

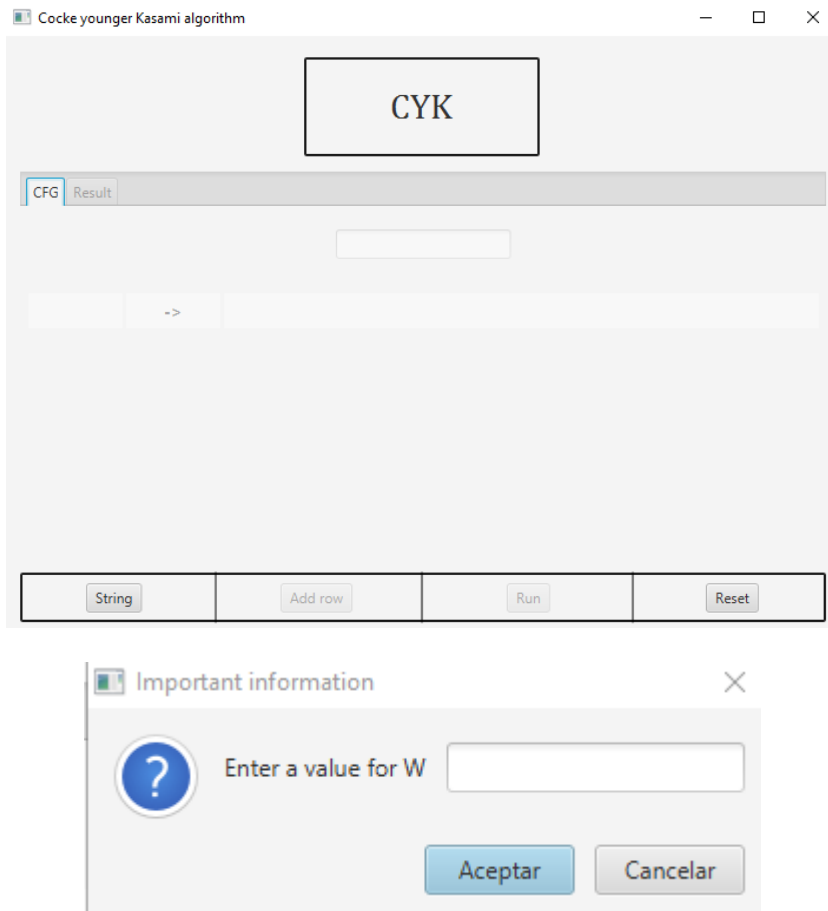


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*Instruction Manual*

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1. Click on the "String" button, type the grammar you want to validate in the system (without any separator [everything must be together]) and select the "Accept" option.
  2. Once we have completed the previous step, we proceed to add the grammar productions to the system. Therefore, we press the "Add row" button in order to add the number of rows corresponding to the number of productions of the grammar. At this point it's specified that the left part corresponds to the name of the variables, and the right part to the productions of the variables.
    - If you want to separate productions, you must do it with the "|" symbol. An example is shown below.
  3. When you have all the productions ready, press the "Run" button and the system will automatically display the result of the calculation. In addition, it will inform you if the grammar is able to be generated or not by the productions.
  4. Once you have tested the program, if you want to do it again, just press the "reset" button to clear all the information and start again with the above process.

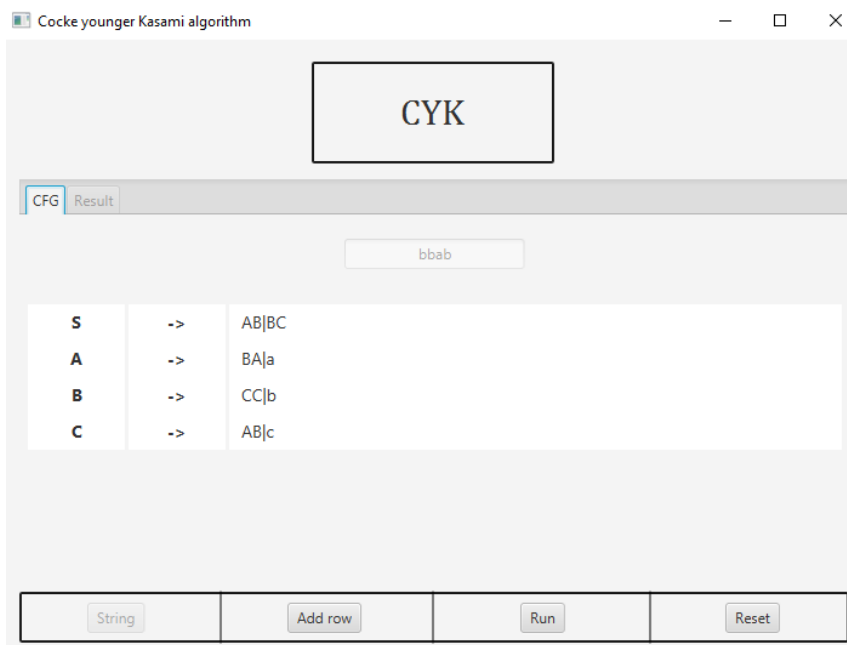
<p>It is important to emphasize that the program is built in such a way that step by step it will guide the user through the process to be carried out in order to have a correct operation of the software. However, an example of how to follow each step is shown below:</p>
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To start the example, let's note the system screen, which is composed of the buttons that will be enabled throughout the process.

Taking this into account, we proceed to press the String button to add the grammar  $W$  that we want to validate. We write it without any space or separator character and continue with the process.

In this case, we will have the string  $W$  formed by "bbab" (it will be displayed in the next step).



As we already have the  $W$  chain ready in the system, we proceed to add the productions. Therefore, we press the "Add row" button to add the number of rows corresponding to the number of productions of the  $W$  chain. As mentioned before, in the left part we will put the variables, and in the right part the productions, that in the case that it is required to separate them, the symbol "|" will be used.

Cocke younger Kasami algorithm

CYK

CFG

Result

The input string is generated by the GIC

	j= 1	j= 2	j= 3	j= 4
i= 1	{B}	{}	{A}	{S,C}
i= 2	{B}	{A}	{S,C}	
i= 3	{A}	{S,C}		
i= 4	{B}			

String

Add row

Run

Reset

Once the productions have been added, press the "Run" button and the system will display the response of the calculation performed by the CYK algorithm.

In this case, as we can see on the screen, the string is generated by the productions. But, in the case that it is not generated, it will display the information corresponding to that case.

Once the process is finished, the "reset" button will reset the system and clear the data to start the process again if required. In addition, it is important to note that this button will always be enabled in case the user makes a mistake and writes something wrong.

Finally, to avoid any kind of damage to the system, the program will not continue with its programmed process when the user doesn't perform the corresponding steps correctly (if this happens, it's recommended to press the reset button and start again the validation of its functionalities). With this in mind, we hope that this implementation is to your liking.

# CYK