Simons Game

Requirements: 1 Player, 15 minutes, Age: 8+

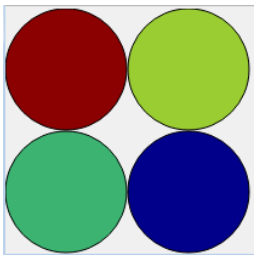
Are you ready to stretch the boundaries of your memory? Well then, Simons is the right game to play.

The game consists of 4 LEDs of distinct colours that will light up in a random sequence. Your target is to remember the sequence of colours displayed by the LEDs and to mimic this sequence using the D-Pad provided. Keep playing until you fail to match the sequence correctly.

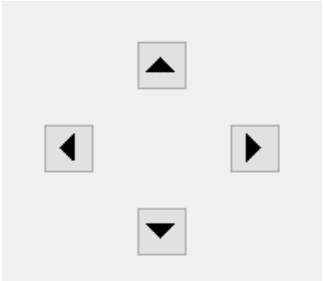
The fun doesn't stop there though. This new implementation of the game allows for longer sequences as well as faster displaying of the colours. The more sequences you remember, the longer these sequences get and the less time you will get to see each of the colours light up, so always pay attention.

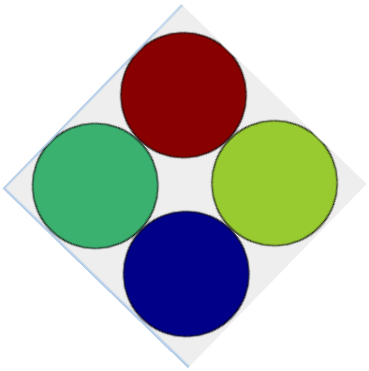
Components

- An LED matrix consisting of 4 LEDs. The colours of the matrix are shown below,



- A D-pad. Below is a picture of a D-pad and a rotated picture of the LED matrix to show the colour corresponding to each button clicked,
    - Up arrow is Red
    - Down arrow is Blue
    - Left arrow is Green
    - Right arrow is Yellow





Setup

To set up a game:

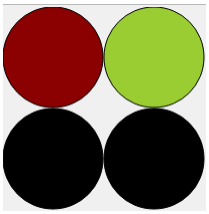
1. To start a new game, click on the ‘Reset the Simulator’ button on the top-left of your screen,

2. Then, also at the top, click on the green arrow, followed by the double-arrow,

3. Your LED matrix might look like this at the start,

   as opposed to the fully coloured LED matrix shown at the start. In this case, stop running the program and click on the ‘Editor’ section on the left side of the screen, under this:

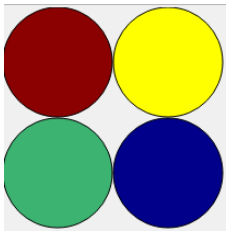
   

4. You might see a lot of code, don't worry! Go to the end of any line, simply press ENTER and delete the new line you created. Don't forget to save once done.
5. Then again on the left, click on 'I/O' under this:

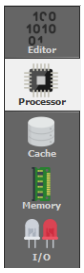
6. Finally, at the top click on the 'Reset Simulator' button again, then the green arrow, followed by the double-arrow,
7. You should now see the fully coloured LED matrix correctly.
8. You are now set to play the game!

How to Play

1. A sequence of colours will appear on the LEDs. For a colour to show, the corresponding LED will light up.
2. The initial length of the sequence of colours shown will be four e.g., Red – Blue – Yellow – Blue.
3. You will then click on the corresponding arrows to try match the sequence of colours that was displayed.
4. Each time you click on an arrow, the corresponding LED will light up quickly to help you identify which colour belongs to the clicked arrow.
5. If you click on a wrong arrow in the sequence, the corresponding incorrect LED will light up for around 5 seconds like this,



To try again or stop playing, click on the ‘Processor’ tab under,



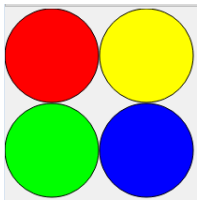
A message looking like this will appear,

```
Would you like to play again, (0 for NO, 1 for YES)
```

Enter the appropriate number based on your desire:

- If you entered one, click again on ‘I/O’ on the left and play the game again.
- If you entered zero, the game ends and you had a good try!

6. If you clicked on all the correct arrows, all LEDs would light up at once like this:



You now move on to the next level where the sequence gets longer, and the LEDs light up faster.

You can always track your level using the message under ‘Processor,’

```
Current Level is
1
```

Ending the Game

The game ends if you fail to match the sequence of colours shown by the LEDs. The indicator is the incorrect LED lighting up for around 5 seconds.

Winning the Game

The game is never really won. However, your aim is to achieve the highest level you can. You can find out the level you reached by looking at the message displayed on the console,

```
The level you reached was
2
```

Enhancements

There were two enhancements added to the base implementation of the Simons game:

1. Longer Sequences of colours – Every time the player guesses the correct sequence, they move to next level where the sequence gets longer. There is a 'Current Level' message always being displayed on the console after every level to help the player track the level that they are in.
2. Faster lighting of colours – Every time the player guesses the correct sequence, they move to the next level where the colours light up faster. This is designed to make it harder for the player to remember the sequence of colours.