

Devoir 3 - Analyse Syntaxique Récursive Descendante

présenté à
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dans le cours
SEG2506

par
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1. $\langle \text{program} \rangle ::= \text{begin } \langle \text{statement_list} \rangle \text{ end}$
 $\langle \text{statement_list} \rangle ::= \langle \text{statement} \rangle ; \langle \text{statement}' \rangle$
 $\langle \text{statement}' \rangle ::= \langle \text{statement_list} \rangle \mid \epsilon$
 $\langle \text{statement} \rangle ::= \text{id} = \langle \text{expression} \rangle$
 $\langle \text{expression} \rangle ::= \langle \text{factor} \rangle \langle \text{factor}' \rangle$
 $\langle \text{factor}' \rangle ::= + \langle \text{factor} \rangle \mid - \langle \text{factor} \rangle \mid \epsilon$
 $\langle \text{factor} \rangle ::= \text{id} \mid \text{num}$

3.

- 1) $\text{First}(\langle \text{program} \rangle) = \{\text{begin}\}$
 $\text{First}(\langle \text{statement_list} \rangle) = \{\text{id}\}$
 $\text{First}(\langle \text{statement}' \rangle) = \{\text{id}, \epsilon\}$
 $\text{First}(\langle \text{statement} \rangle) = \{\text{id}\}$
 $\text{First}(\langle \text{expression} \rangle) = \{\text{id}, \text{num}\}$
 $\text{First}(\langle \text{factor}' \rangle) = \{+, -, \epsilon\}$
 $\text{First}(\langle \text{factor} \rangle) = \{\text{id}, \text{num}\}$

$\text{Follow}(\langle \text{program} \rangle) = \{\$ \}$
 $\text{Follow}(\langle \text{statement_list} \rangle) = \{\text{end}\}$
 $\text{Follow}(\langle \text{statement}' \rangle) = \{\text{end}\}$
 $\text{Follow}(\langle \text{statement} \rangle) = \{;\}$
 $\text{Follow}(\langle \text{expression} \rangle) = \{;\}$
 $\text{Follow}(\langle \text{factor}' \rangle) = \{;\}$
 $\text{Follow}(\langle \text{factor} \rangle) = \{+, -, ;\}$

	begin	end	;	id	num	+	-	=	\$
program	<program> --> begin <statement_ list> end								(S)
statement_list		(S)		<statement_ _list> --> <statement >;<stateme nt'>					
statement'		(S)		<statement '> --> <statement_ _list>					<statement' > --> ϵ
statement			(S)	<statement > --> id = <expressio n>					
expression			(S)	<expressio n> --> <factor><f actor'>	<expres sion> --> <factor ><facto r'>				

factor'			(S)			<factor '> --> +<factor> r>	<factor'> --> -<factor>		<factor'> --> ϵ
factor			(S)	<factor> --> id	<factor> > --> num	(S)	(S)		