

Tecnológico Nacional de México / Instituto Tecnológico de Culiacán.



**TECNOLÓGICO
NACIONAL DE MÉXICO**



Ingeniería en Sistemas Computacionales.

Lenguajes y autómatas II.

Tarea 1 – Gramática BNF y Ejemplo.

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Horario de 13:00 a 14:00 PM.

Culiacán Sinaloa a 25 de agosto de 2025.

GRAMÁTICA BNF (Forma de Backus-Naur)

Gramática = {SI, P, NT, T}

Símbolo Inicial = {Program}

Producciones =

{

Program \rightarrow **class** Identifier {DeclarationList StatementList} EOF

DeclarationList \rightarrow [[VarDeclaration;]]*

VarDeclaration \rightarrow Type Identifier

Type \rightarrow **boolean** | **int** | **float**

StatementList \rightarrow [[Statement]]*

Statement \rightarrow **while** (BoolExpression) {StatementList}
| **System.out.println** (Expression | BoolExpression);
| **Identifier** = Expression;
| **Identifier** = BoolExpression;

BoolExpression \rightarrow Expression CMP Expression
| **true**
| **false**

Expression \rightarrow Expression Op Expression
| Identifier | Integer | Float

Op \rightarrow + | - | *

CMP \rightarrow > | <

Identifier \rightarrow Letter [[Letter | Digit]] *

Integer \rightarrow [-] Digit [[Digit]] *

Float \rightarrow [-] Digit [[Digit]] *. Digit [[Digit]] *

Letter \rightarrow A | B | C | ... | Z | a | b | c | ... | z

Digit \rightarrow 0 | 1 | 2 | ... | 9

}



No Terminales = {Program, DeclarationList, VarDeclaration, Type, StatementList, Statement, BoolExpression, Expression, Op, CMP, Identifier, Integer, Float, Letter, Digit}

Terminales = {class, {, }, EOF, :, boolean, int, float, while, (,), System.out.println, =, true, false, +, -, *, >, <, A, B, C..., Z, a, b, c..., z, 0, 1, 2..., 9 }

EJEMPLO DE CÓDIGO

```
class test {  
    int x;  
    x = 5;  
    while (x > 0) {  
        x = x - 1;  
    }  
}  
EOF
```