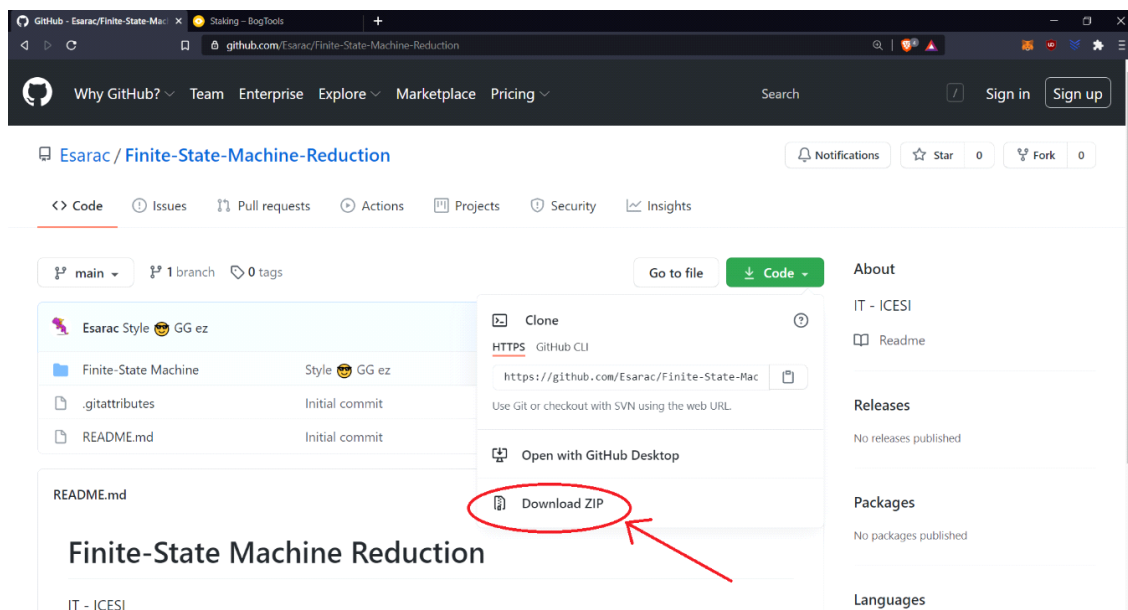


FINITE-STATE MACHINE REDUCTION

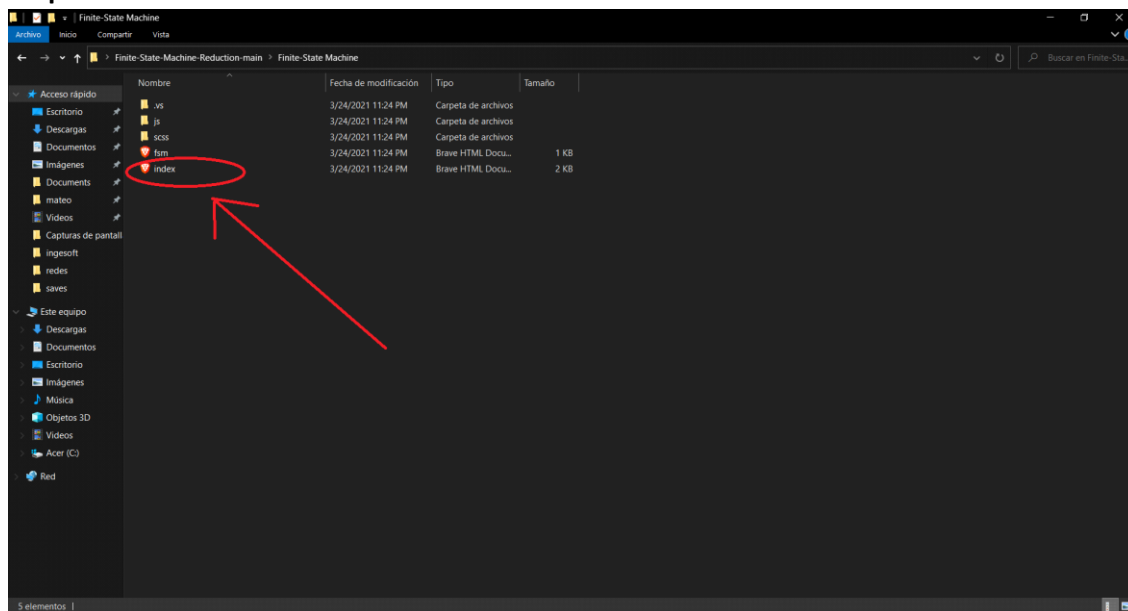
By Esteban Ariza, Mateo Valdes & Johan Sebastián Giraldo

Step 1: Go to <https://github.com/Esarac/Finite-State-Machine-Reduction> and click on “Download ZIP”

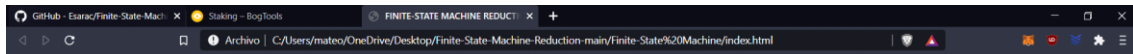


Step 2: Extract the ZIP file and open the folder called “Finite-State Machine”

Step 3: Click on the index.html file.



Step 4: Your web browser should open with the following page:



FINITE-STATE MACHINE REDUCTION

State #

Alphabet #

Machine:
☐ Mealy
☐ Moore

Here is an explanation:

FINITE-STATE MACHINE REDUCTION

State # ①

Alphabet # ②

Machine:
☐ Mealy ③
☐ Moore

④

1.

State #: The number of states in the finite state machine

2. Alphabet #: The number of elements in the finite-state machine's input alphabet

3. Type of machine: The finite-state machine can be either a Mealy machine or a Moore machine.

- The Moore machine's output is determined by its current state.
- The Mealy machine's output is determined by both its current state and current input.

4. Create table: Once you enter all the information, click this button to create the table!

Moore machine:

If you are creating a Moore machine, you should see something like this:

States	a	b	c	d	Outputs
q0	0	0	0	0	0
q1	0	0	0	0	0
q2	0	0	0	0	0
q3	0	0	0	0	0

> REDUCE MACHINE

Here is an explanation:

States	a	b	c	d	Outputs
q0	0	0	0	0	0
q1	0	0	0	0	0
q2	0	0	0	0	0
q3	0	0	0	0	0

> REDUCE MACHINE

1 2 3 4

- The states: These are the states of the machine (q0 is the initial state)
- The transition: Each column represents an input, and each cell represents the state where the machine will go given that particular input. Must be a non-negative integer (0 represents q0, 1 represents q1, 2 represents q2, etc.)
- The output: The output associated with the current state
- Once you have entered all the data, click this button to reduce the Moore machine

Example:

States	a	b	c	d	Outputs
q0	1	1	1	1	a
q1	0	1	0	0	b
q2	2	1	2	0	c
q3	0	0	0	0	a

> REDUCE MACHINE

States	a	b	c	d	Outputs
q0	1	1	1	1	a
q1	0	1	0	0	b

Mealy machine:

If you are creating a Moore machine, you should see something like this:

States	a	b	c	d
q0	0 0	0 0	0 0	0 0
q1	0 0	0 0	0 0	0 0
q2	0 0	0 0	0 0	0 0
q3	0 0	0 0	0 0	0 0

> REDUCE MACHINE

Here is an explanation:

States	a	b	c	d
q0	0 0	0 0	0 0	0 0
q1	0 0	0 0	0 0	0 0
q2	0 0	0 0	0 0	0 0
q3	0 0	0 0	0 0	0 0

1

> REDUCE MACHINE

2

3

- The states: These are the states of the machine (q0 is the initial state)
- The transition and output: Each column is divided into two. The left part represents the state where the machine will go given that particular input. The right part represents the output given the current state and current input.
- Once you have entered all the data, click this button to reduce the Mealy machine

Example:

States	a		b		c		d	
q0	1	b	0	b	1	b	0	b
q1	1	a	1	a	0	c	3	c
q2	2	b	1	c	3	a	2	c
q3	0	b	0	b	0	b	0	b

> REDUCE MACHINE

States	a	b	c	d
q0	2,b	0,b	2,b	0,b
q1	0,b	0,b	0,b	0,b
q2	2,a	2,a	0,c	1,c