

Trabalho Compiladores

Lázaro Queiroz da Silva

1. EXPRESSÕES REGULARES

TIPO <tipo>

$E = (\text{INTEIRO}) + (\text{LOGICO}) + (\text{QUEBRADO})$

VALOR <valor>

$E = ("+" + " " -) + (0-9)^* + ("+" + " " -) + (0-9)^* . () . (0-9)^*$

IDENTIFICADOR <identificador>

$E = (a-z + A-Z) . (a-z + A-Z + 0-9)^*$

OPERADOR BOOLEANO <opb>

$E = ("&&") + ("||")$

OPERADOR ARITMETICO <opa>

$E = ("+") + ("-") + ("*") + ("/")$

2. PALAVRAS RESERVADAS

SE

SENAO

ENQUANTO

FACA

ACABOU

INTEIRO

LOGICO

QUEBRADO

3. GRAMÁTICA

$G = (V, T, \langle \text{programa} \rangle, P, e)$

$V = \{ \langle \text{comandos} \rangle, \langle \text{comandox} \rangle, \langle \text{bloco} \rangle, \langle \text{comando} \rangle, \langle \text{blocose} \rangle, \langle \text{se} \rangle, \langle \text{senao} \rangle, \langle \text{repeticao} \rangle, \langle \text{decl_var} \rangle, \langle \text{atribuicao} \rangle, \langle \text{explogica} \rangle, \langle \text{atribdecl} \rangle, \langle \text{expressao} \rangle, \langle \text{expressaox} \rangle, \langle \text{parent} \rangle, \langle \text{operad} \rangle, \langle \text{nopb} \rangle \}$

$T = \{ \text{SE}, \text{SENAO}, \text{FACA}, \text{ACABOU}, \text{ENQUANTO}, \langle \text{opa} \rangle, \langle \text{opb} \rangle, \langle \text{tipo} \rangle, \langle \text{identificador} \rangle, \langle \text{valor} \rangle, !, '(', ')', '=', ';\}$

P:

$\langle \text{comandos} \rangle ::= \langle \text{comando} \rangle \langle \text{comandox} \rangle$

$\langle \text{comandox} \rangle ::= \langle \text{comando} \rangle \langle \text{comandox} \rangle | e$

$\langle \text{bloco} \rangle ::= \langle \text{comandos} \rangle$

$\langle \text{comando} \rangle ::= \langle \text{decl_var} \rangle | \langle \text{blocose} \rangle | \langle \text{repeticao} \rangle | \langle \text{atribdecl} \rangle;$

$\langle \text{blocose} \rangle ::= \langle \text{se} \rangle \langle \text{senao} \rangle$

$\langle \text{se} \rangle ::= \text{SE} \langle \text{explogica} \rangle \text{ FACA} \langle \text{bloco} \rangle$

$\langle \text{senao} \rangle ::= \text{ACABOU} | \text{SENAO} \langle \text{bloco} \rangle \text{ ACABOU}$

$\langle \text{repeticao} \rangle ::= \text{ENQUANTO} \langle \text{explogica} \rangle \text{ FACA} \langle \text{bloco} \rangle \text{ ACABOU}$

$\langle \text{decl_var} \rangle ::= \langle \text{tipo} \rangle \langle \text{identificador} \rangle$

$\langle \text{atribuicao} \rangle ::= \langle \text{identificador} \rangle = \langle \text{expressao} \rangle$

$\langle \text{explogica} \rangle ::= \langle \text{identificador} \rangle | \langle \text{nopb} \rangle \langle \text{explogica} \rangle$

$\langle \text{atribdecl} \rangle ::= \langle \text{atribuicao} \rangle | \langle \text{decl_var} \rangle$

$\langle \text{expressao} \rangle ::= \langle \text{parent} \rangle \langle \text{expressaox} \rangle | \langle \text{operad} \rangle \langle \text{expressao} \rangle$

$\langle \text{expressaox} \rangle ::= \langle \text{operad} \rangle \langle \text{expressao} \rangle | e$

$\langle \text{parent} \rangle ::= \langle \text{identificador} \rangle | \langle \text{valor} \rangle | (\langle \text{expressao} \rangle)$

$\langle \text{operad} \rangle ::= \langle \text{opa} \rangle | \langle \text{opb} \rangle$

$\langle \text{nopb} \rangle ::= \langle \text{opb} \rangle | !$

FIRST

$\text{FIRST}(\langle \text{comandos} \rangle) = \{ \langle \text{tipo} \rangle, \text{"SE"}, \text{ENQUANTO}, \langle \text{identificador} \rangle \}$

$\text{FIRST}(\langle \text{comandox} \rangle) = \{ \langle \text{tipo} \rangle, \text{"SE"}, \text{ENQUANTO}, \langle \text{identificador} \rangle, e \}$

$\text{FIRST}(\langle \text{bloco} \rangle) = \{ \langle \text{tipo} \rangle, \text{"SE"}, \text{"ENQUANTO"}, \langle \text{identificador} \rangle \}$

$\text{FIRST}(\langle \text{comando} \rangle) = \{ \langle \text{tipo} \rangle, \text{"SE"}, \text{"ENQUANTO"}, \langle \text{identificador} \rangle \}$

$\text{FIRST}(\langle \text{blocose} \rangle) = \{ \text{"SE"} \}$

$\text{FIRST}(\langle \text{se} \rangle) = \{ \text{"SE"} \}$

$\text{FIRST}(\langle \text{senao} \rangle) = \{ \text{"ACABOU"}, \text{"SENAO"} \}$

$\text{FIRST}(\langle \text{repeticao} \rangle) = \{ \text{"ENQUANTO"} \}$

$\text{FIRST}(\langle \text{decl_var} \rangle) = \{ \langle \text{tipo} \rangle \}$

$\text{FIRST}(\langle \text{atribuicao} \rangle) = \{ \langle \text{identificador} \rangle \}$

$\text{FIRST}(\langle \text{explogica} \rangle) = \{ \langle \text{identificador} \rangle, \langle \text{opb} \rangle, "!" \}$

$\text{FIRST}(\langle \text{atribdecl} \rangle) = \{ \langle \text{identificador} \rangle, \langle \text{tipo} \rangle \}$

$\text{FIRST}(\langle \text{expressao} \rangle) = \{ \langle \text{identificador} \rangle, \langle \text{valor} \rangle, "(", \langle \text{opa} \rangle, \langle \text{opb} \rangle \}$

$\text{FIRST}(\langle \text{expressaox} \rangle) = \{ \langle \text{opa} \rangle, \langle \text{opb} \rangle, \text{e} \}$

$\text{FIRST}(\langle \text{parent} \rangle) = \{ \langle \text{identificador} \rangle, \langle \text{valor} \rangle, "(" \}$

$\text{FIRST}(\langle \text{operad} \rangle) = \{ \langle \text{opa} \rangle, \langle \text{opb} \rangle \}$

$\text{FIRST}(\langle \text{nopb} \rangle) = \{ \langle \text{opb} \rangle, "!" \}$

FOLLOW

$\text{FOLLOW}(\langle \text{comandos} \rangle) = \{\$, \text{"ACABOU"}, \text{"SENAO"}\}$

$\text{FOLLOW}(\langle \text{comandox} \rangle) = \{\$, \text{"ACABOU"}, \text{"SENAO"}\}$

$\text{FOLLOW}(\langle \text{bloco} \rangle) = \{\text{"ACABOU"}, \text{"SENAO"}\}$

$\text{FOLLOW}(\langle \text{comando} \rangle) = \{\$, \text{"SE"}, \text{"ENQUANTO"}, \langle \text{identificador} \rangle, \langle \text{tipo} \rangle, \text{"ACABOU"}, \text{"SENAO"}\}$

$\text{FOLLOW}(\langle \text{blocose} \rangle) = \{\$, \text{"SE"}, \text{"ENQUANTO"}, \langle \text{identificador} \rangle, \langle \text{tipo} \rangle, \text{"ACABOU"}, \text{"SENAO"}\}$

$\text{FOLLOW}(\langle \text{se} \rangle) = \{\text{"ACABOU"}, \text{"SENAO"}\}$

$\text{FOLLOW}(\langle \text{senao} \rangle) = \{\$, \text{"SE"}, \text{"ENQUANTO"}, \langle \text{identificador} \rangle, \langle \text{tipo} \rangle, \text{"ACABOU"}, \text{"SENAO"}\}$

$\text{FOLLOW}(\langle \text{repeticao} \rangle) = \{\$, \text{"SE"}, \text{"ENQUANTO"}, \langle \text{identificador} \rangle, \langle \text{tipo} \rangle, \text{"ACABOU"}, \text{"SENAO"}\}$

$\text{FOLLOW}(\langle \text{decl_var} \rangle) = \{';'\}$

$\text{FOLLOW}(\langle \text{atribuicao} \rangle) = \{';'\}$

$\text{FOLLOW}(\langle \text{explogica} \rangle) = \{\text{FACA}\}$

$\text{FOLLOW}(\langle \text{atribdecl} \rangle) = \{';'\}$

$\text{FOLLOW}(\langle \text{expressao} \rangle) = \{';', '\})'\}$

$\text{FOLLOW}(\langle \text{expressaox} \rangle) = \{\{';', '\})'\}$

$\text{FOLLOW}(\langle \text{parent} \rangle) = \{ \langle \text{opa} \rangle, \langle \text{opb} \rangle \}$

$\text{FOLLOW}(\langle \text{operad} \rangle) = \{ \langle \text{identificador} \rangle, \langle \text{valor} \rangle, '(', \langle \text{opa} \rangle, \langle \text{opb} \rangle \}$

$\text{FOLLOW}(\langle \text{nopb} \rangle) = \{ \langle \text{identificador} \rangle, \langle \text{opb} \rangle, '!' \}$

PARSER TABLE