# Simon games

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### 1 Introduction

This game is called Simon. The purpose of this game is to allow the player to develop short-term memory in the process. A player is given a pad with four parts. Each part represents one colour. Upon starting the game, different colours will show up and disappear in random order. The player is required to memorize the sequence in which colours show up.

### 2 background story

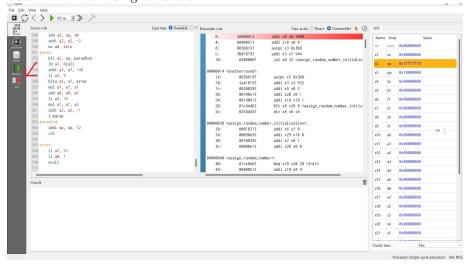
Simon is invented by Baer, Ralph, H in 1978. The idea of this game originated from touch me which is a game developed by atari. Touch me plays musical nodes in a sequence and the player must memorize the locations of buttons that correspond to each musical node. The game was a failure due to its scary music node (national museum of American history, 2008).

### 3 Number of players

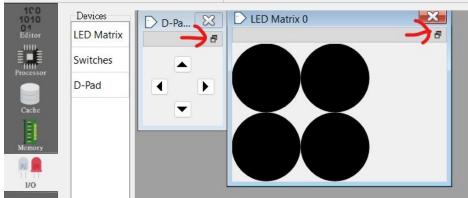
The number of players is 1.

### 4 setup

Player should download the file "Simon game" and application "Ripes" and launch it. In the app, player should move the cursor to top left button "File" and click "load program" in drop-down menu. Then, the player needs to Select "source code" and enter the "Simon game.s" file directory, then click ok. The player should see the codes now and move cursor to the left and click the I/O button where a red light bulb is.



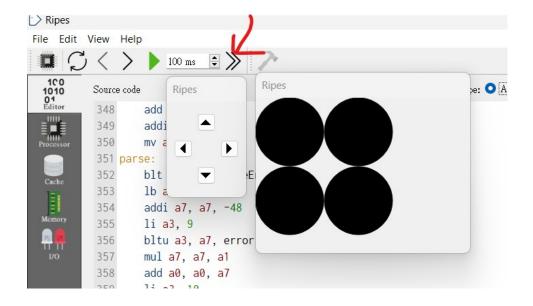
The player should be able to see two windows, "D-Pad" and "LED Matrix 0". D-Pad shows four directions and LED Matrix 0 has 4 black circles. The player needs to click the two little squares button at the top right corner in both windows.



The player needs to move to the left and select "Editor" in the left column. D-Pad and LED Matrix 0 windows should then appear on top of codes. Before starting the game, the player needs to delete the comment line above the first line of code.

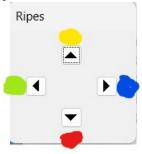
```
Source code
                                                          Ii Ripes
                                            Ripes
  8 promptmessage1: .string "please enter
  9 errormessage: .string "wrong you lose!
 10 successmessage: .string "success you w
 11 .globl main
 12 .text
 13
 14
 15
        # TODO: Before we deal with the LEDs, we need to
 16
        # sequence of numbers that we will use to indicat
        # to light up. For example, we can have 0 for UP,
 17
 18
        # LEFT, and 3 for RIGHT. Store the sequence in me
 19
        # a declaration above that you can use if you want.
        # HINT: Use the rand function provided to generate each number
 20
 22 #questions: when the user run the program, is he playing it in fast exe
 23 # cheat sheet 1=down=red , 2=left=green, 0=up=yellow, 3=right=blue
 24
 25
        firstround:
 26
            li s0, 1000
            li s2, 4
            la gp, 0x000003b8
 28
            j assign_random_number_initialization
```

The player should click the "fast execution" button at the right of textfield on top, the button looks like >>. Upon clicking the button, the player should start seeing colors to show up.



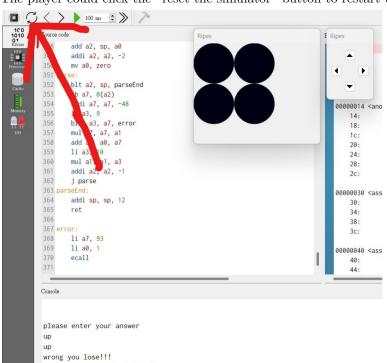
### 5 How to play

After the player finish setup, he can click fast execution button to start. The following light colours will pop up randomly: red, green, yellow, and blue. The player needs to memorize the order in which they appear and enter the correct order on D-pad. To enter directions, please click the direction buttons on D-pad.



For example, if lights appear in green, blue, red, and yellow, then the player needs to click left, right, down, and up to advance to the next level. If the player clicks buttons in the wrong order, the game will print "wrong you lose!!!" on the console.

```
please enter your answer
down
down
wrong you lose!!!
Program exited with code: 0
```



The player could click the "reset the simulator" button to restart the game.

If the player succeeds, this game would increase the difficulty by decreasing the time the lights appear on the screen and increasing the length of the sequence the player must memorize.

## 6 End of turn

Program exited with code: 0

At the end of a turn, player will be prompted to advance to next level or exit at current level. If player loses, player could click reset button to restart the game from level 1.

### 7 enhancements

- The sequence will expand by one.
- Amount of time LED light pop up and disappears decrease by half after each successful round.

### 8 Warning

- please do not click the fast execution button while the game is running, it might cause the program to crash. A player is only allowed to click the fast execution button again after clicking the reset button.
- When prompted to enter number 1 or 0 at the end of a turn, entering other numbers or characters will end the game with exit code 1.
- no refund.

### 9 Common questions

- How will the game indicate that a sequence has been fully displayed and a player should start providing input?
   After the sequence is fully displayed, the game will print "please enter your answer" in the console.
- 2. How will the game indicate that a d-pad key has been pressed?

  Each time a player clicks a button on the d-pad, game will print the corresponding direction player has clicked.
- 3. Which d-pad key corresponds with which LED?
  - down < > red
  - left < -> green
  - up < > yellow
  - right < > blue
- 4. How will the game indicate that the player successfully matched the sequence?

Game would print "success you win, do you want to play one more round 1 for yes 0 for no"

### 10 bibliography

Simon Electronic Game, 1978. National Museum of American History. (n.d.). Retrieved February 21, 2023, from https://americanhistory.si.edu/collections/search/object/nmah<sub>1</sub>302005.