Programski Prevodioci

Druga Laboratorijska Vežba

Grupa 8

Statements → *Statements* **;** *Statement* | *Statement*
Statement → *Assignment* | *WhileStatement*
Assignment → **ID** = *Term* | **ID** = *Term* **+** *Term*
WhileStatement → **repeat (** *Term* **) {** *Statements* **}**
Term → **ID** | **CONST**

(1) *Statements* → *Statements* **;** *Statement*
(2) *Statements* → *Statement*
(3) *Statement* → *Assignment*
(4) *Statement* → *WhileStatement*
(5) *Assignment* → **ID** = *Term*
(6) *Assignment* → **ID** = *Term* + *Term*
(7) *WhileStatement* → **repeat (** *Term* **) {** *Statements* **}**
(8) *Term* → **ID**
(9) *Term* → **CONST**

(1) *Ss* → *Ss* **;** *S*
(2) *Ss* → *S*
(3) *S* → *A*
(4) *S* → *WS*
(5) *A* → **ID** = *T*
(6) *A* → **ID** = *T* + *T*
(7) *WS* → **repeat (** *T* **) {** *Ss* **}**
(8) *T* → **ID**
(9) *T* → **CONST**

1. Kreiranje kanoničkog skupa LR pravila

I_0:

Ss' → . *Ss*
Ss → . *Ss* **;** *S*
Ss → . *S*
S → . *A*
S → . *WS*
A → . **ID** = *T*
A → . **ID** = *T* + *T*
WS → . **repeat (** *T* **) {** *Ss* **}**

I_1 = goto(I_0, *Ss*):

Ss' → *Ss* .
SS → *SS* . **;** *S*

I_2 = goto(I_1, **;**):

Ss → *SS* **;** . *S*
S → . *A*
S → . *WS*
A → . **ID** = *T*
A → . **ID** = *T* + *T*
WS → . **repeat (** *T* **) {** *Ss* **}**

I_3 = goto(I_2, *S*):

Ss → *SS* **;** *S* .
Redukciono stanje za smenu (1)

I_4 = goto(I_0, *S*):

Ss → *S* .
Redukciono stanje za smenu (2)

I_5 = goto(I_0, *A*):

S → A .
Redukciono stanje za smenu (3)

I_6 = goto(I_0, *WS*):

S → *WS* .
Redukciono stanje za smenu (4)

I_7 = goto(I_0, **ID**):

A → **ID** . = *T*
A → **ID** . = *T* + *T*

I_8 = goto(I_7, =):

A → **ID** = . *T*
A → **ID** = . *T* + *T*
T → . **ID**
T → . **CONST**

l_9 = goto(l_8, T):

$A \rightarrow$ **ID** = T .

Redukciono stanje za smenu (5)

$A \rightarrow$ **ID** = T . + T

l_{10} = goto(l_9, +):

$A \rightarrow$ **ID** = T + . T

$T \rightarrow$. **ID**

$T \rightarrow$. **CONST**

l_{11} = goto(l_{10}, T):

$A \rightarrow$ **ID** = T + T .

Redukciono stanje za smenu (6)

l_{12} = goto(l_8, **ID**):

$T \rightarrow$ **ID** .

Redukciono stanje za smenu (8)

l_{13} = goto(l_8, **CONST**):

$T \rightarrow$ **CONST** .

Redukciono stanje za smenu (9)

l_{14} = goto(l_0, **repeat**):

$WS \rightarrow$ **repeat** . **(** T **)** **{** Ss **}**

l_{15} = goto(l_{14}, **(**):

$WS \rightarrow$ **repeat (** . T **)** **{** Ss **}**

$T \rightarrow$. **ID**

$T \rightarrow$. **CONST**

l_{16} = goto(l_{15}, T):

$WS \rightarrow$ **repeat (** T . **)** **{** Ss **}**

l_{17} = goto(l_{16}, **)**):

$WS \rightarrow$ **repeat (** T **)** . **{** Ss **}**

l_{18} = goto(l_{17}, **{**):

$WS \rightarrow$ **repeat (** T **)** **{** . Ss **}**

$SS \rightarrow$. SS **;** S

$Ss \rightarrow$. S

$S \rightarrow$. A

$S \rightarrow$. WS

$A \rightarrow$. **ID** = T

$A \rightarrow$. **ID** = T + T

$WS \rightarrow$. **repeat (** T **)** **{** Ss **}**

l_{19} = goto(l_{18}, Ss):

$WS \rightarrow$ **repeat (** T **)** **{** Ss . **}**

$Ss \rightarrow Ss$. **;** S

l_{20} = goto(l_{19}, **}**):

$WS \rightarrow$ **repeat (** T **)** **{** Ss **}** .

Redukciono stanje za smenu (7)

l_2 = goto (l_{19}, **;**)

l_4 = goto (l_{18}, S)

l_5 = goto (l_2, A)

l_5 = goto(l_{18}, A)

l_6 = goto(l_2, WS)

l_6 = goto (l_{18}, WS)

l_7 = goto (l_2, **ID**)

l_7 = goto(l_{18}, **ID**)

l_{12} = goto(l_{15}, **ID**)

l_{12} = goto(l_{10}, **ID**)

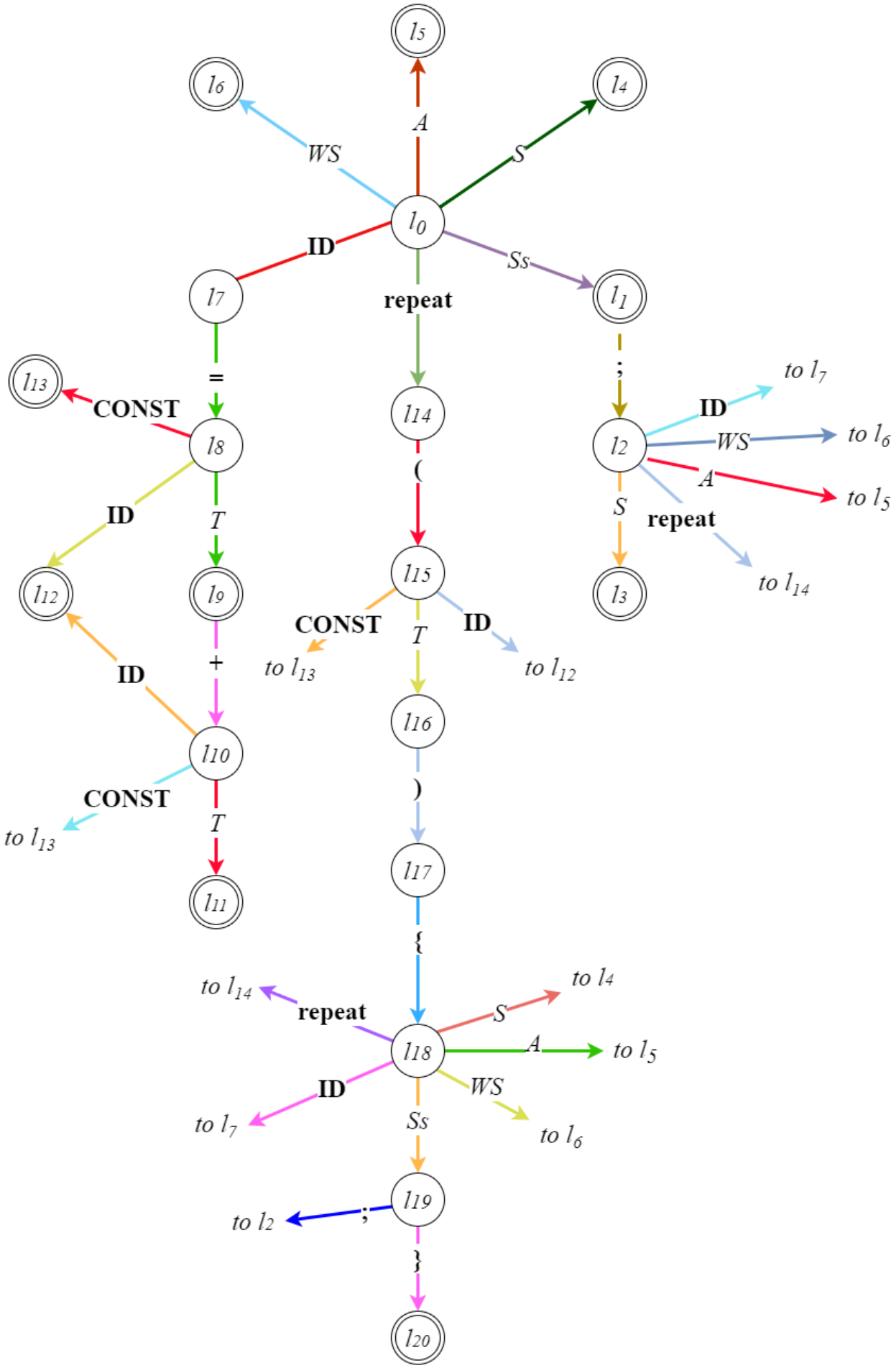
l_{13} = goto(l_{10}, **CONST**)

l_{13} = goto(l_{15}, **CONST**)

l_{14} = goto(l_2, **repeat**)

l_{14} = goto(l_{18}, **repeat**)

2. Crtanje grafa prelaza konačnog automata za prepoznavanje vidljivih prefiksa



3. Popunjavanje LR sintaksne tabele

Pomoćna tabela Follow(A) i First(α) funkcija za konkretne smene

Redni broj smene	Redukciono stanje	A → α	FOLLOW(A)	FIRST(α)
0.	l_1	*Ss'* → *Ss*	#	ID repeat
1.	l_3	*Ss* → *Ss* ; *S*	# ; }	ID repeat
2.	l_4	*Ss* → *S*	# ; }	ID repeat
3.	l_5	S → A	# ; }	ID
4.	l_6	*S* → *WS*	# ; }	repeat
5.	l_9	*A* → ID = *T*	# ; }	ID
6.	l_{11}	*A* → ID = *T* + *T*	# ; }	ID
7.	l_{12}	*T* → ID	# ; } +)	ID
8.	l_{13}	*T* → CONST	# ; } +)	CONST
9.	l_{20}	*WS* → repeat (*T*) { *Ss* }	# ; }	repeat

LR sintaksna tabela

	AKCIJE											PRELAZI				
	;	ID	=	+	CONST	repeat	(	)	{	}	#	*Ss*	*S*	*A*	*T*	*WS*
0		s7				s14						1	4	5		6
1	s2										acc					
2		s7				s14								5		6
3	r1									r1	r1					
4	r2									r2	r2					
5	r3									r3	r3					
6	r4									r4	r4					
7			s8													
8		s12			s13										9	
9	r5			s10						r5	r5					
10		s12			s13										11	
11	r6									r6	r6					
12	r7			r7				r7		r7	r7					
13	r8			r8				r8		r8	r8					
14							s15									
15		s12			s13										16	
16								s17								
17									s18							
18		s7				s14						19	4	5		6
19	s2									s20						
20	r9									r9	r9					