

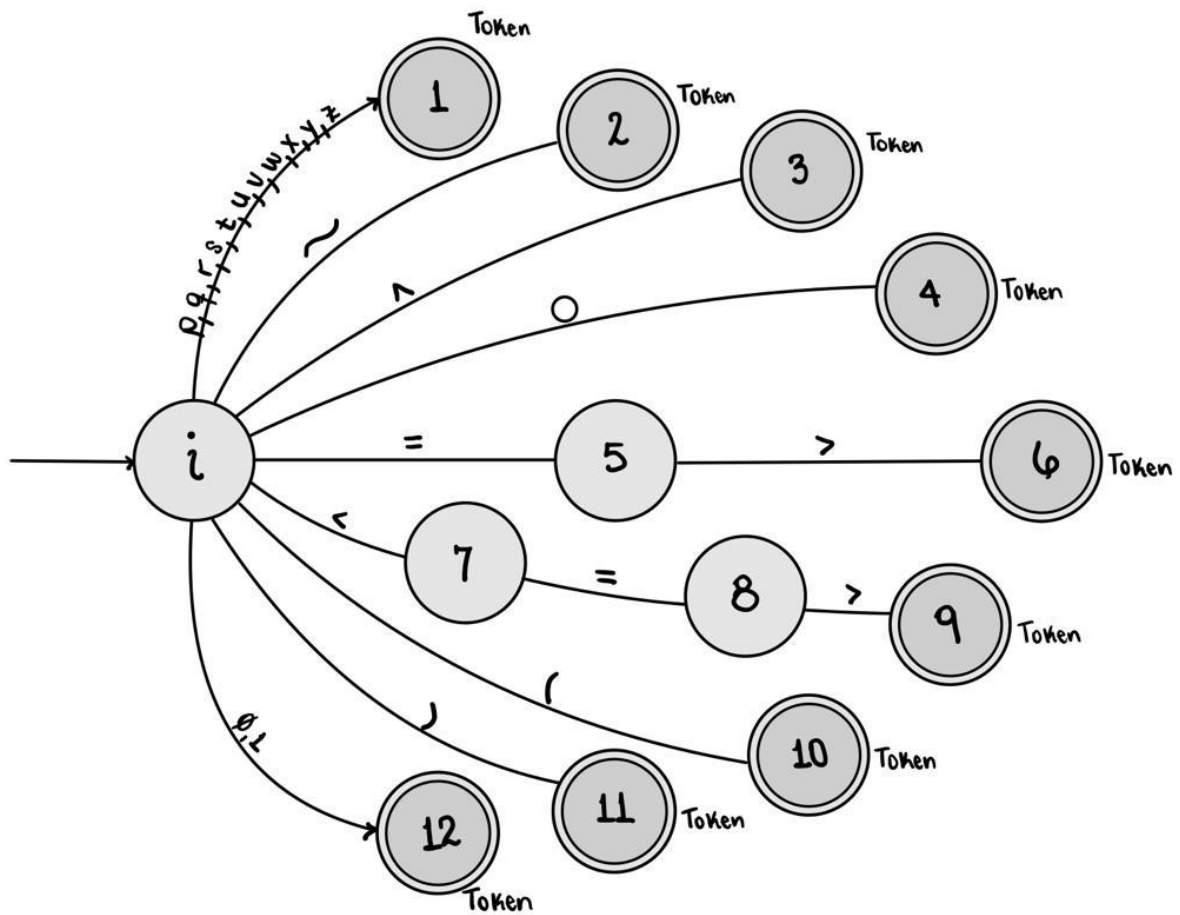


# Proyecto #1

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## Diagrama del AF del Sistema Axiomático L



$$M = (Q, \Sigma, S_0, f, F)$$

$$Q = \{i, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$$

$$\Sigma = \{p, q, r, s, t, u, v, w, x, y, z, \sim, \wedge, \circ, =, <, >, (, ), 0, 1, \backslash n\}$$

$$S_0 = i$$

$$F = \{1, 2, 3, 4, 6, 9, 10, 11, 12\}$$

## Gramática del Sistema Axiomático L

$G = (N, T, S_0, P)$

$N = \{\text{expression}\}$

$T = \{p, q, r, s, t, u, v, w, x, y, z, \sim, ^, o, \Rightarrow, \Leftrightarrow, (, ), 0, 1\}$

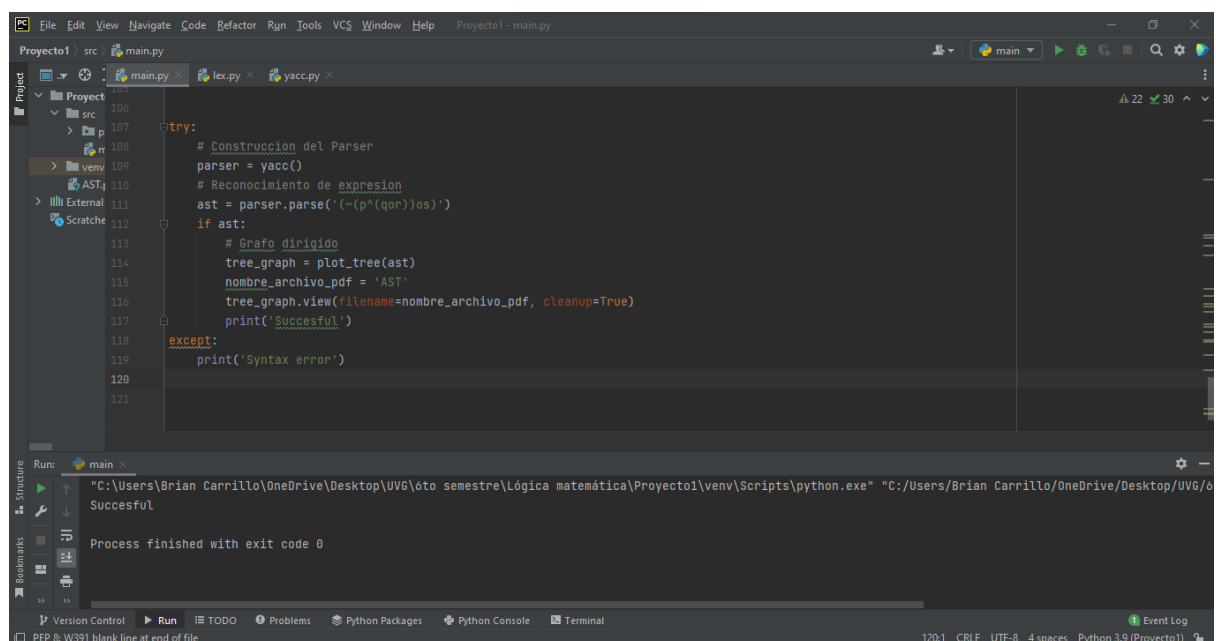
$S_0 = \text{expression}$

$P = \{$

```
expression  $\rightarrow$  expression ^ expression,  
expression  $\rightarrow$  expression o expression,  
expression  $\rightarrow$  expression  $\Rightarrow$  expression,  
expression  $\rightarrow$  expression  $\Leftrightarrow$  expression,  
expression  $\rightarrow$  (expression),  
expression  $\rightarrow$  ~expression,  
expression  $\rightarrow$  p,  
expression  $\rightarrow$  q,  
expression  $\rightarrow$  r,  
expression  $\rightarrow$  s,  
expression  $\rightarrow$  t,  
expression  $\rightarrow$  u,  
expression  $\rightarrow$  v,  
expression  $\rightarrow$  w,  
expression  $\rightarrow$  x,  
expression  $\rightarrow$  y,  
expression  $\rightarrow$  z,  
expression  $\rightarrow$  0,  
expression  $\rightarrow$  1
```

$\}$

## Ejemplo de reconocimiento de expresión



The screenshot shows a Python IDE with a file named `main.py` open. The code defines a parser using `yacc` and `lex` to recognize logical expressions. The expression being parsed is `~(p^(qor))os`. The parser successfully constructs a directed graph (AST) and prints 'Successful'. The output window shows the command executed and the exit code 0.

```
106  
107  
108 # Construccion del Parser  
109 parser = yacc()  
110 # Reconocimiento de expresion  
111 ast = parser.parse('~(p^(qor))os')  
112 if ast:  
113     # Grafo dirigido  
114     tree_graph = plot_tree(ast)  
115     nombre_archivo_pdf = 'AST'  
116     tree_graph.view(filename=nombre_archivo_pdf, cleanup=True)  
117     print('Successful')  
118 except:  
119     print('Syntax error')  
120  
121
```

Run: main ×  
"C:\Users\Brian Carrillo\OneDrive\Desktop\UVG\6to semestre\Lógica matemática\Proyecto1\venv\Scripts\python.exe" "C:/Users/Brian Carrillo/OneDrive/Desktop/UVG/6to semestre/Lógica matemática/Proyecto1/main.py"  
Successful  
Process finished with exit code 0

