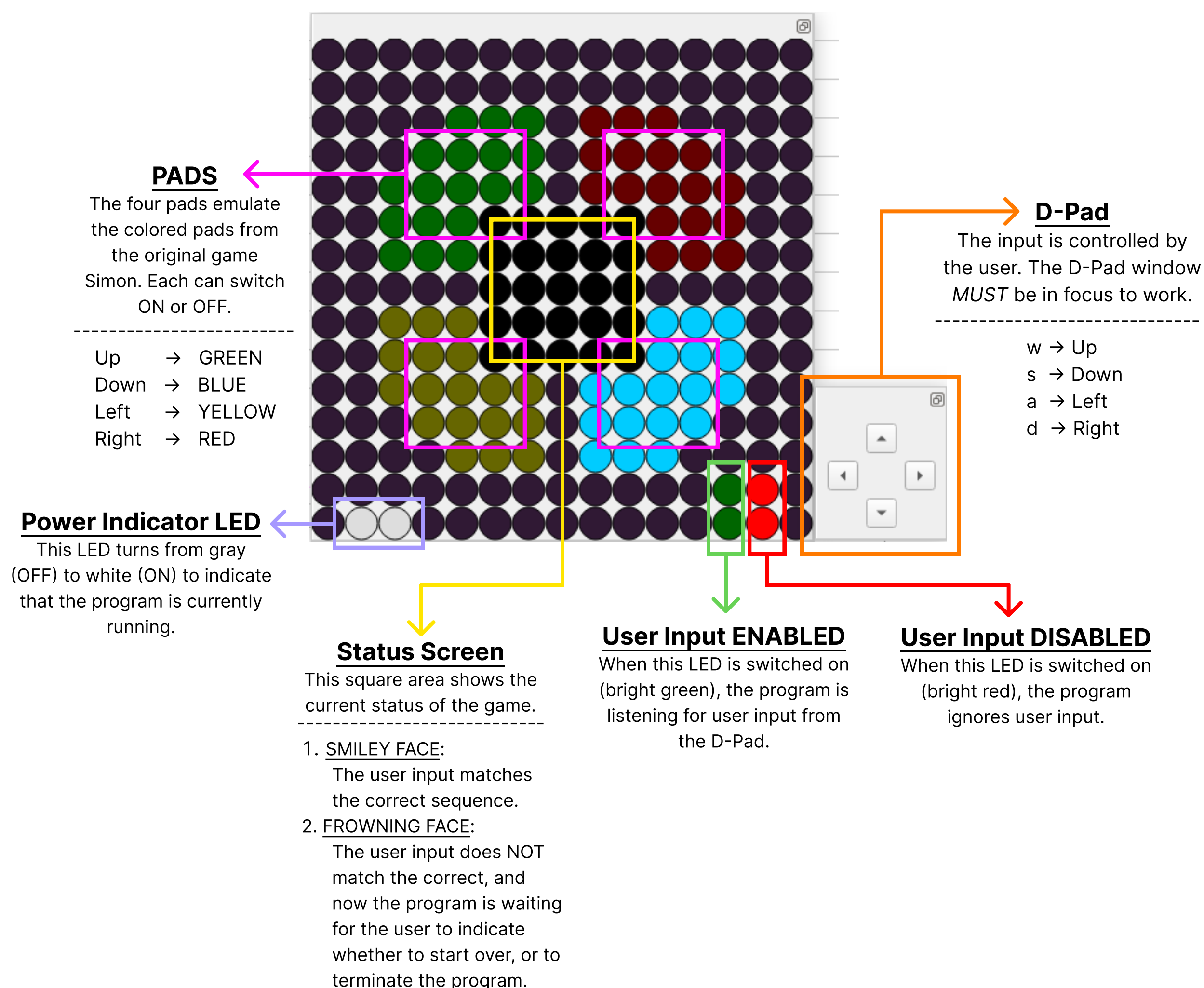Donghee (Danny) Han
999825596
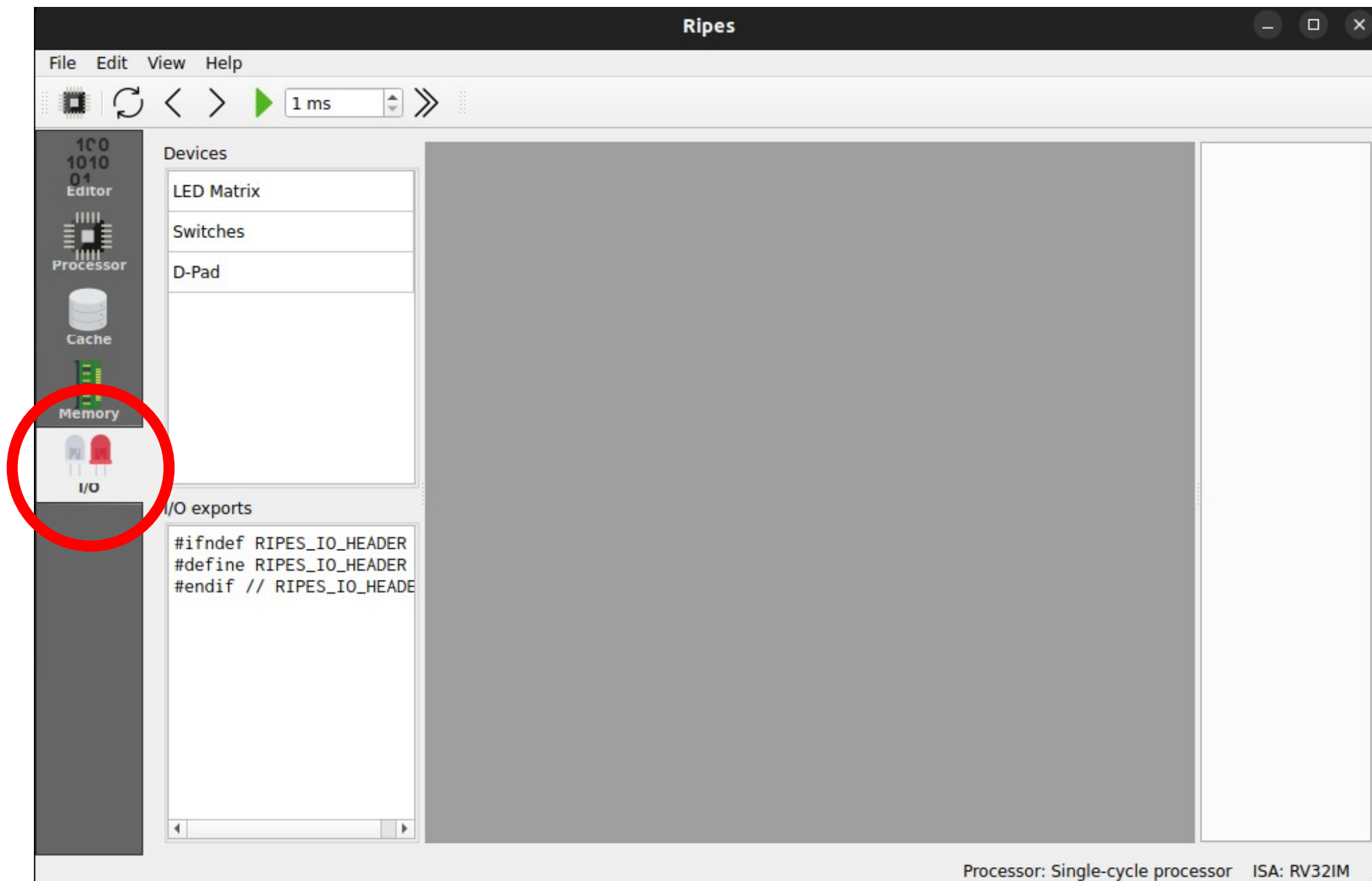LEC0101

CSC258: Project Assembly
USER GUIDE

NOTE: This guide assumes that the user has downloaded Ripes, and that the starter code has been loaded onto the editor section of Ripes.

1. User Interface Layout

PADS

The four pads emulate the colored pads from the original game Simon. Each can switch ON or OFF.

Up	→	GREEN
Down	→	BLUE
Left	→	YELLOW
Right	→	RED

D-Pad

The input is controlled by the user. The D-Pad window *MUST* be in focus to work.

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w → Up
s → Down
a → Left
d → Right

Power Indicator LED

This LED turns from gray (OFF) to white (ON) to indicate that the program is currently running.

Status Screen

This square area shows the current status of the game.

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1. SMILEY FACE:
   The user input matches the correct sequence.
2. FROWNING FACE:
   The user input does NOT match the correct, and now the program is waiting for the user to indicate whether to start over, or to terminate the program.

User Input ENABLED

When this LED is switched on (bright green), the program is listening for user input from the D-Pad.

User Input DISABLED

When this LED is switched on (bright red), the program ignores user input.

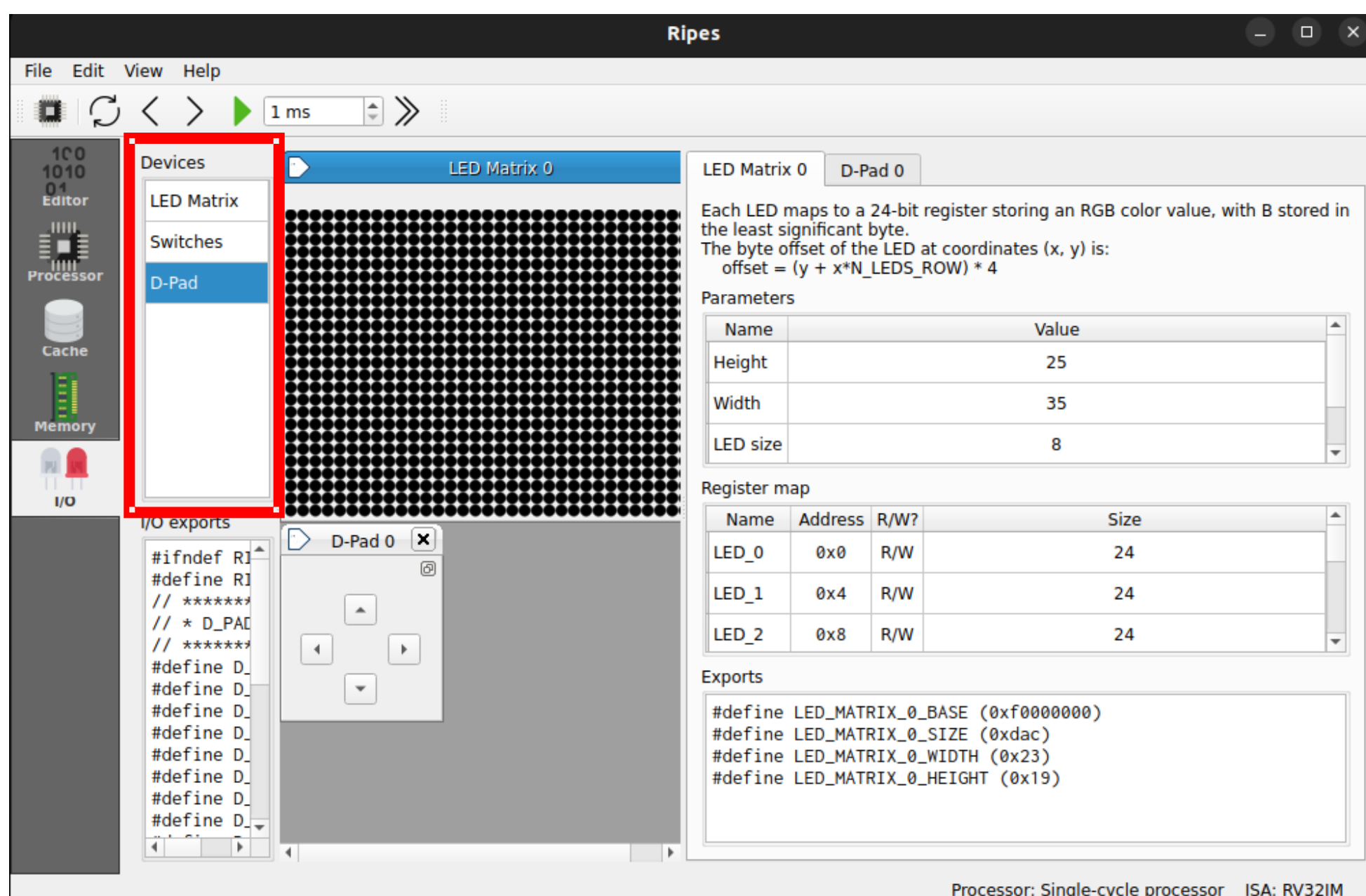Donghee (Danny) Han
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2. Setup

(a) Navigate to the **I/O** tab from the leftmost panel of the Ripes window, as shown.

(b) From the **Devices** pane below, initialize **LED Matrix** and **D-Pad** by double clicking on each of them.
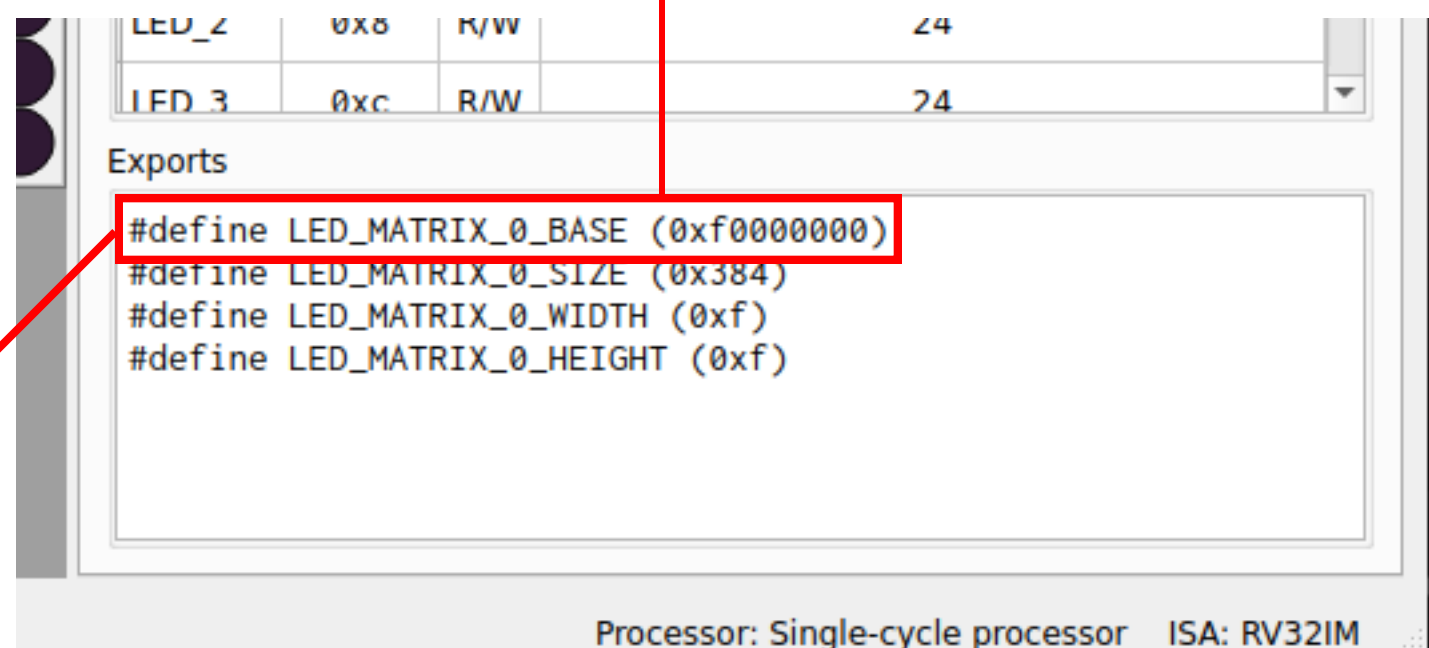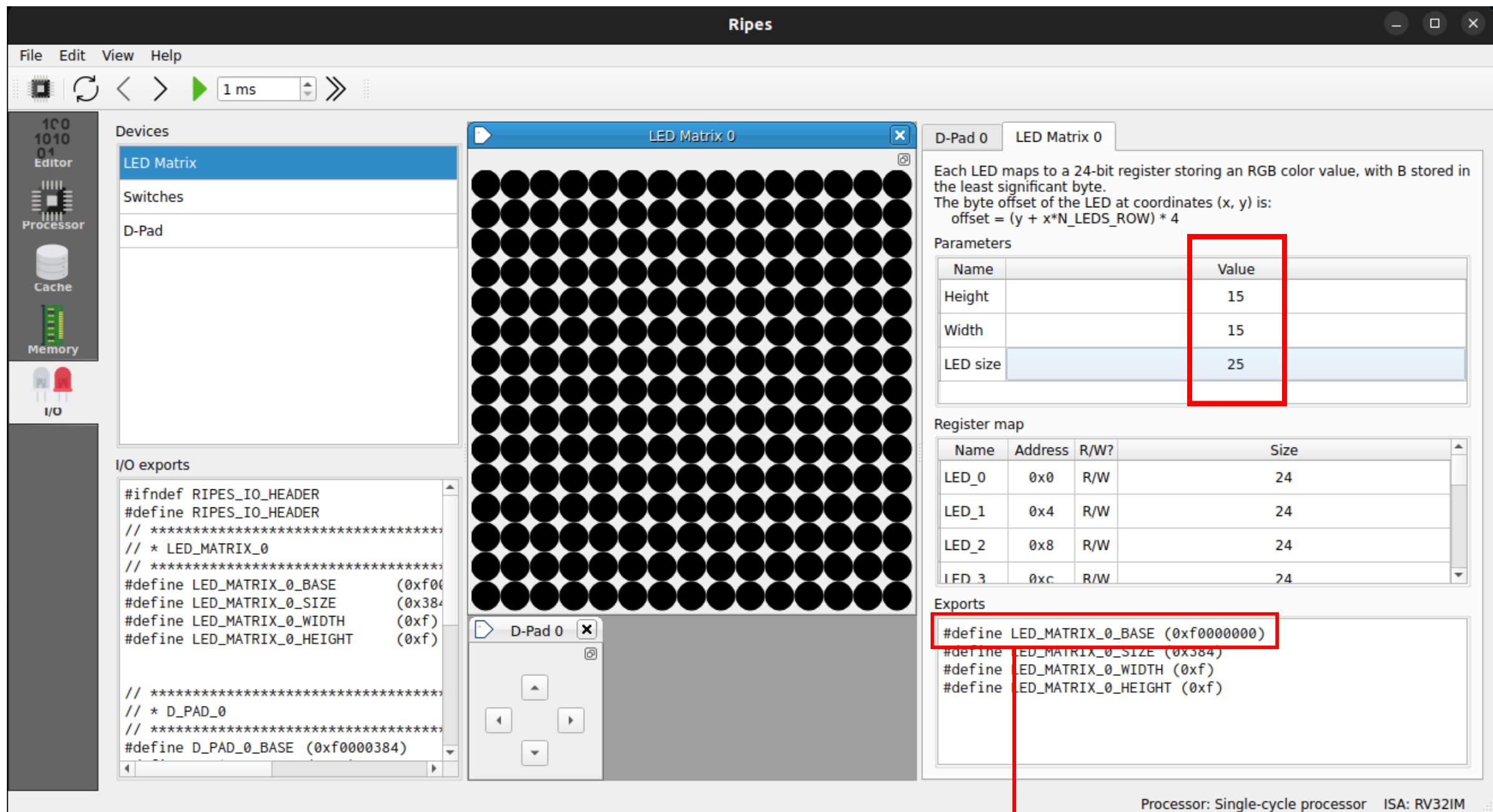
(c) As shown below, navigate to the **LED Matrix 0** tab and adjust the three parameter as follows:

> **Height** = 15
> **Width** = 15
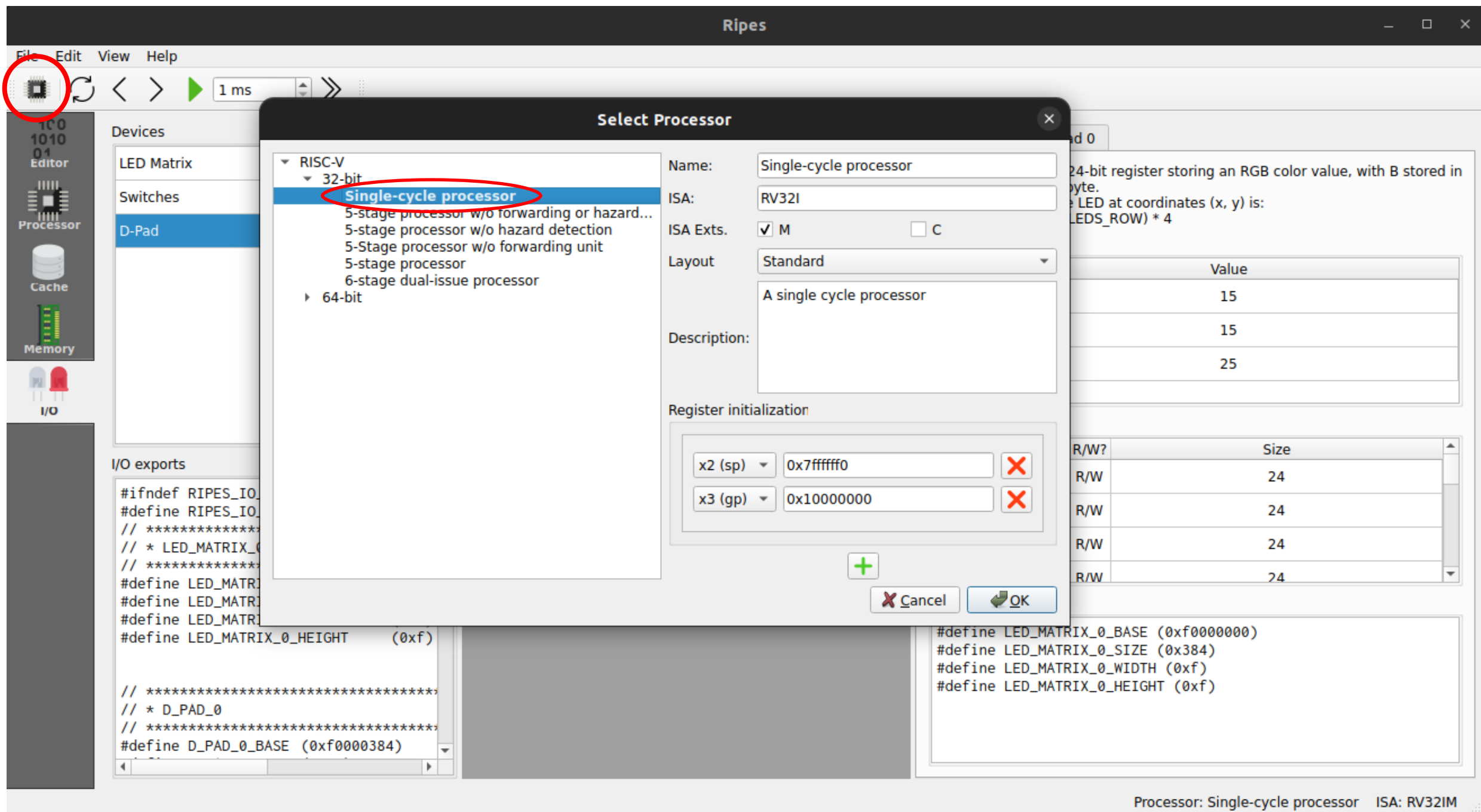> **LED size** = 25

IMPORTANT: Make sure that the base address of **LED_MATRIX_0_BASE** is set to the to the address **(0xf0000000)**. Otherwise the LEDs will not work properly!
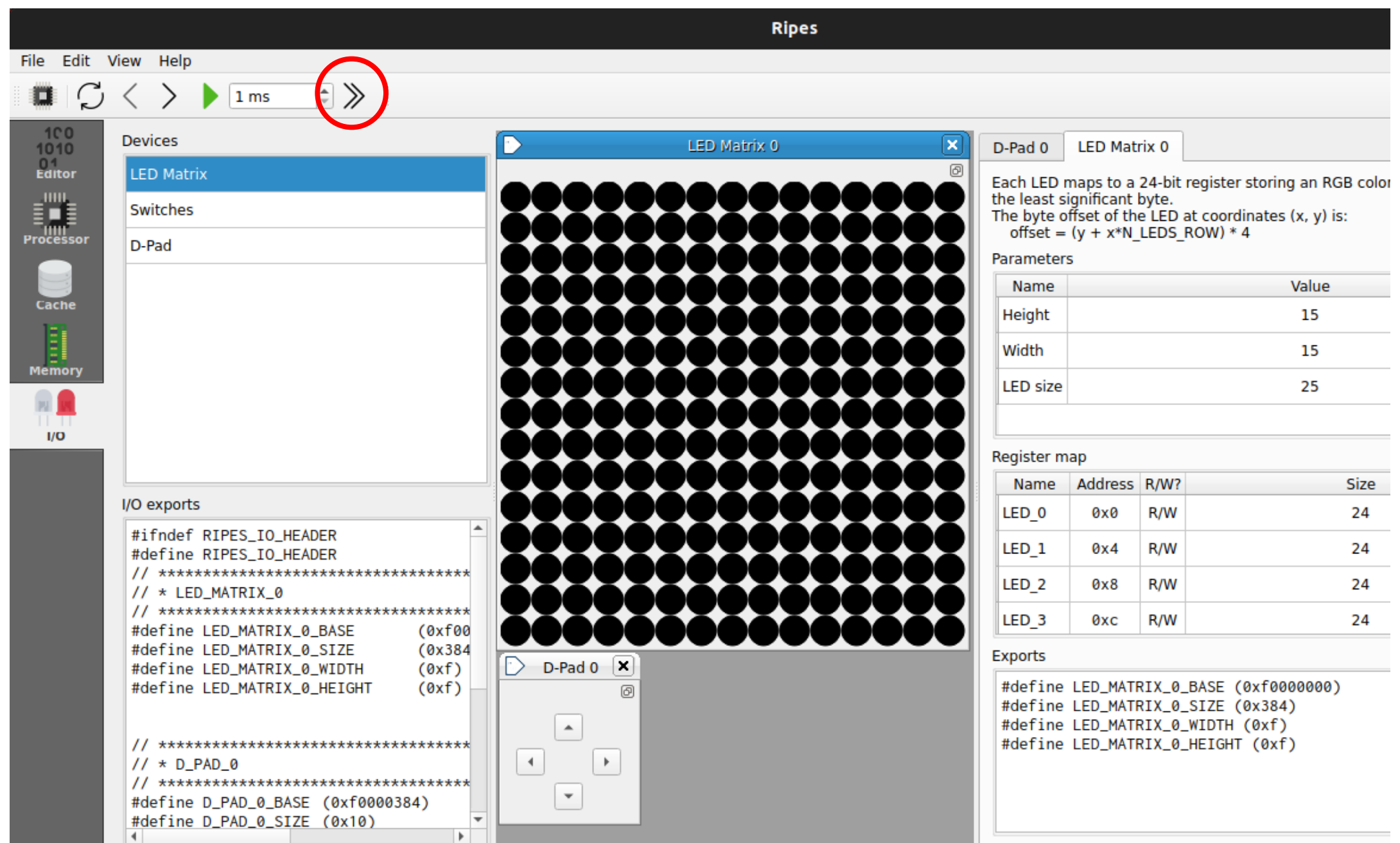
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(d) Finally, open the **Select Processor** settings by clicking the icon circled below, and select the **RISC-V, 32-bit, Single-cycle processor**. Click **OK**.
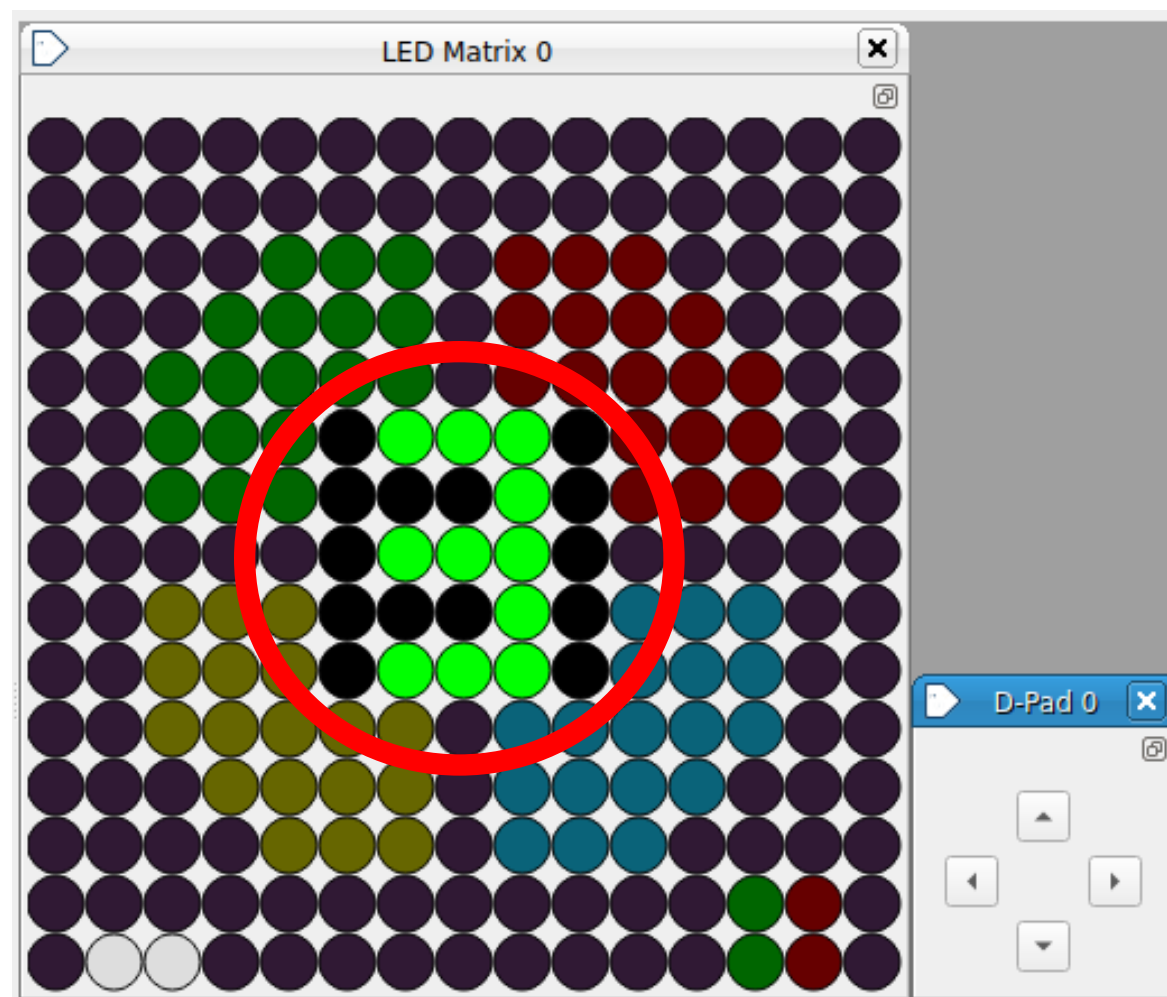
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3. How To Play

(a) With the **LED matrix** and the **D-Pad** in view, start the program by clicking the **>>** button below.
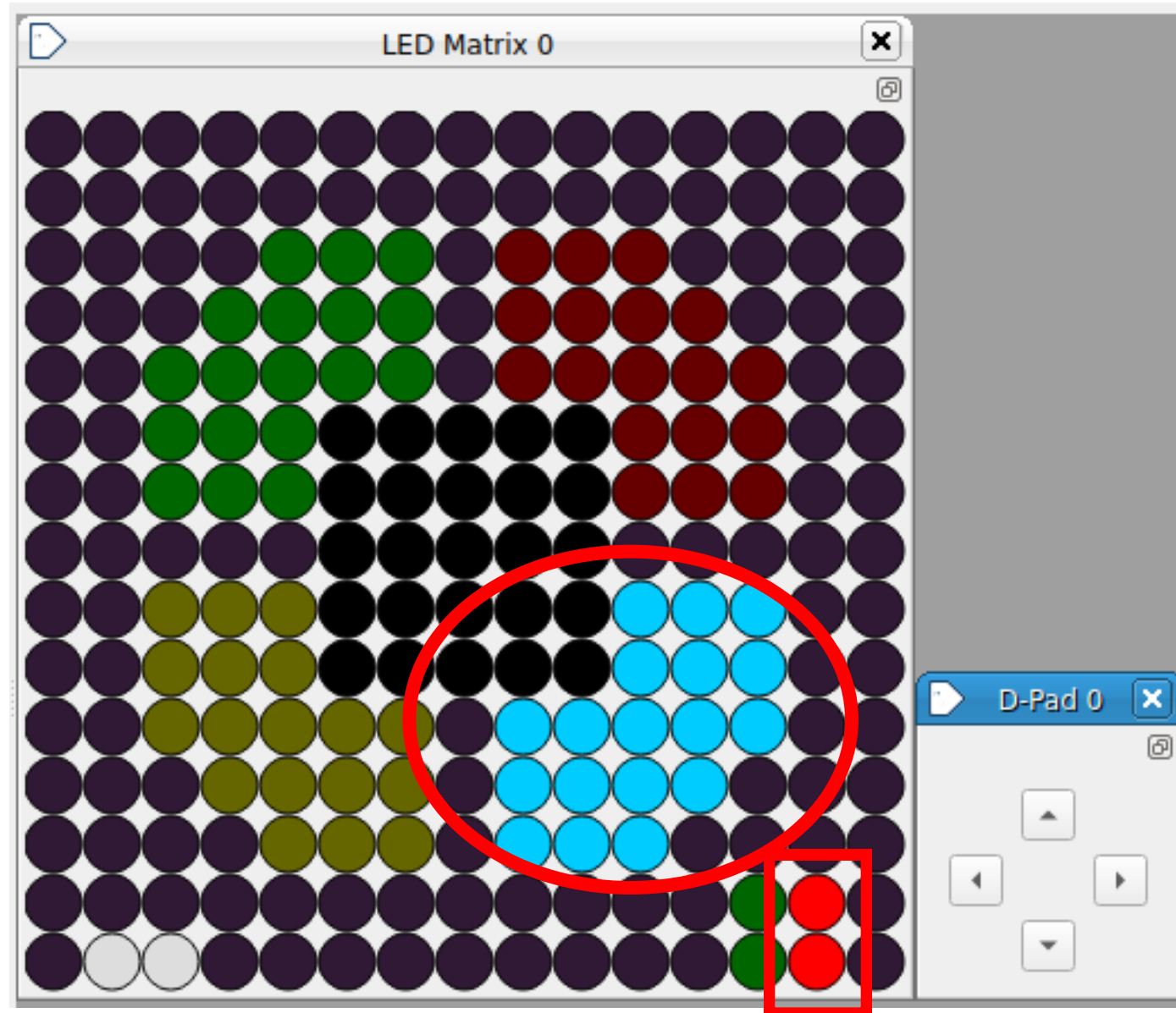
NOTE: The player does NOT need to look at the console output at all in order to play the game.

(b) The game will start when the count down is over, as shown on the **Status Screen**.
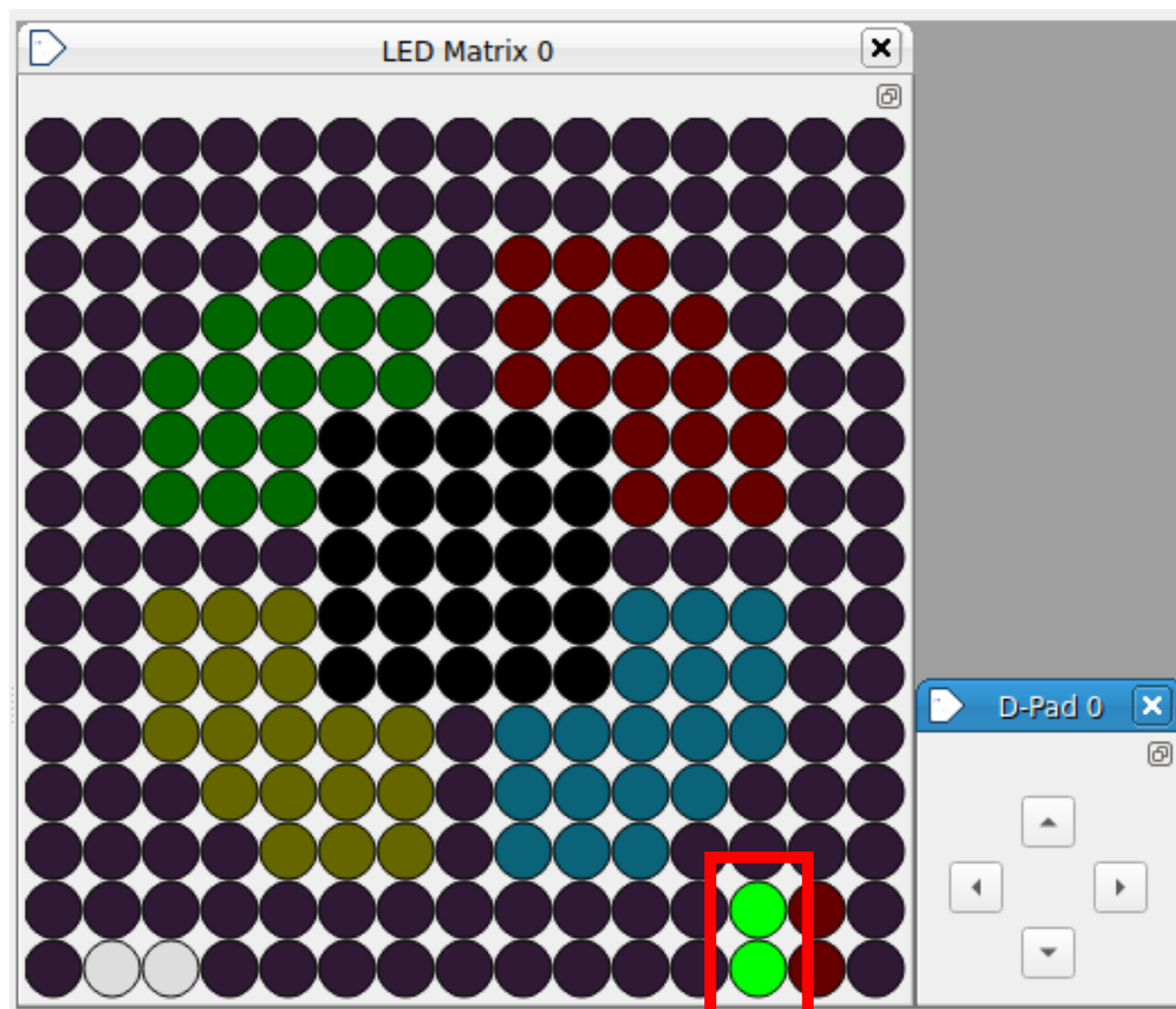
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(c) Once the countdown is over, a sequence of pattern is shown to the user by lighting up one of the four colored **PADS**. While this sequence is being shown, the **User Input DISABLED** LED is bright red to indicate that the program is NOT listening for user input.
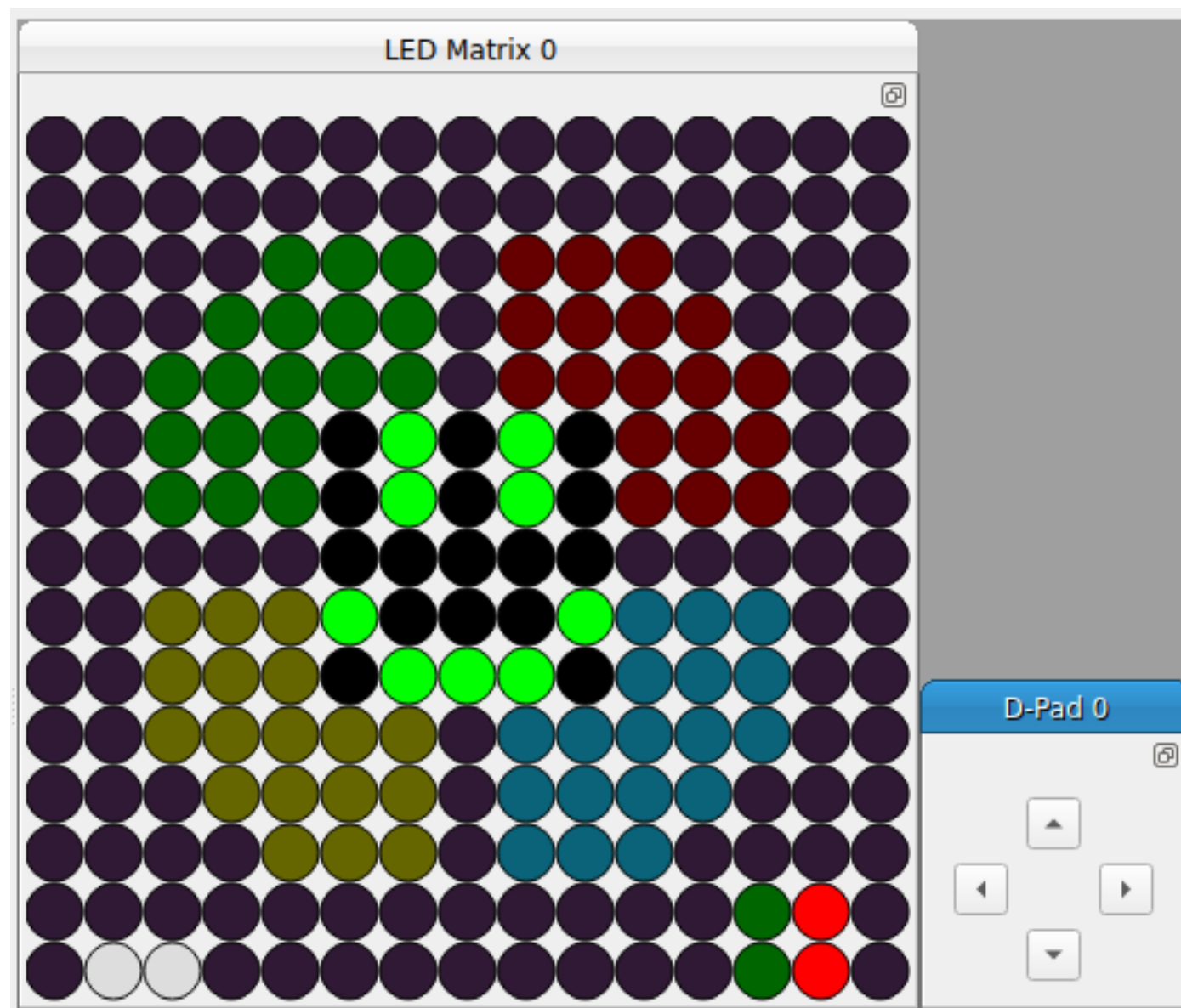

(d) Once the sequence is shown, now it's the user's turn to use the **D-Pad** to mimic the sequence. Refer to **Section 1** of this USER GUIDE to see which key corresponds to which color. The **User Input ENABLED** LED is bright green to indicate that the program is lisetning for user input.

Make sure that the **D-Pad** is in focus when using the 'wasd' keys to record input.

(e) If the user input matches the given sequence, then the program will move onto the next round. The same process repeats until the user fails to match the sequence.

(f) If the user fails to match the sequence, the game halts and a frowning face is shown as below. At this point, the user can input **'W' or 'D' to retry**, or **'A' or 'S' to terminate the program**.