

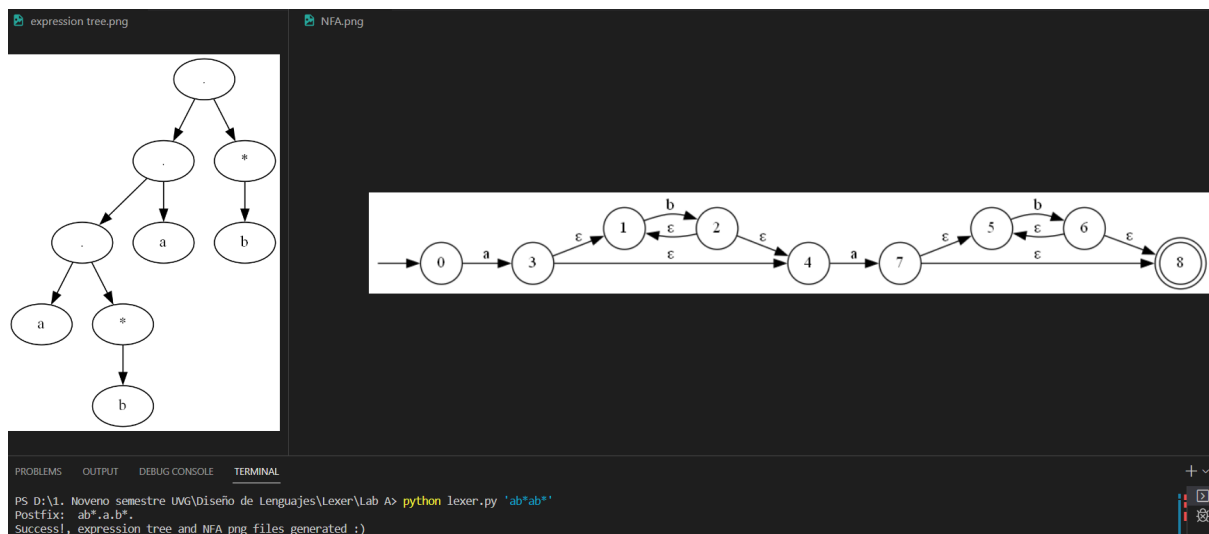
Prelaboratorio A

El prelaboratorio A lo realicé en Miro junto con Pablo Méndez, Diana Corado y Orlando Cabrera. Se encuentra en el siguiente enlace:

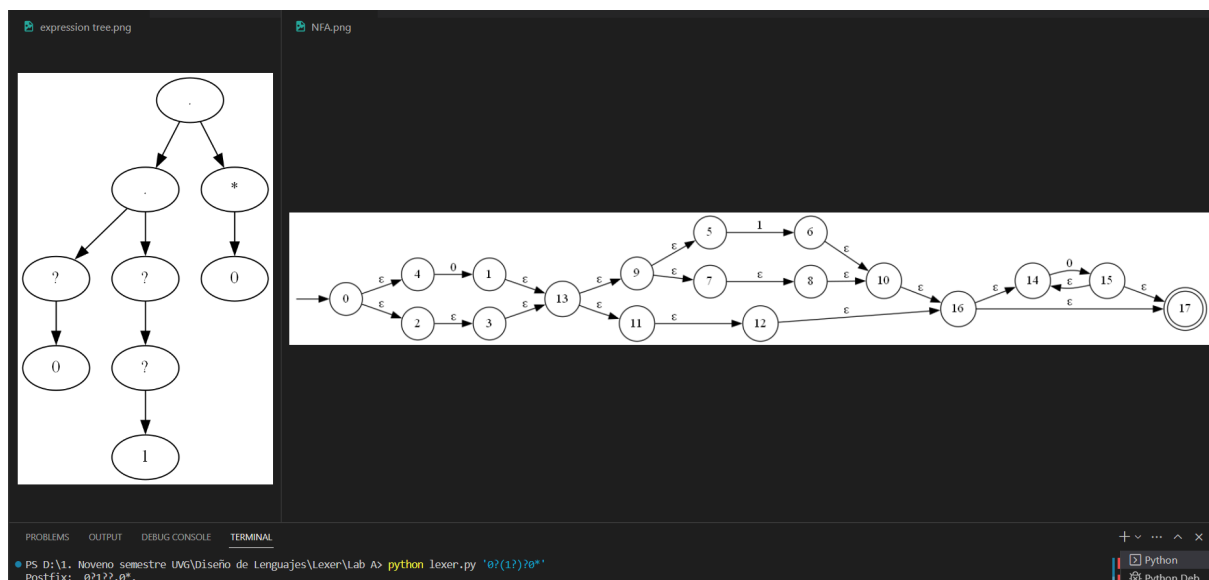
https://miro.com/app/board/uXjVPoZWADI=/?share_link_id=264061946011

Sin embargo realicé las pruebas de igual manera con mi programa:

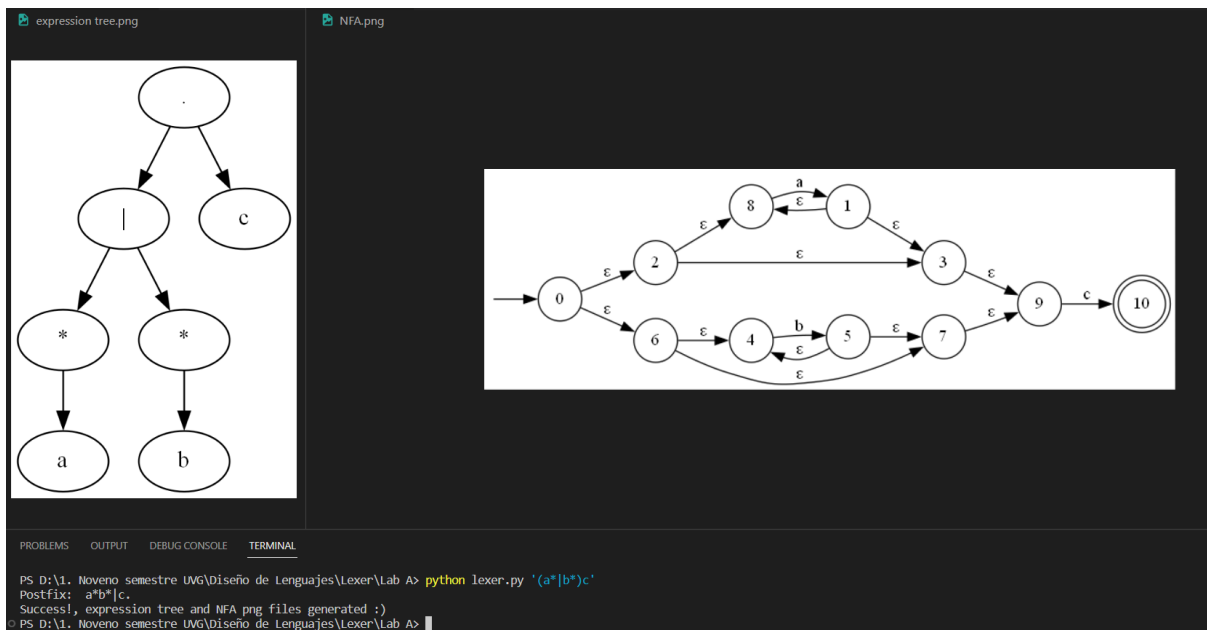
ab^*ab^*



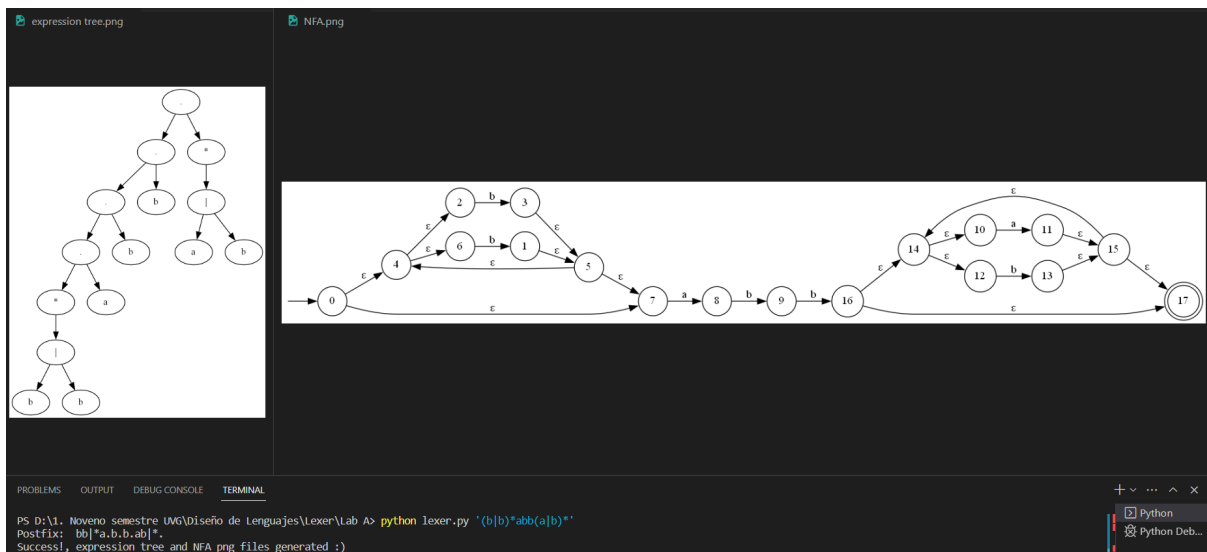
$0?(1?)?0^*$



$(a^*|b^*)c$



$(b|b)^*abb(a|b)^*$



[illegible]

The screenshot displays a software application with a dark theme, showing the process of generating an expression tree and an NFA from a regular expression.

Terminal Output:

```
PS D:\1. Noveno semestre UMG\Diseño de Lenguajes\Lexer\Lab A> python lexer.py '(a|b)*a(a|b)(a|b)'
Postfix: ab|*a.ab|.ab|.
Success!, expression tree and NFA png files generated :)
```

Expression Tree (Left): A tree structure representing the regular expression $(a|b)^*a(a|b)(a|b)$. The root node is an empty circle. Its left child is a circle containing $*$, and its right child is an empty circle. The $*$ node has a single child, a circle containing $|$. This $|$ node has two children, circles containing a and b . The empty circle under the root has three children: an empty circle, a circle containing $|$, and a circle containing a . The empty circle under this $|$ node has two children: a circle containing a and a circle containing $|$. The circle containing $|$ under this node has two children: a circle containing a and a circle containing b .

NFA (Right): A state transition diagram with 19 states (0 to 18). State 0 is the start state, and state 18 is the final state (double circle). Transitions are labeled with a , b , or ϵ . The NFA represents the regular expression $(a|b)^*a(a|b)(a|b)$. The transitions are as follows:

- 0 to 4 (ϵ), 0 to 7 (ϵ)
- 4 to 2 (ϵ), 4 to 6 (ϵ)
- 2 to 3 (b), 3 to 5 (ϵ)
- 6 to 1 (a), 1 to 5 (ϵ)
- 5 to 7 (ϵ)
- 7 to 12 (a)
- 12 to 8 (ϵ), 12 to 10 (ϵ)
- 8 to 9 (a), 9 to 17 (ϵ)
- 10 to 11 (b), 11 to 17 (ϵ)
- 17 to 13 (ϵ), 17 to 15 (ϵ)
- 13 to 14 (a), 14 to 18 (ϵ)
- 15 to 16 (b), 16 to 18 (ϵ)