

به نام خدا

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تکلیف عملی دوم

1:

	first	follow
StatementList	[if, while, id, ϵ]	[\$,]]
Statement	[if, while, id]	[if, while, id, \$,]]
Assignment	[id]	[if, while, id, \$,]]
Conditional	[if]	[if, while, id, \$,]]
Loop	[while]	[if, while, id, \$,]]
Expr	[id, number]	[;,)]
RestExpr	[+, ϵ]	[;,)]
Factor	[id, number]	[+, ;,)]

R1 = "StatementList -> Statement StatementList"

R2 = "StatementList ->"

R3 = "Statement -> Assignment"

R4 = "Statement -> Conditional"

R5 = "Statement -> Loop"

R6 = "Assignment -> id = Expr ;"

R7 = "Conditional -> if (Expr) { StatementList } else { StatementList }"

R8 = "Loop -> while (Expr) { StatementList }"

R9 = "Expr -> Factor RestExpr"

R10 = "RestExpr -> + Factor RestExpr"

R11 = "RestExpr ->"

R12 = "Factor -> id"

R13 = "Factor -> number"

2:

	Id	=	;	()	{	}	+	Number	If	Else	While	\$
StatementList	R1						R2			R1		R1	R2
Statement	R3									R4		R5	
Assignment	R6												
Conditional										R7			
Loop												R8	
Expr	R9								R9				
RestExpr			R11		R11			R10					R11
Factor	R12								R13				

3:

برای ورودی

```
id = number ;
if ( id + number ) {
    id = number ;
}
else {
    id = id + number ;
}
```

Recursive Parser:

```
real    0m3.068s
user    0m0.013s
sys     0m0.019s
```

Table Parser:

```
real    0m2.770s
user    0m0.025s
sys     0m0.009s
```