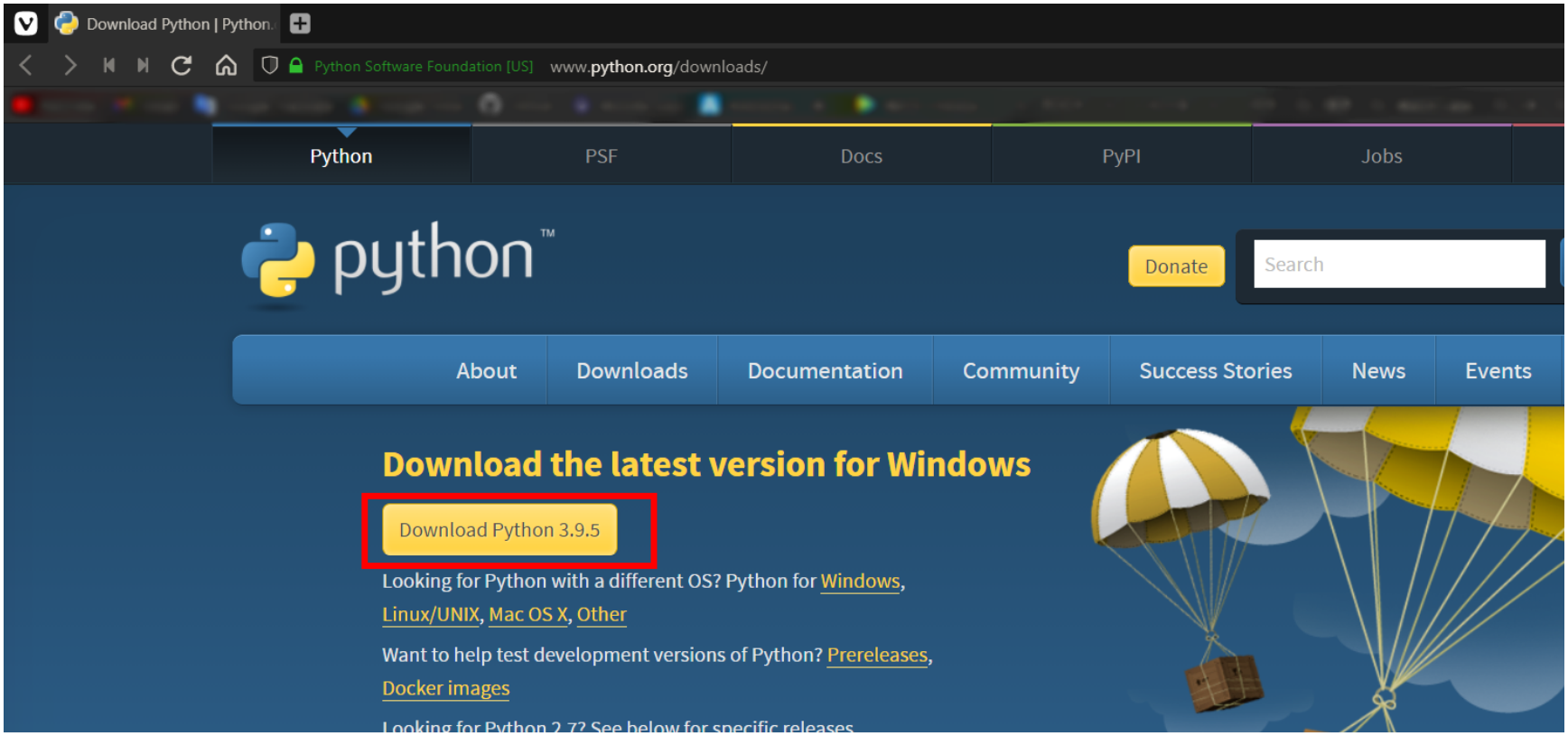
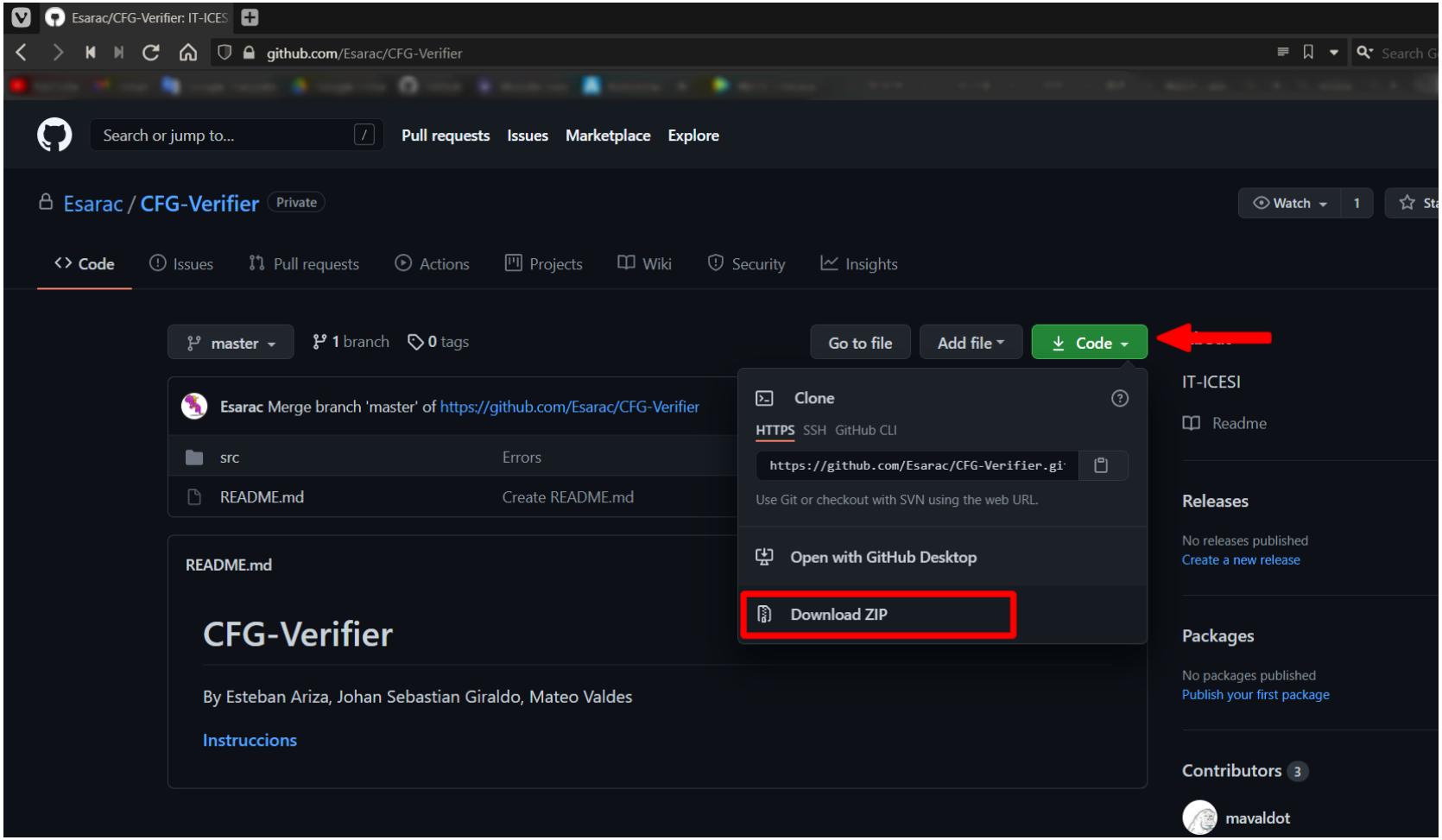
CFG-VERIFIER

By Esteban Ariza, Johan Sebastian Giraldo, Mateo Valdes

Step 1: Install Python here if you do not have it.



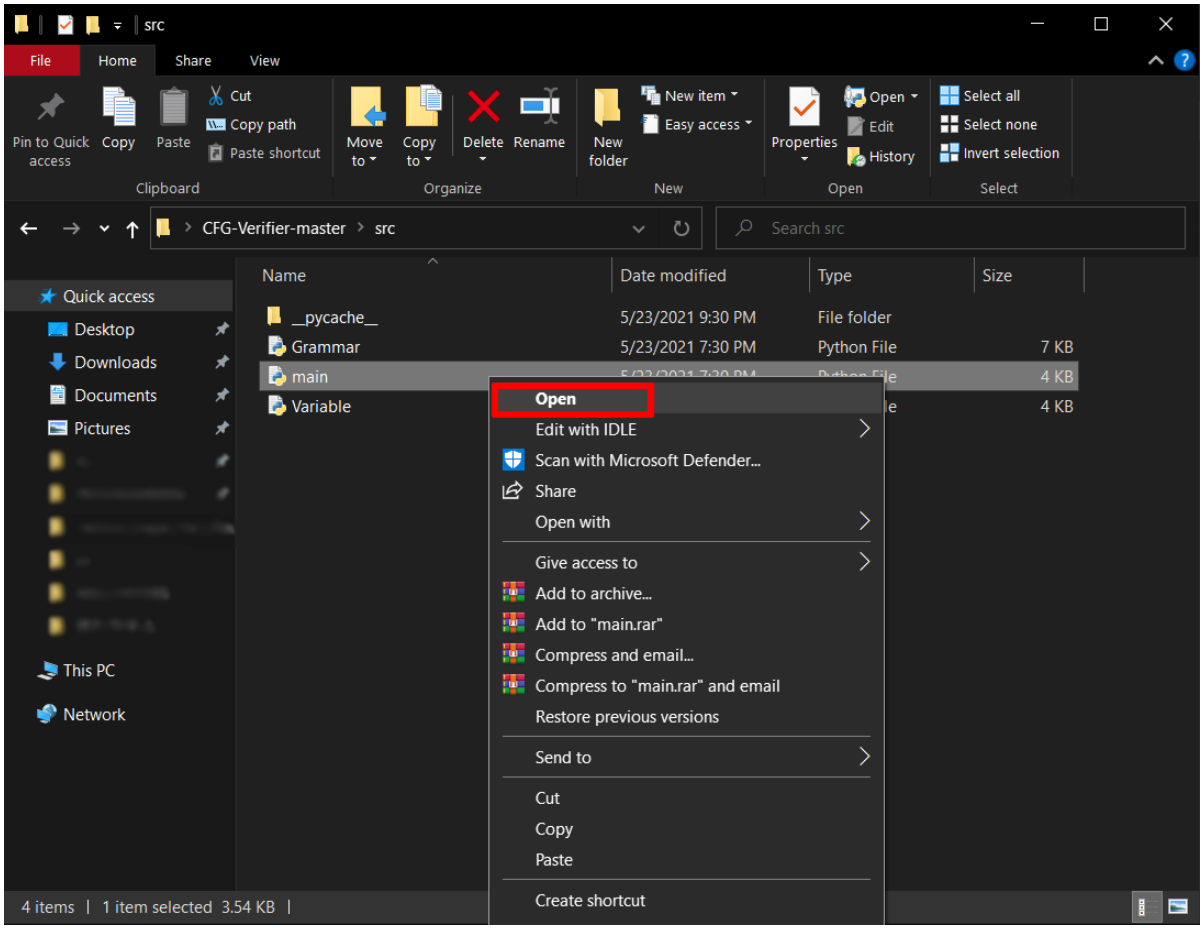
Step 2: Go to https://github.com/Esarac/CFG-Verifier and click on Code → Download ZIP.



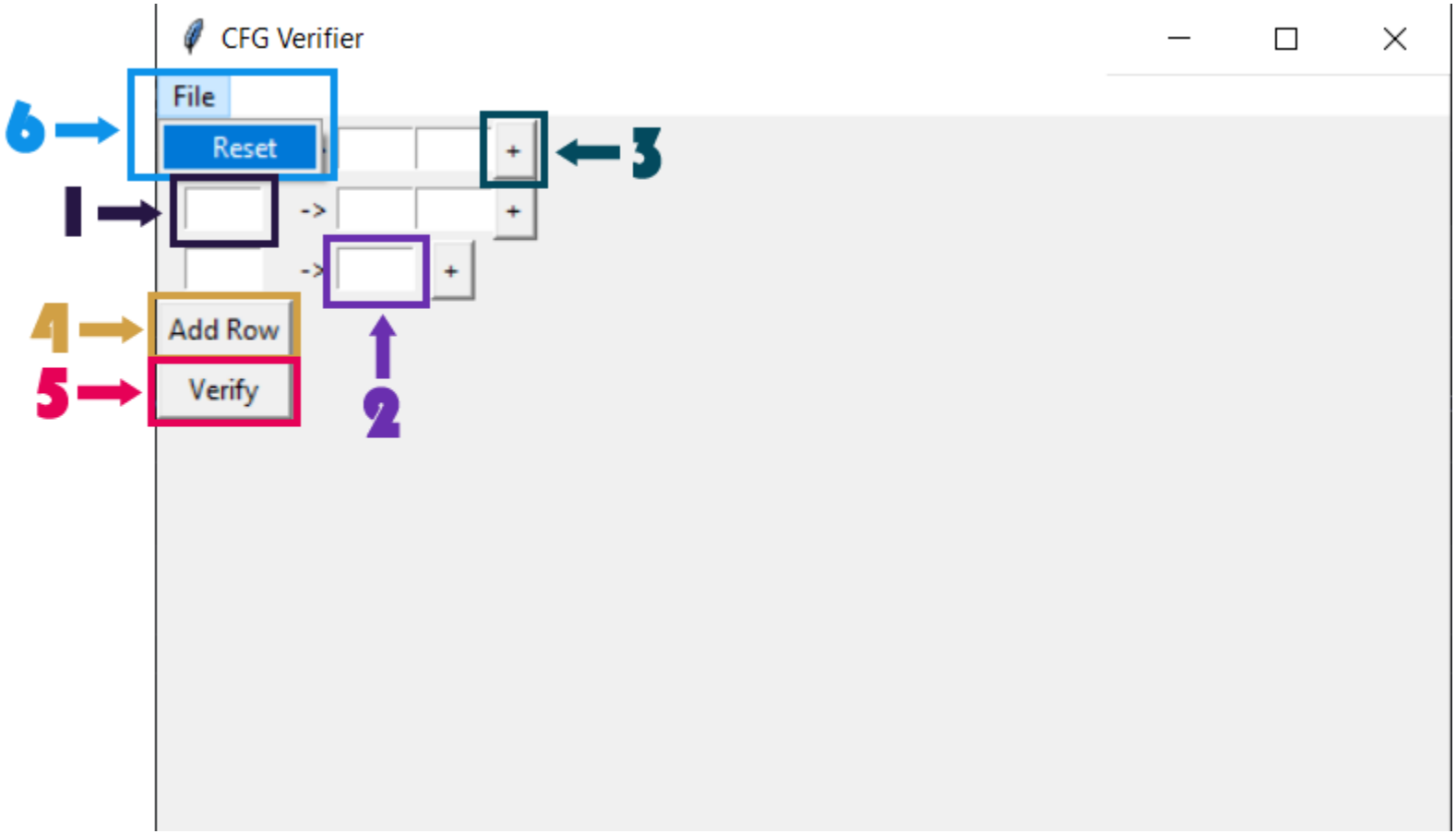
Step 3: Extract the ZIP file, open the extracted folder and follow this path: “CFG-Verifier-master/src”.

Step 4: In the "src" folder, open the file “main.py”

Note: You can either open it by just double-clicking on it or by right-clicking on it → open.



Components of the program:



(1) Variable field: Use this field to enter a variable of a grammar in CNF:

Note: You cannot let this field empty. Any input must be in uppercase (“S” is accepted, “s” is not accepted).

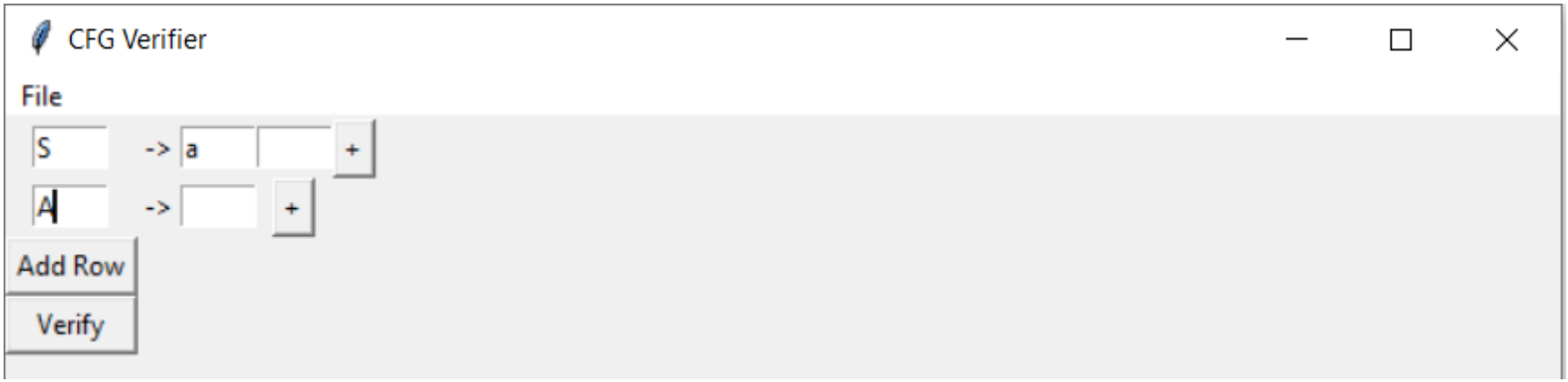
(2) Production rule field: Use this field to enter the production rules of a variable:

Note: An empty field represent λ, to enter λ add a field and let it empty.

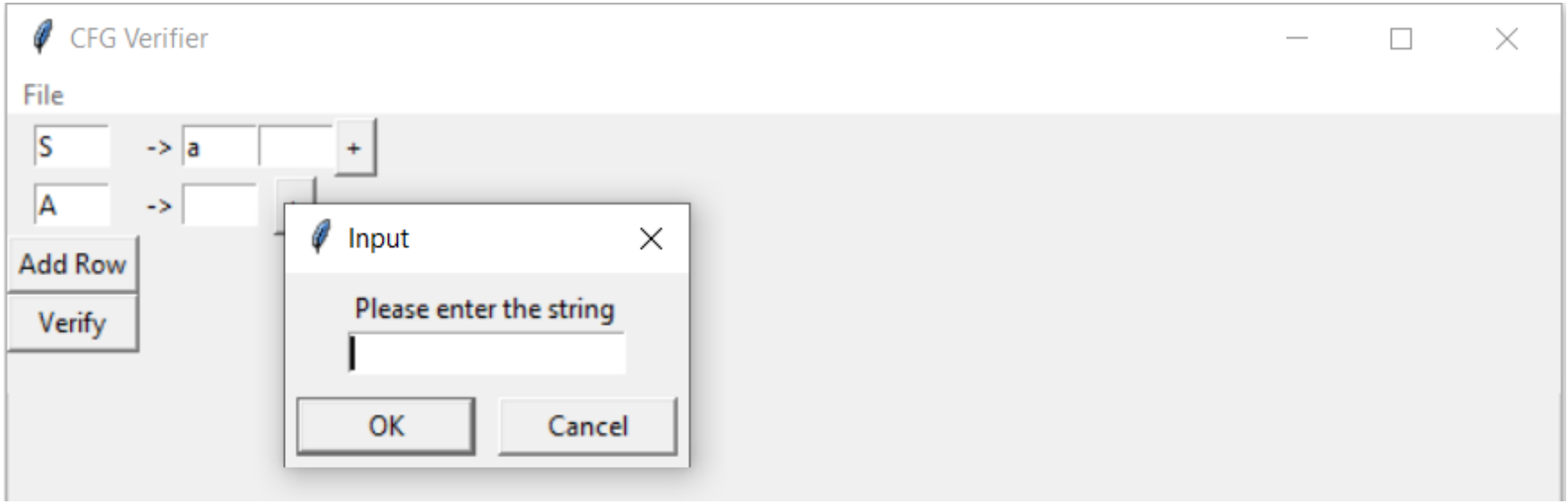
Note 2: You cannot enter a string with a length greater than 2 in a production rule field (A grammar in CNF cannot have a variable with a production rule that has more than 2 symbols).

(3) Add field button: Use this button to add a production rule field for a variable:

(4) Add row button: Use this button to add a row and enter another variable:



(5) Verify button: Use this button to enter a string and check if it can be produced by the grammar:



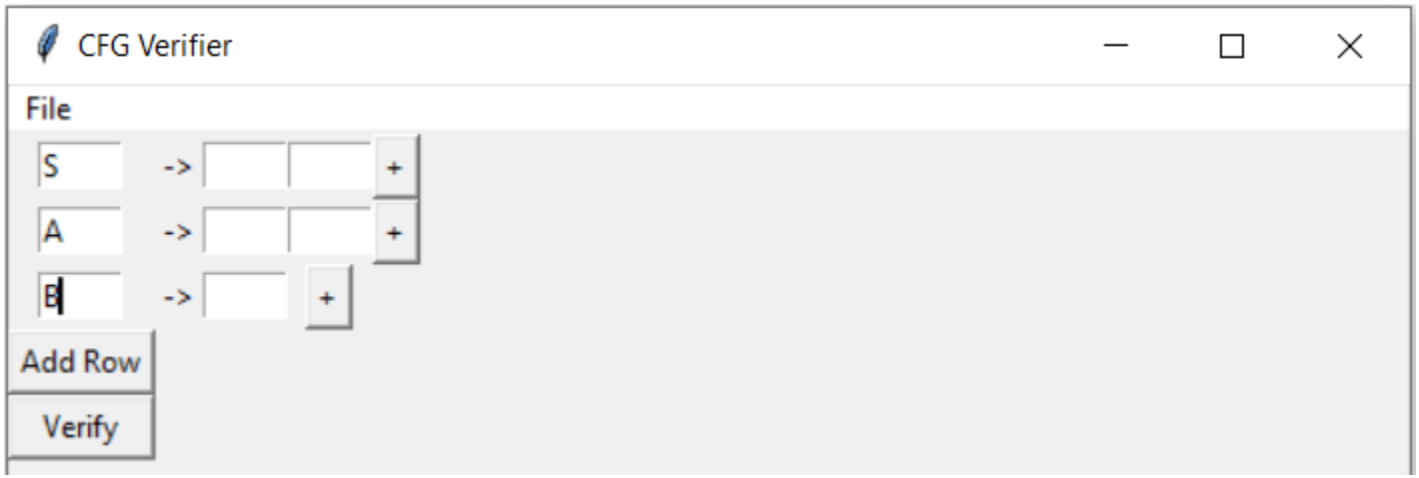
(6) Reset button: Use this button to reset the program to enter a new grammar:

How to use the program:

Given a grammar in **CNF**:

$S \ --> \ AB \mid BA \mid \lambda$
$A \ --> \ AB \mid a$
$B \ --> \ b$

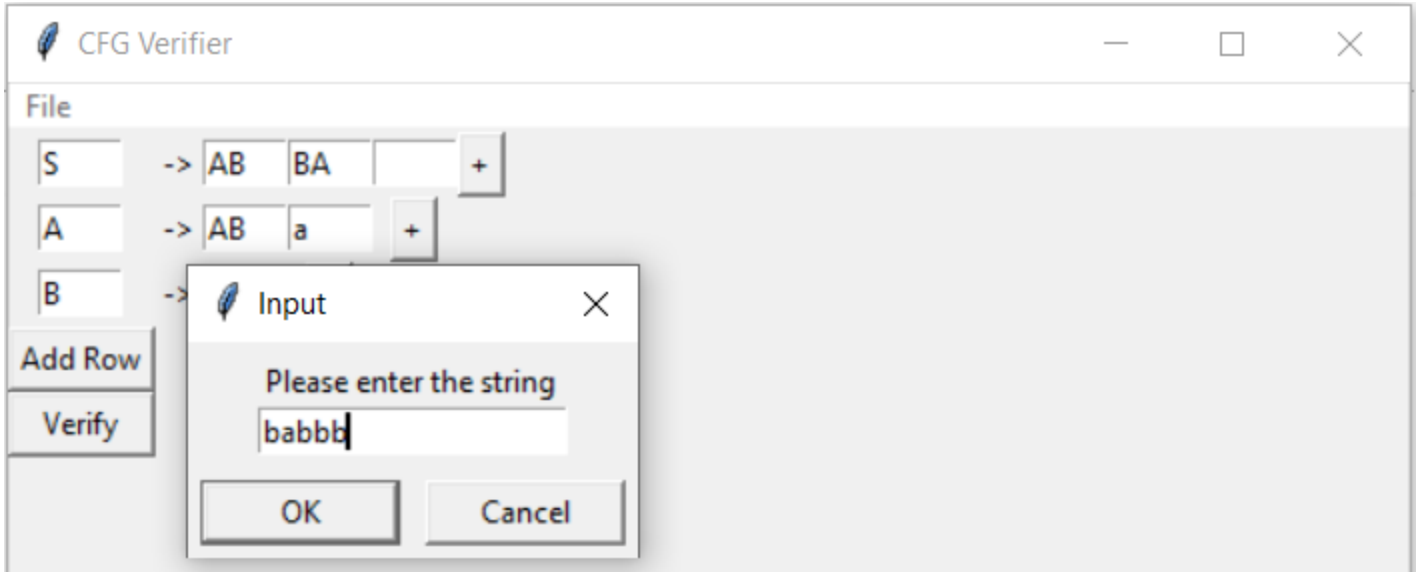
Use component **(1) Variable field** and **(4) Add row button** to enter the variables S, A and B:



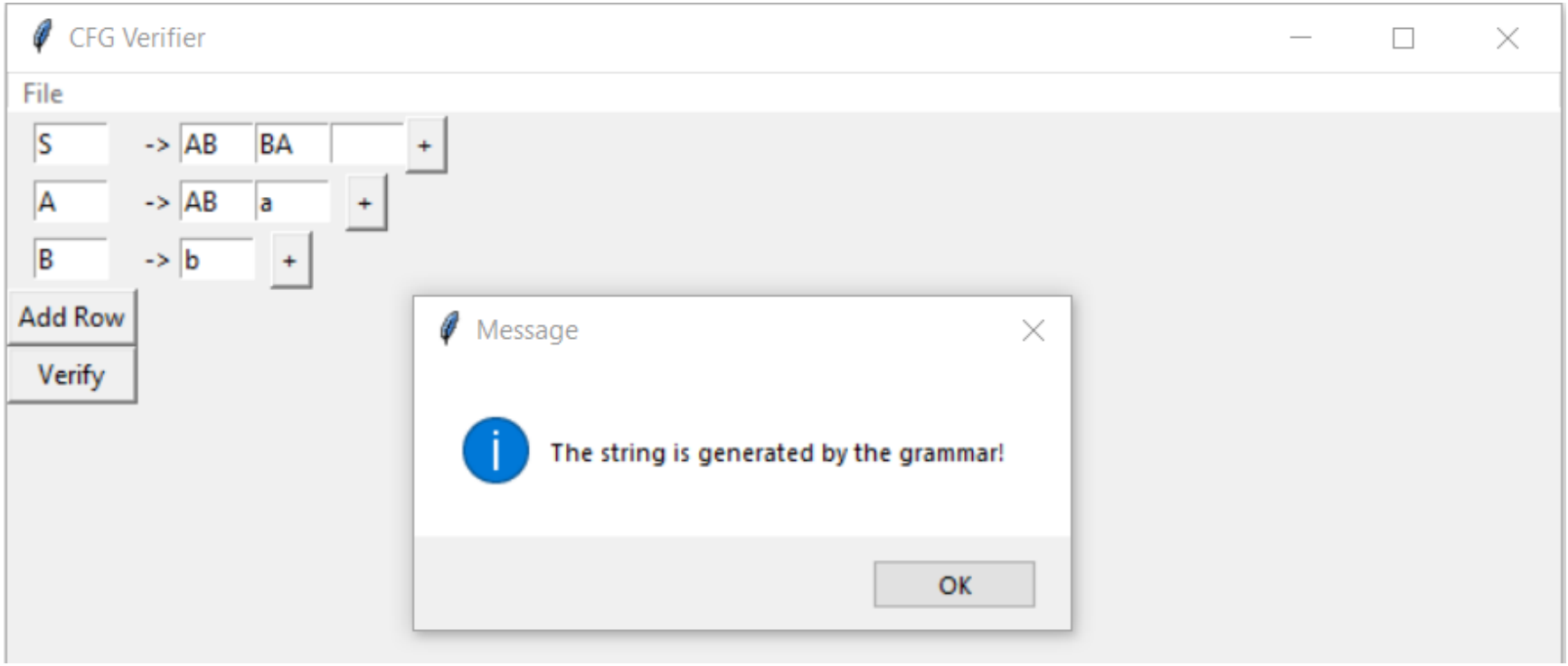
Use component **(2) Production rule field** and **(3) Add field button** to introduce the production rules of each variable:

Note: Remember, to introduce λ add a field and let it empty.

Use component **(5) Verify button** and enter the string you want to verify:



Finally, click on “OK” and you should see a message like this:


CFG Verifier
File
S -> AB BA +
A -> AB a +
B -> b +
Add Row
Verify
Message
The string is generated by the grammar!
OK