

LINGUAGENS FORMAIS E COMPILADORES – PROJETO COMPILADOR – FASE 02

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| Bloco de declaração: |
|--------------------------------------------------------------------------------------------------------|
| program -> block |
| block -> { stmts } |
| attr -> numType ID numType ID = math bool ID = boolOp ID = math ID = boolOp |
| numType -> int float |
| stmts -> stmt stmts null |

| Lexema Basic: |
|---------------------------------------------------------------------------------------------------------------------------------------------|
| stmt -> |
| conditional |
| attr |
| for attr ; boolOp ; attr block |
| break |
| io_input_digital args |
| io_output_digital args |
| io_input_analog args |
| io_output_analog args |
| id -> [a-zA-Z] [a-zA-Z0-9]* |
| conditional -> if condition block conditional elseif condition block conditional else block null |
| condition -> boolOp |
| args -> ID ID , args null |
| comparated -> bool math ID |
| boolOp -> comparated logOp comparated comparated logOp boolOp ! boolOp ! ID bool |

| Regras de Produção: |
|-----------------------------------------------|
| math -> numeric numeric operator numeric |

| |
|------------------------------------------------------------------|
| numeric operator ID ID operator numeric ID operator ID |
| operator -> + - * / % |
| logOp -> OR AND < <= > >= == != |
| bool -> TRUE FALSE |
| numeric -> NUM NUM . NUM NUM . NUM exp |
| exp -> e + NUM e - NUM |
| NUM -> [0-9]+ |

Exemplos com código:

1:

```
{
    float aaa = 7.2800
    bool blink = FALSE
    int port = 3
    int i

    if port == 3 {
        blink = TRUE
    }

    i = 10
}
```

2:

```
{
    int aYw = 1
    float huehue = 000000012934
    int Op4 = 1284630521261579238141327841325642387146
    bool eseManeiro = TRUE
    bool op = aYw > porraQueM3rd4
    bool not = !TRUE
    bool not = !a < o
    bool epa = 4 != 3

    if a > 3 AND TRUE {
```

```

        int a = 1
        if TRUE != t {
            int b = 1
        }
    }

    bool epa = FALSE

    float legal = 1.1
    float exp = 1.1e-10

    for a = 0 ; a < 123 ; a = a + 1 {
        float o = 9.0
        if i > 10 {
            break
        } elseif 10 >= a {
            tem = !epa
            io_input_digital legal, tem
        } else {
            io_input_digital legal, epa
        }
    }
    int e
}

```

3:

```

{
    int x = 5
    if x > 0 {
        int a = 4
        io_output_digital a
    } else {
        int b = 5
        io_output_digital b
    }
    int c
}

```