Instruction Manual for Simon

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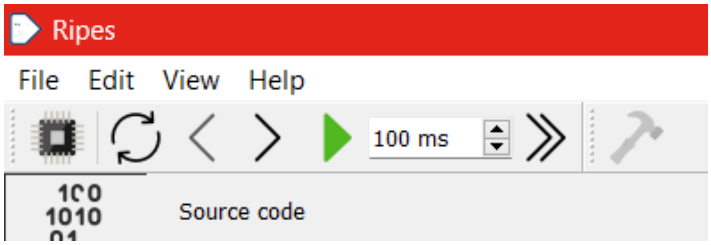
About Simon:

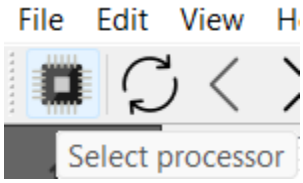
Simon is a game that tests your memory. Memorize a sequence of lights flashing, and repeat the sequence back, with the sequence getting longer and longer the more you play. Each sequence is randomly generated, ensuring that no two games of Simon will be alike. How long can you last in the game of Simon?

Setting up the game for the first time:

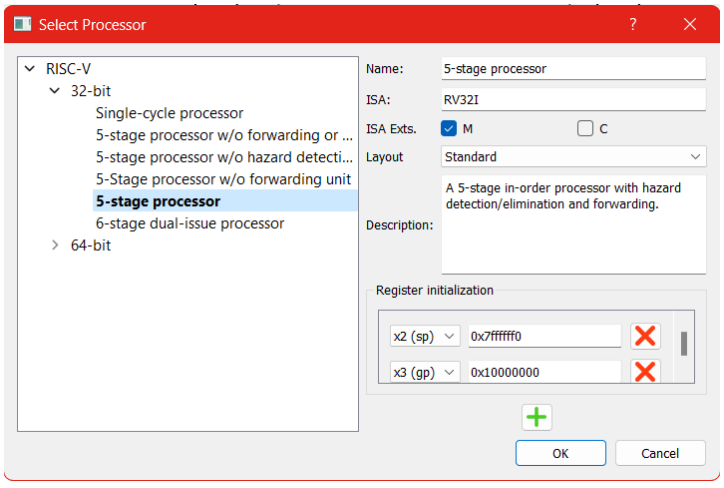
Once RIPES and the Simon program instructions are installed, launch RIPES. Once RIPES has launched, you will see a toolbar at the top of the screen (see below).



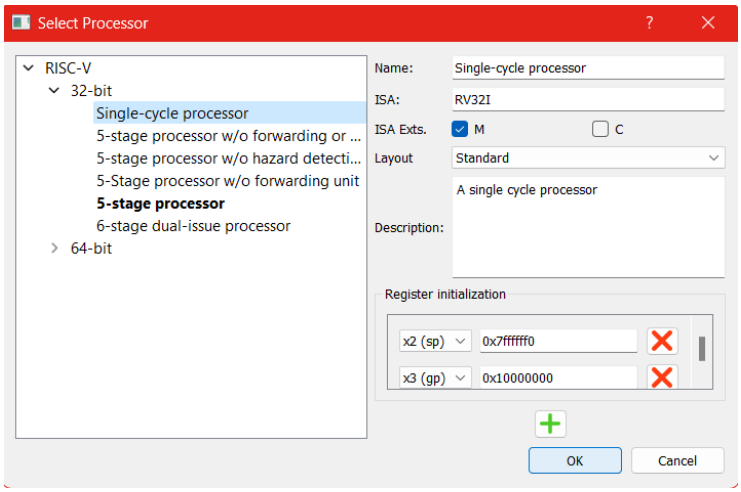
Navigate over to the toolbar. There is a select processor button, as you can see in the image below. Click on this button.



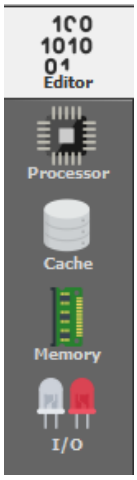
After you click on the “Select processor” button, a menu will appear in the center of your screen (see below)



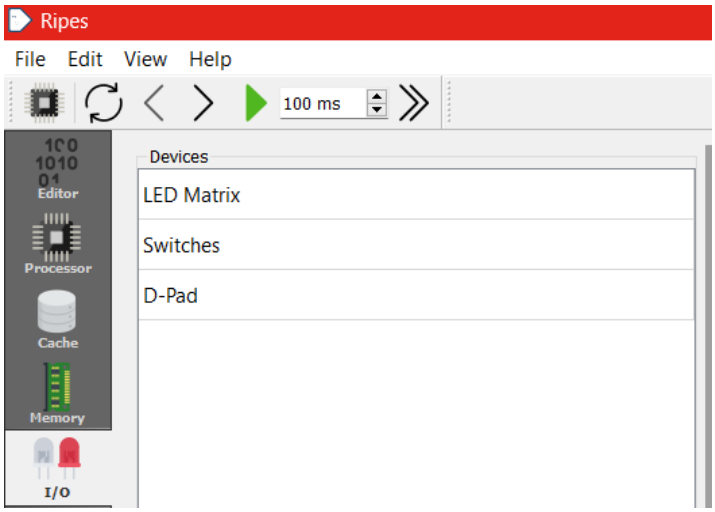
Under the “32 bit” options, select “Single-cycle processor”. Then, click on “Ok” (see below).



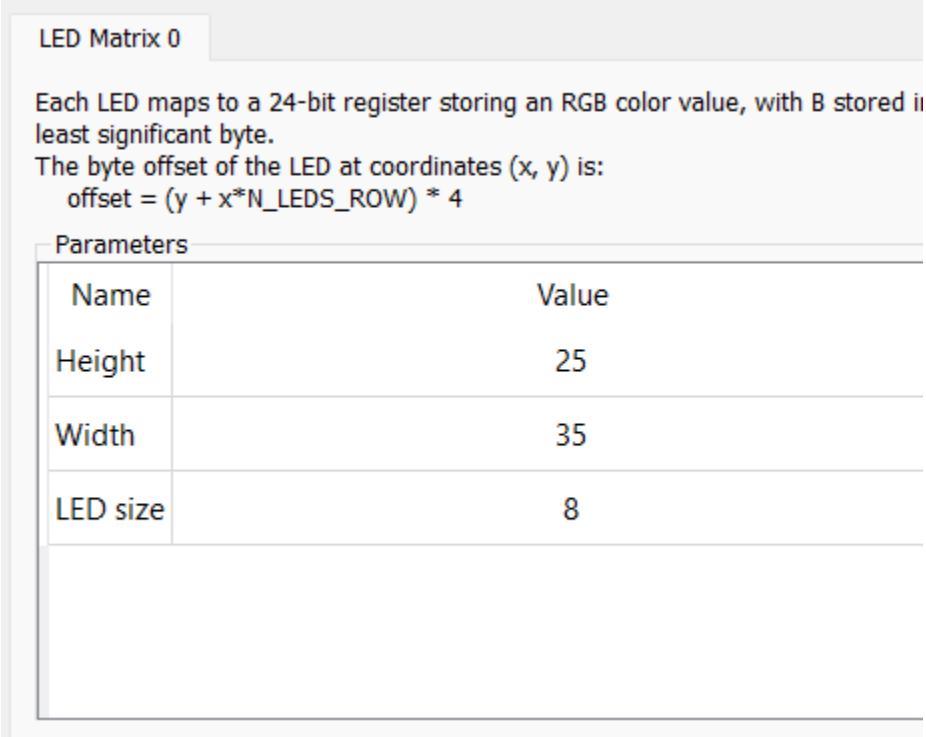
This has finished setting up your processor. Next up, we need to set up the LED's and the d-pad. Using the side toolbar (seen below), navigate over to where it says "I/O", and click on the I/O button.



Afterwards, the top left corner of your screen should look something like this:

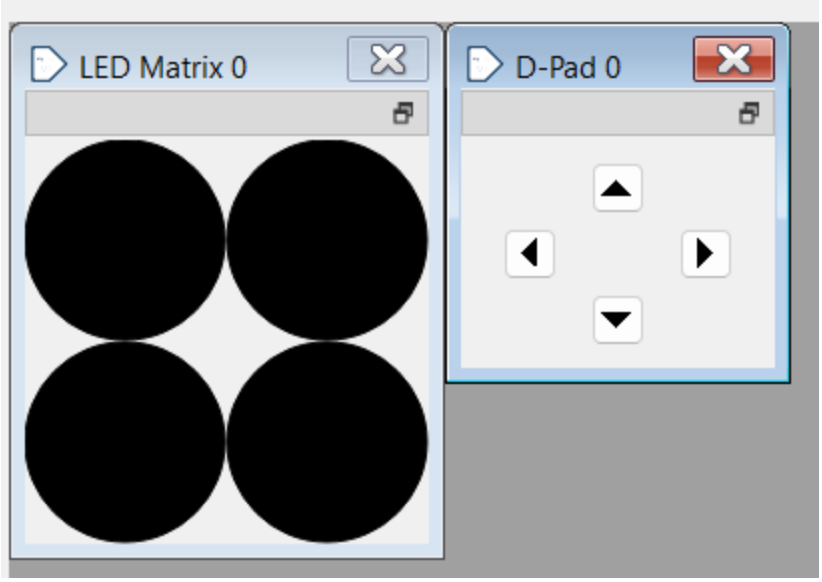


Use your mouse and double click on where it says “LED Matrix”. A window should pop up labeled “LED Matrix 0”. If any other pop up, close them by clicking on the “X” in the top right corner of the windows. On the right side of your screen, you should see a menu (see below).

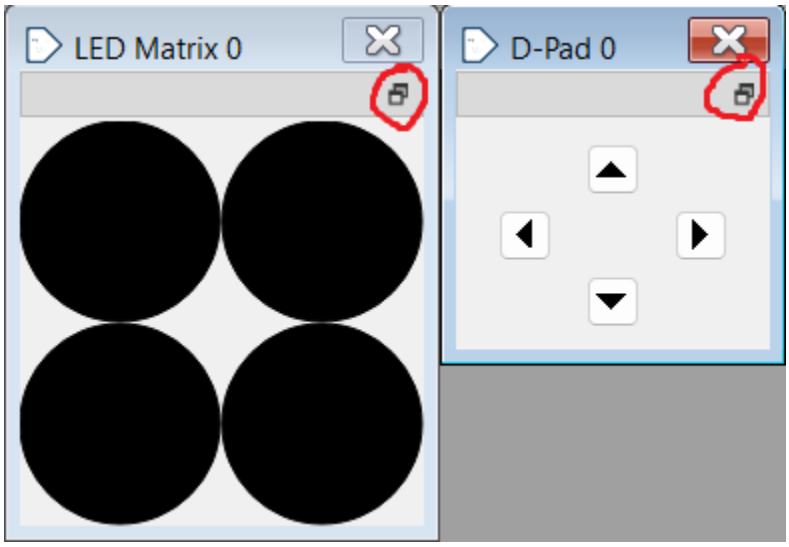


Here, you will need to change a couple of the parameters. Under value, for height double click on the 25. Delete the 25, and change the value to 2 using your keyboard. Similarly, for width, double click on the 35 and delete it. Change its value to 2 as well. Lastly for LED size, double click on the 8 and set it to some other value. We recommend anything between 75 and 100. Afterwards, your menu and LED matrix should look something like this:

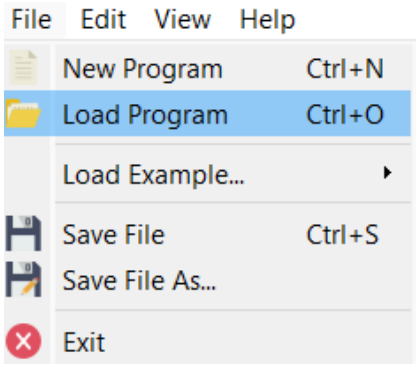
Next up, head back over to the left side of the screen, and right below where you clicked on “LED matrix”, double click on “D-pad”. Another menu should come up labeled “D-pad 0”. No other set up for the D-pad needs to be done. After all this, your LED matrix and d-pad should look something like this:



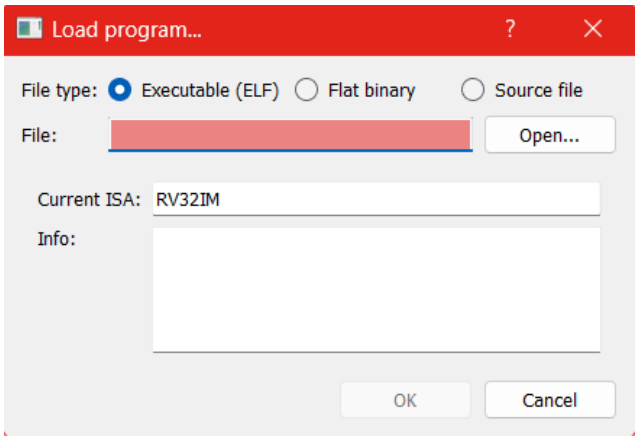
For a final step here, you can press the small button near the top of the windows on both the LED's and the d-pad. This will allow you to change screens while still having the LED's and d-pad visible. The button can be seen circled in red below.



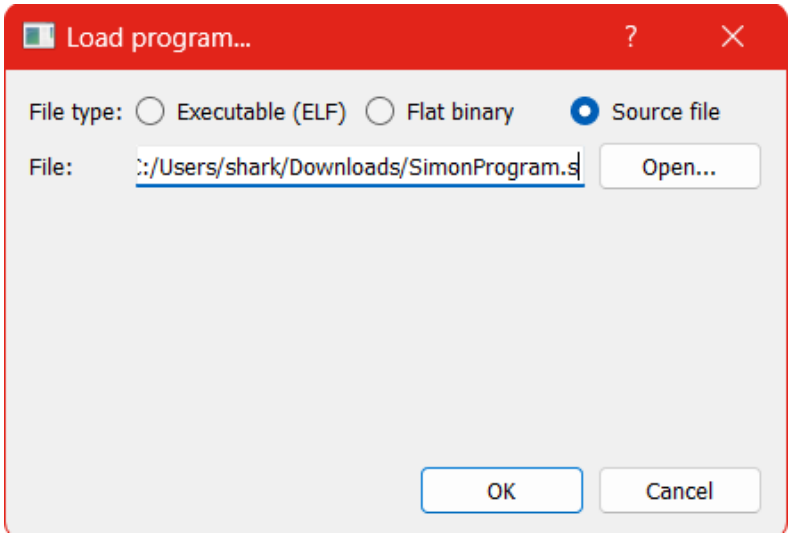
Lastly, you need to load the game's instructions. Navigate back over to the top left of the screen where the toolbar is to where it says "File" (right above the "Select processor" button). From here, using your mouse, click on "File". A dropdown menu will appear. From here, you should click on "Load Program". Attached below is an image showing what the menu should look like after you click on "File"and hover your mouse over "Load Program":



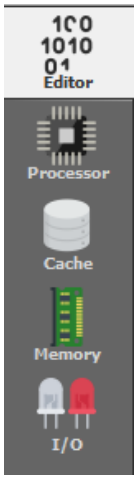
After you click on “Load Program”, another menu will appear in the center of your screen (see below).



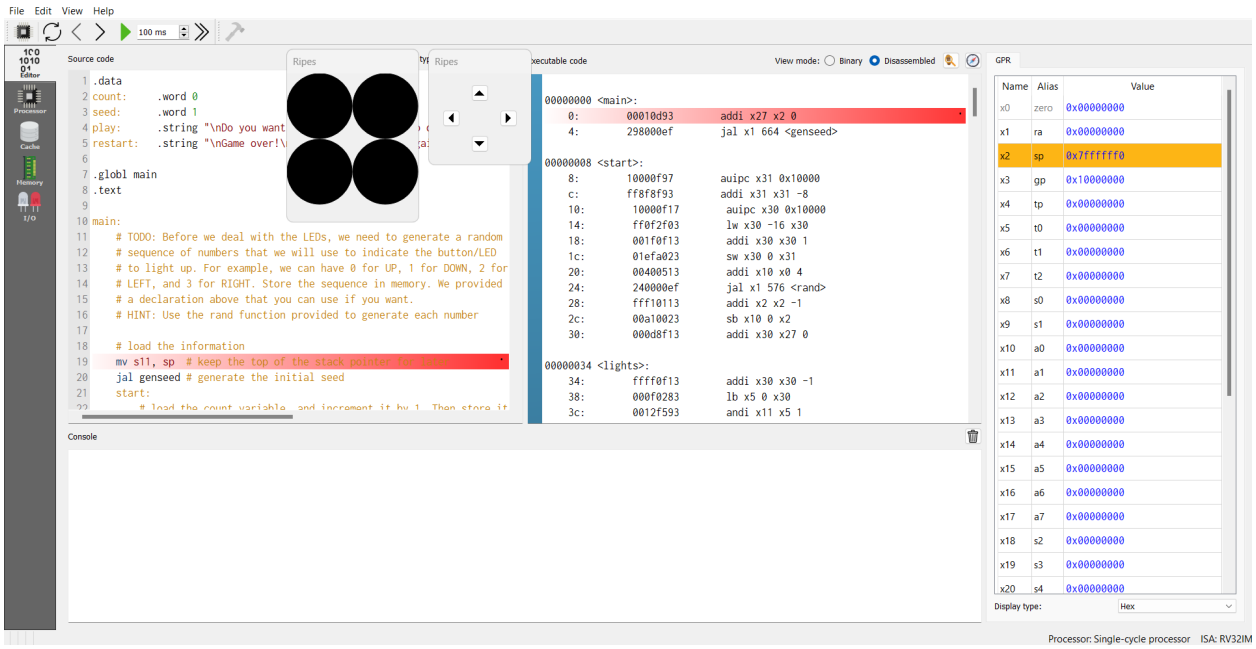
Click on the circle right next to “Source file”. After this, click on the “Open…” button, and navigate to where you had installed the Simon program instructions. Once you have found the location, simply click on the “SimonInstructions.s” file, and then click “Open”. Your menu should look similar to the image below when you have finished. In this example, the Simon program instructions were installed in the Downloads fold



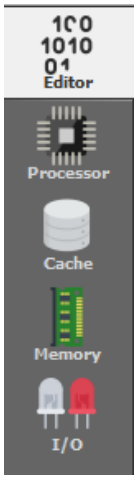
Press “Ok” to finish loading the program. Lastly, navigate over to the side bar, and click on where it says “Editor”.



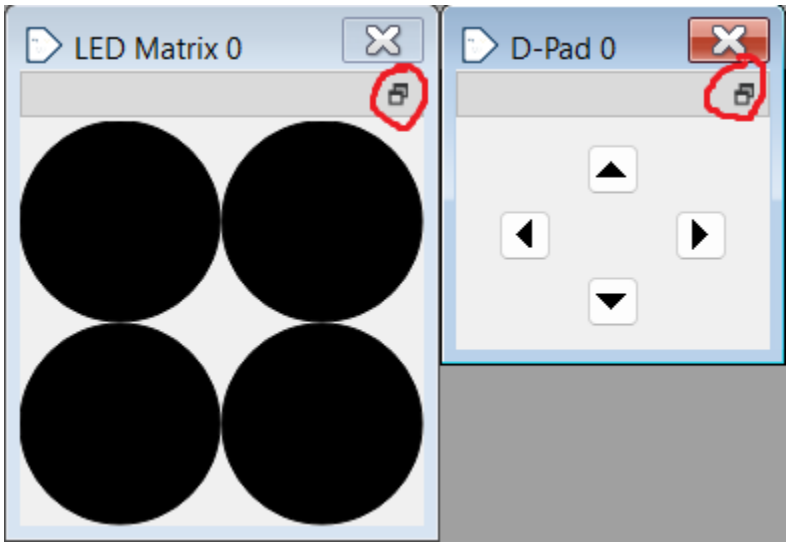
You have now finished setting up the game and can begin playing. Here is what your screen should look like if you followed all of the steps:



Setting the game up for subsequent games:
After launching RIPES, navigate to the side bar, and click on “I/O” (see below).



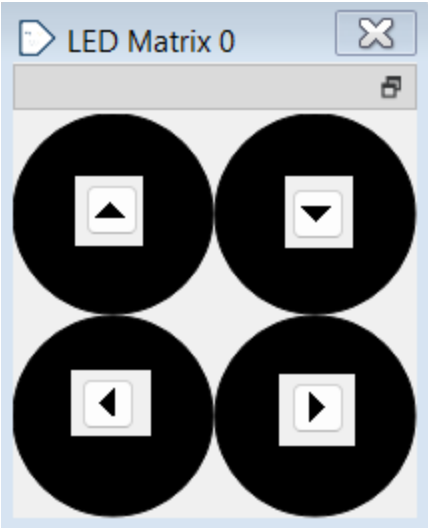
Then, navigate over to the LED matrix and d-pad windows and click on the small button in the top right corner of the windows (see below).



Then, go back over to your sidebar, and click on “Editor”. The game is now ready to play.

If something appears to be missing or the SimonGame isn’t running, check the Troubleshooting section at the end of this manual.

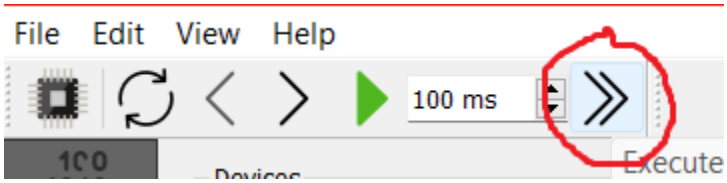
Controls:
Each button on the d-pad corresponds to a different LED. The up button maps to the top left LED, the down button maps to the top right LED, the left button maps to the bottom left LED, and the right button maps to the bottom right LED. The image below shows the mapping as well, where each LED has its corresponding button overlaid.



Additionally, you will see messages appear in the console. The console is at the very bottom middle of your screen.

How to play:

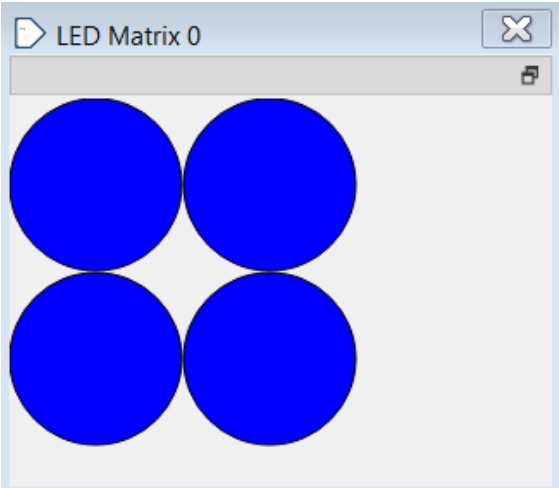
Simon is a memory based game. Each round, the LED's flash is a specific sequence, and after the sequence has ended, it is your job to use the d-pad to match that sequence. To start the game, press the “Fast execution” button that is in the top toolbar (seen below, circled in red).



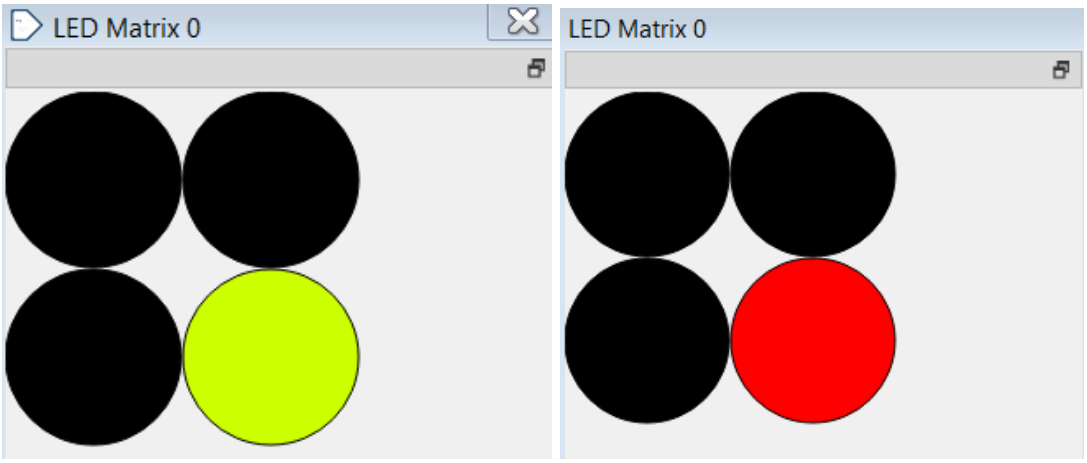
As soon as the program starts, LED's will begin flashing, and the first round of Simon has begun.

Start of a round:

Each round, the LEDs will flash in a specific sequence, with there being one more flash than the previous round. If this is the first round, then there will be 4 LED flashes. Memorize the sequence that the LEDs flash in. When all the LED's flash at the same time, this indicates that the entire sequence has been shown to you. Below is the color of the LED’s flashing blue.



It is now up to you and your memory to input the sequence back using the d-pad buttons in the correct order. Starting from the beginning of the sequence, click on the d-pad that maps to the first LED in the sequence, then the second LED in the sequence, and so on until you reach the end of the sequence. After each d-pad click, the LED that the button maps to will light up and flash, indicating that the input was recognized. A green flash indicates that the correct LED was inputted, and a red flash indicates the wrong LED was inputted. While the LED stays lit, no other inputs will be recognized. Below the LED turning green can be seen on the left, while the LED turning red can be seen on the right.

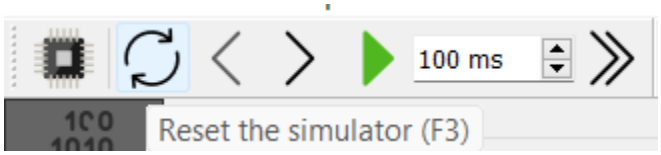


If the entire sequence was inputted correctly, then all the LEDs will flash green once, indicating that the sequence was inputted correctly. Then, you will see a message will appear in the console asking you if you want to continue onto another round or not. Clicking the up button on the d-pad will result in the next round starting. Any other input will cause the game to end. When a new round starts, the sequence from the previous round is used, with an extra LED being added on to the end. This will happen with every round, causing the sequence to grow and grow.

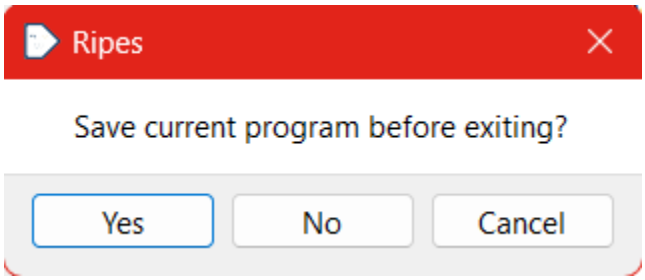
Otherwise, when one LED in the sequence is inputted incorrectly, the LED that was inputted incorrectly will flash red. This indicates that the sequence was not inputted incorrectly, and that the game is over. A message will appear in the console asking you if you want to play again, or if you want to quit. Clicking up on the d-pad will cause the game to start again. Any other input will cause the program to end. When the game starts again, an entirely new sequence begins generating, starting back at the beginning with just one element, and progressively increasing in size each round.

Ending the game and restarting:
To end the game, you can at any point click on the fast execution button. This may cause some LED's to stay lit, but this will not be an issue.

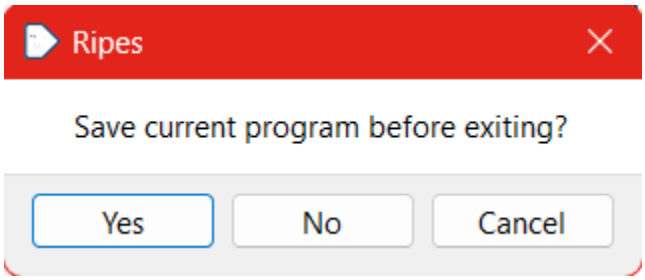
When the game has ended, navigate to the top from the top toolbar, navigate left a bit and click on the "Restart Simulation" button (seen below). This will set the game up to be ready to be played again.



After this, if you wish to exit, you can simply close RIPES. If a window pops up asking you to save (see below), click on "Yes".



Troubleshooting:
If the game is not running for whatever reason, try closing RIPES. When the window pops asking you to save (see below), click on "Yes". Then, relaunch RIPES and everything should work correctly.



If this does not fix it, check to see if there are multiple LED matrices created or d-pads created in the “I/O” tab. Delete any instances that are not “LED matrix 0” and “D-pad 0”.

If this does not fix it, check the processor using the select processor button. Set up the processor again as outlined in the setup instructions.

If this still does not fix it, try redownloading SimonInstructions.s from where you had downloaded it and try loading the program again.