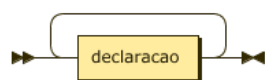
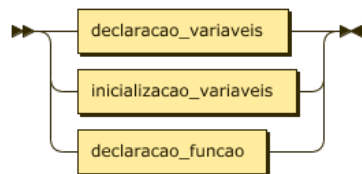


**programa:**

programa ::= declaracao+

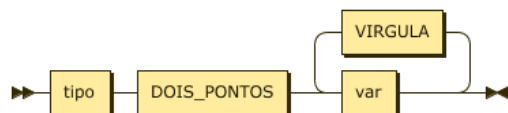
no references

**declaracao:**

declaracao  
 ::= declaracao\_variaveis  
   | inicializacao\_variaveis  
   | declaracao\_funcao

referenced by:

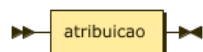
- programa

**declaracao\_variaveis:**

declaracao\_variaveis  
 ::= tipo DOIS\_PONTOS var ( VIRGULA var )\*

referenced by:

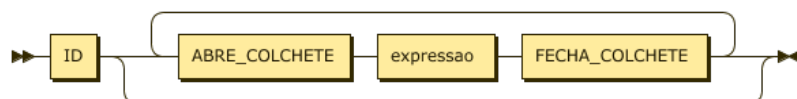
- acao
- declaracao

**inicializacao\_variaveis:**

inicializacao\_variaveis  
 ::= atribuicao

referenced by:

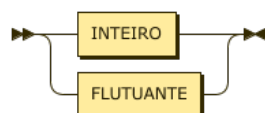
- declaracao

**var:**

var ::= ID ( ABRE\_COLCHETE expressao FECHA\_COLCHETE )\*

referenced by:

- atribuicao
- declaracao\_variaveis
- fator
- leia

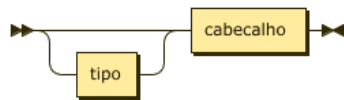
**tipo:**

tipo ::= INTEIRO  
   | FLUTUANTE

referenced by:

- [declaracao\\_funcao](#)
- [declaracao\\_variaveis](#)
- [parametro](#)

#### declaracao\_funcao:



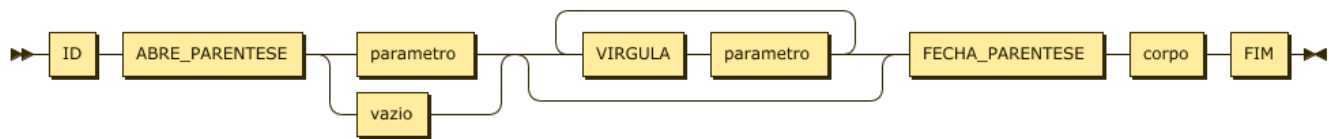
```

declaracao_funcao
  ::= tipo? cabecalho
  
```

referenced by:

- [declaracao](#)

#### cabecalho:



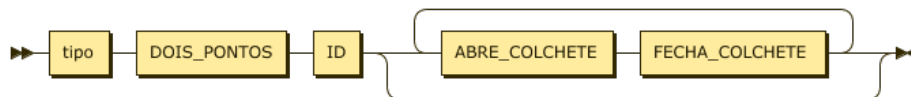
```

cabecalho
  ::= ID ABRE_PARENTESE ( parametro | vazio ) ( VIRGULA parametro )* FECHA_PARENTESE corpo FIM
  
```

referenced by:

- [declaracao\\_funcao](#)

#### parametro:



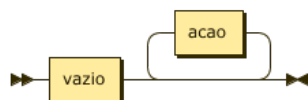
```

parametro
  ::= tipo DOIS_PONTOS ID ( ABRE_COLCHETE FECHA_COLCHETE )*
  
```

referenced by:

- [cabecalho](#)

#### corpo:



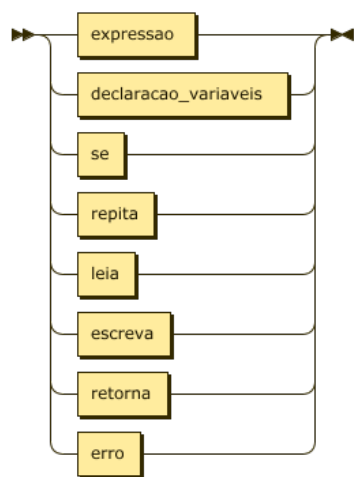
```

corpo
  ::= vazio acao*
  
```

referenced by:

- [cabecalho](#)
- [repita](#)
- [se](#)

#### acao:



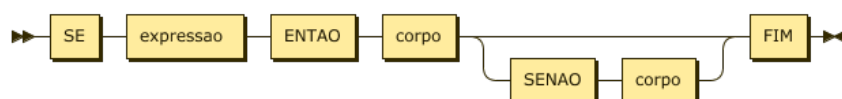
```

acao ::= expressao
      | declaracao_variaveis
      | se
      | repita
      | leia
      | escreva
      | retorna
      | erro
  
```

referenced by:

- [corpo](#)

**se:**



```
se ::= SE expressao ENTAO corpo ( SENAO corpo )? FIM
```

referenced by:

- [acao](#)

**repita:**

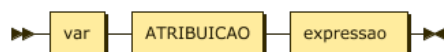


```
repita ::= REPITA corpo ATE expressao
```

referenced by:

- [acao](#)

**atribuicao:**



```
atribuicao ::= var ATRIBUICAO expressao
```

referenced by:

- [expressao](#)
- [inicializacao\\_variaveis](#)

**leia:**

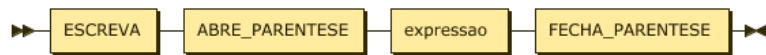


```
leia ::= LEIA ABRE_PARENTESE var FECHA_PARENTESE
```

referenced by:

- [acao](#)

**escreva:**

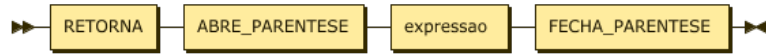


escreva ::= ESCREVA ABRE\_PARENTESE expressao FECHA\_PARENTESE

referenced by:

- [acao](#)

#### retorna:

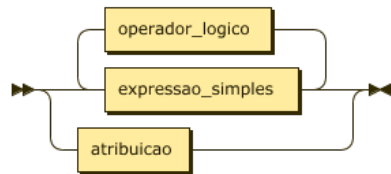


retorna ::= RETORNA ABRE\_PARENTESE expressao FECHA\_PARENTESE

referenced by:

- [acao](#)

#### expressao:

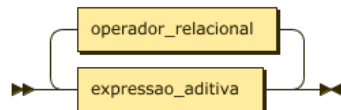


expressao  
::= expressao\_simples ( operador\_logico expressao\_simples ) \*  
| atribuicao

referenced by:

- [acao](#)
- [atribuicao](#)
- [chamada\\_funcao](#)
- [escreva](#)
- [fator](#)
- [replta](#)
- [retorna](#)
- [se](#)
- [var](#)

#### expressao\_simples:

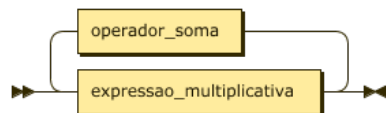


expressao\_simples  
::= expressao\_aditiva ( operador\_relacional expressao\_aditiva ) \*

referenced by:

- [expressao](#)

#### expressao\_aditiva:

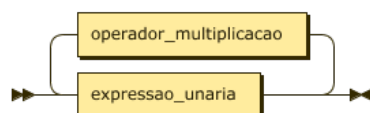


expressao\_aditiva  
::= expressao\_multiplicativa ( operador\_soma expressao\_multiplicativa ) \*

referenced by:

- [expressao\\_simples](#)

#### expressao\_multiplicativa:



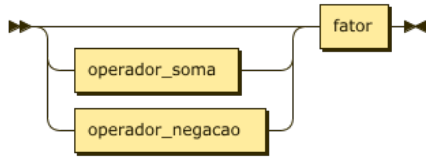
expressao\_multiplicativa

```
::= expressao_unaria ( operador_multiplicacao expressao_unaria )*
```

referenced by:

- [expressao\\_aditiva](#)

#### **expressao\_unaria:**

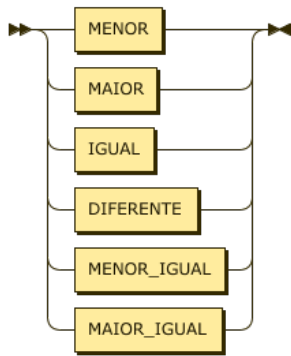


```
expressao_unaria  
  ::= ( operador_soma | operador_negacao )? fator
```

referenced by:

- [expressao\\_multiplicativa](#)

#### **operador\_relacional:**

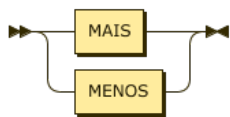


```
operador_relacional  
  ::= MENOR  
  | MAIOR  
  | IGUAL  
  | DIFERENTE  
  | MENOR_IGUAL  
  | MAIOR_IGUAL
```

referenced by:

- [expressao\\_simples](#)

#### **operador\_soma:**

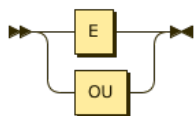


```
operador_soma  
  ::= MAIS  
  | MENOS
```

referenced by:

- [expressao\\_aditiva](#)
- [expressao\\_unaria](#)

#### **operador\_logico:**



```
operador_logico  
  ::= E  
  | OU
```

referenced by:

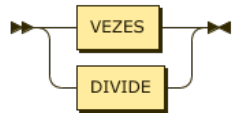
- [expressao](#)

**operador\_negacao:**

operador\_negacao  
::= NAO

referenced by:

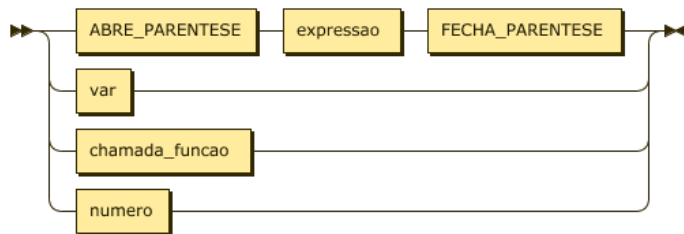
- [expressao\\_unaria](#)

**operador\_multiplicacao:**

operador\_multiplicacao  
::= VEZES  
| DIVIDE

referenced by:

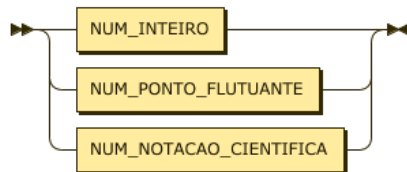
- [expressao\\_multiplicativa](#)

**fator:**

fator ::= ABRE\_PARENTESE expressao FECHA\_PARENTESE  
| var  
| chamada\_funcao  
| numero

referenced by:

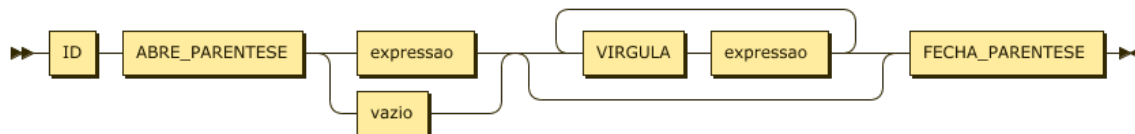
- [expressao\\_unaria](#)

**numero:**

numero ::= NUM\_INTEIRO  
| NUM\_PONTO\_FLUTUANTE  
| NUM\_NOTACAO\_CIENTIFICA

referenced by:

- [fator](#)

**chamada\_funcao:**

chamada\_funcao  
::= ID ABRE\_PARENTESE ( expressao | vazio ) ( VIRGULA expressao ) \* FECHA\_PARENTESE

referenced by:

- [fator](#)

