \text{Follow}(A) \cup \text{First}(A) \cup \{\text{while, if, a}\} = \{\$, \text{else}\} \cup \{\text{else, } \epsilon\} \cup \{\text{while, if, a}\}$   
 $\text{Synch}(B) = \text{Follow}(B) \cup \text{First}(B) \cup \{\text{while, if, a}\} = \{\$, \text{else}\} \cup \{;, \text{while, a, if}\} \cup \{\epsilon\}$   
 $\text{Synch}(C) = \text{Follow}(C) \cup \text{First}(C) \cup \{\text{while, if, a}\} = \{\$, \text{else}\} \cup \{\text{do, while, a, if}\} \cup \{\epsilon\}$   
 $\text{Synch}(S) = \text{Follow}(S) \cup \text{First}(S) \cup \{\text{while, if, a}\} \cup \{; =\} = \{\$, \text{else}\} \cup \{\text{do, while, a, if}\} \cup \{\epsilon\} \cup \{;\}$

M	if	e	then	else	while	do	a	:=	;	\$
S	(1)			SYNCH	(3)	SYNCH	(2)		SYNCH	SYNCH
A	SYNCH			(4), (8)*	SYNCH		SYNCH			(5)
B	(-6)			SYNCH	(-6)		(-6)		(6)	SYNCH
C	(-7)				(-7)	(7)	(-7)			SYNCH

\* (اصلاح جدول پارس LL(1) برای کلماتهای مبهم)

if e a := e while e a := e else \$

STACK	INPUT	ACTION
\$S	if e a := e while e a := e else \$	
\$ A S then e if	if e a := e while e a := e else \$	
\$ A S then e	e a := e while e a := e else \$	
\$ A S then	a := e while e a := e else \$	error: missing "then"
\$ A S	a := e while e a := e else \$	
\$ A B e := a	a := e while e a := e else \$	
\$ A B e :=	:= e while e a := e else \$	
\$ A B e	e while e a := e else \$	
\$ A B	while e a := e else \$	error: missing ";"
\$ A S	while e a := e else \$	
\$ A C e while	while e a := e else \$	

\$ A C e  
 \$ A C  
 \$ A S  
 \$ A B e := a  
 \$ A B e :=  
 \$ A B e  
 \$ A B  
 \$ A  
 \$ S else  
 \$ S  
 \$

e a := e else \$  
a := e else \$  
a := e else \$  
a := e else \$  
 := e else \$  
 e else \$  
else \$  
 else \$  
else \$  
 \$  
 \$

error: missing "do"

error M[B, else] = SYNCH

error M[S, \$] = SYNCH

finish