

Mohammad Hashemi | 97243073
Instructor's Name: Dr. Dara Rahmati
April 9, 2021

HW03 Report

Microprocessor and Assembly Language Course - Spring 2021



Implementation description:

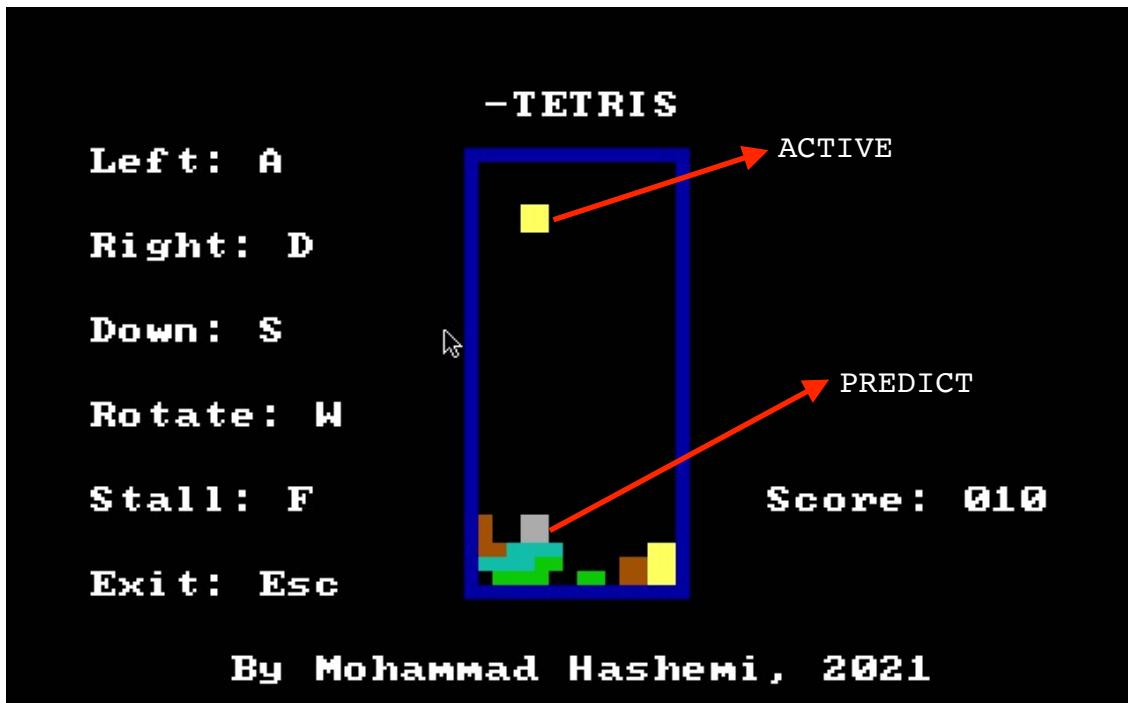
The board game contains a 32x16 grid. It means we have a grid of 256 cells.

```
GRID_WIDTH_SIZE      DW 16
GRID_HEIGHT_SIZE     DW 32
GRID                 DB 512 DUP (1)
```

Each grid cell is a square of size 4x4 pixel on the screen.

Therefor each piece on the board game contains 4 blocks(grid cells).

There are two main piece on the screen: 1. **Active piece** 2. **Predict piece**.

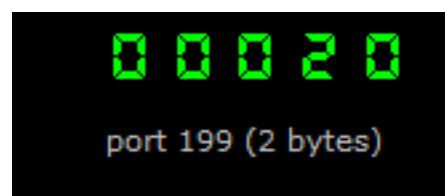


The Active piece is the one which is generated as a new piece at the top of the board game.
It comes down and builds the blocks on the bottom of the board game.

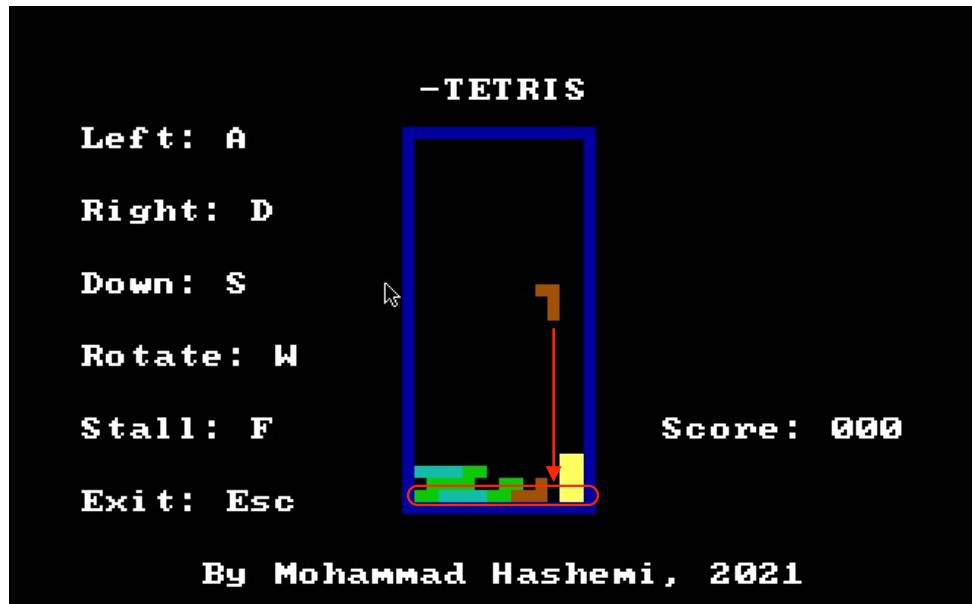
Predict piece is the one which be predicted of the Active piece. It moves simultaneously with the Active piece.

Each elements of the Grid array has a value which indicates the color of that block. For instance, all the grid cells will be initialized at the beginning of the game with 0(Black).

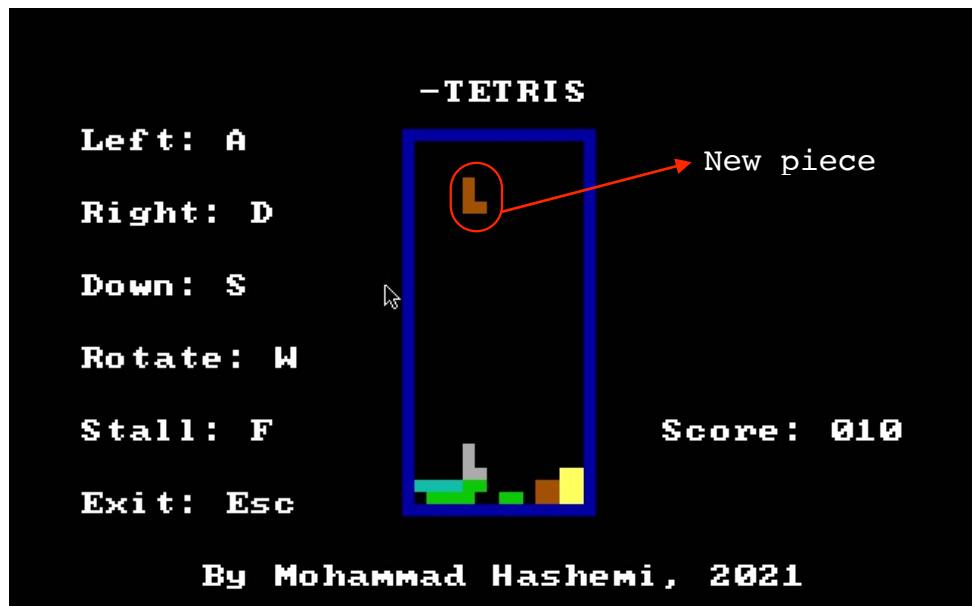
The score of the game also can be displayed on the LED.



The figures below show how the scores are updated:

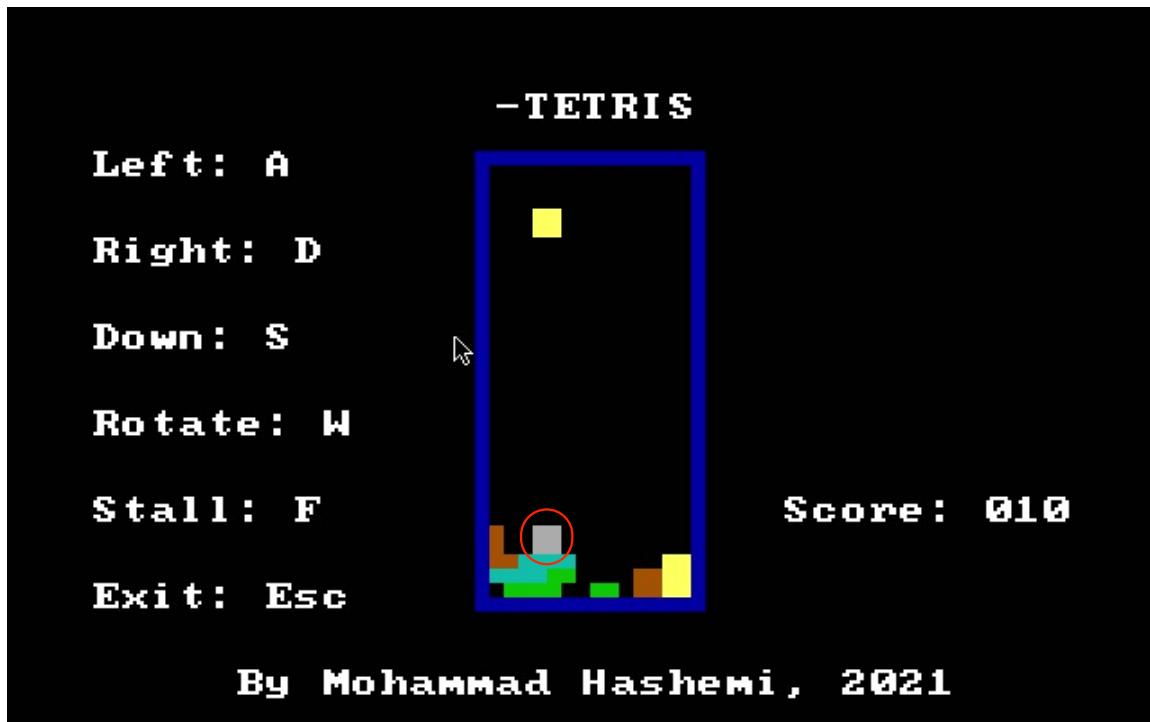


Before

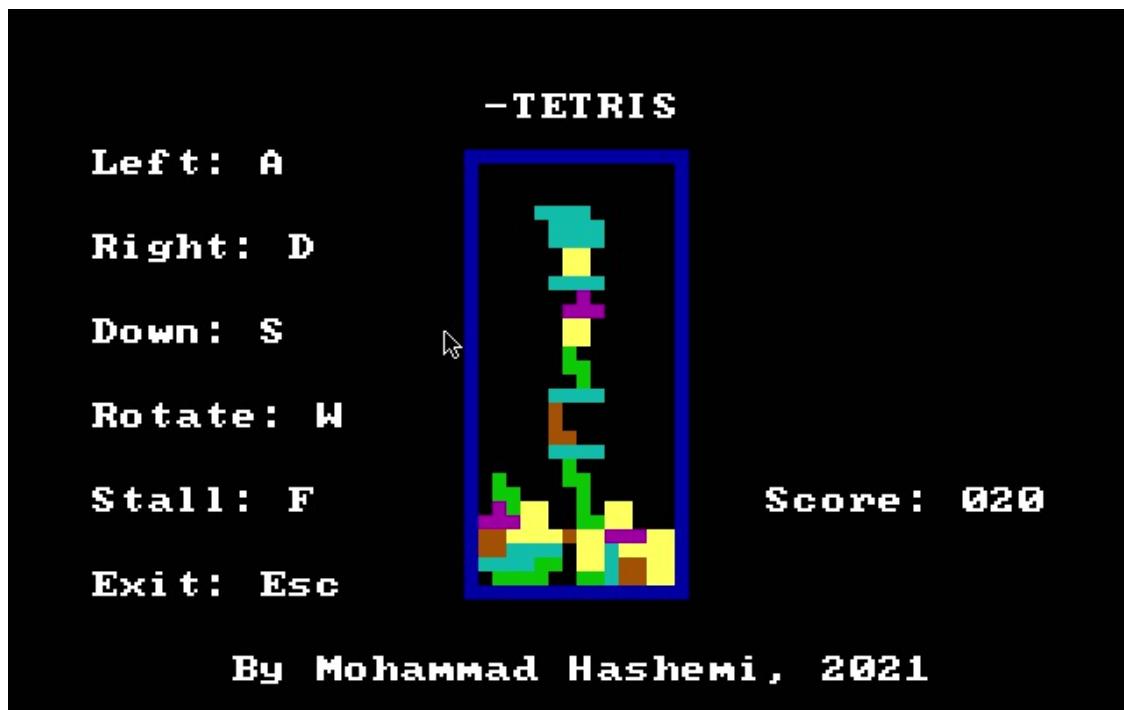


After

The figure below show the prediction piece:



And this is before and after the gaming over!



Before



After

See the Sample.gif in the project directory.