Tetris

Group Members

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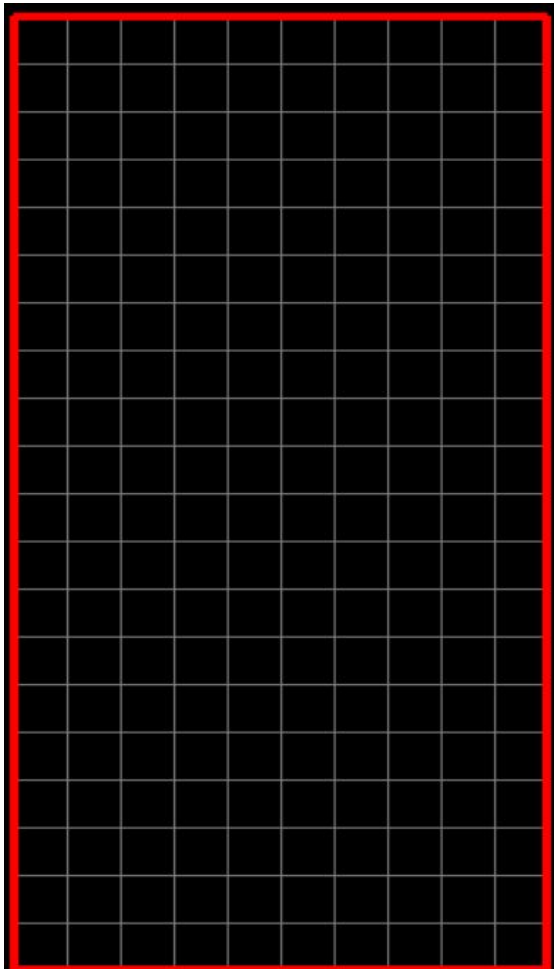
Technologies Used -

- Python 3 as Programming Language.
- Pygame as Framework
  - pygame is a Free and Open Source cross-platform library for the development of multimedia applications like video games on Python. It uses the Simple DirectMedia Layer library and several other popular libraries to abstract most common functions and makes writing these program a more intuitive task.

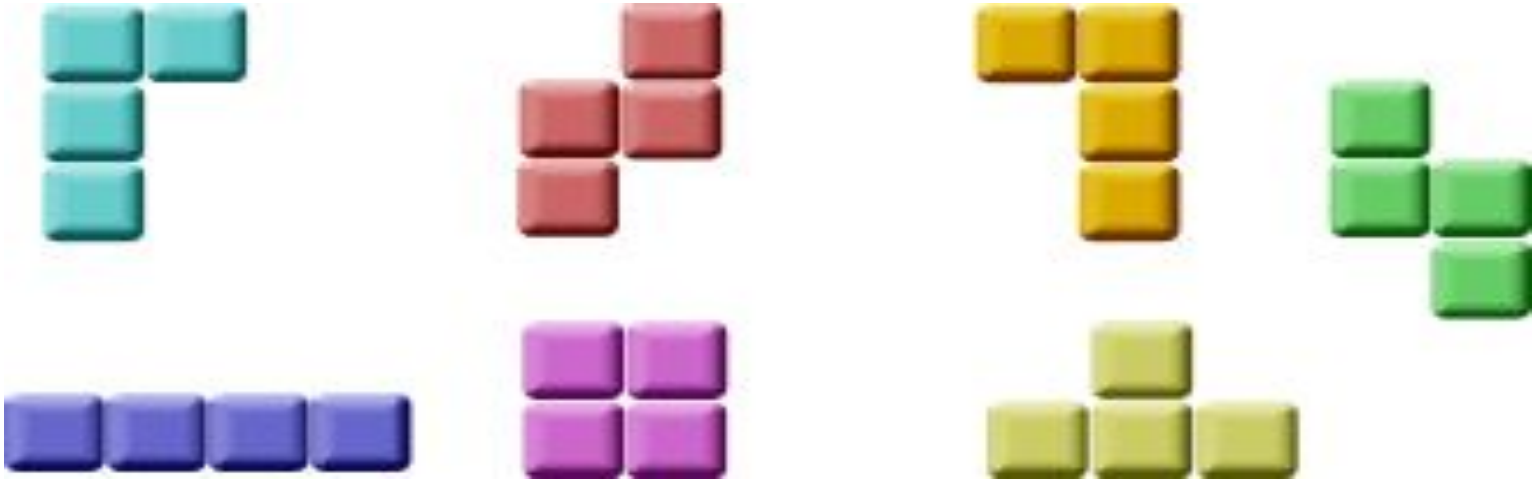
Playing Surface -

- The playing surface(empty grid) has dimension 20 x 10 blocks.
- Shapes traverse from top to bottom until either the bottom is hit or row beneath it are occupied.
- The Game terminates when a shape overflow this playing surface.



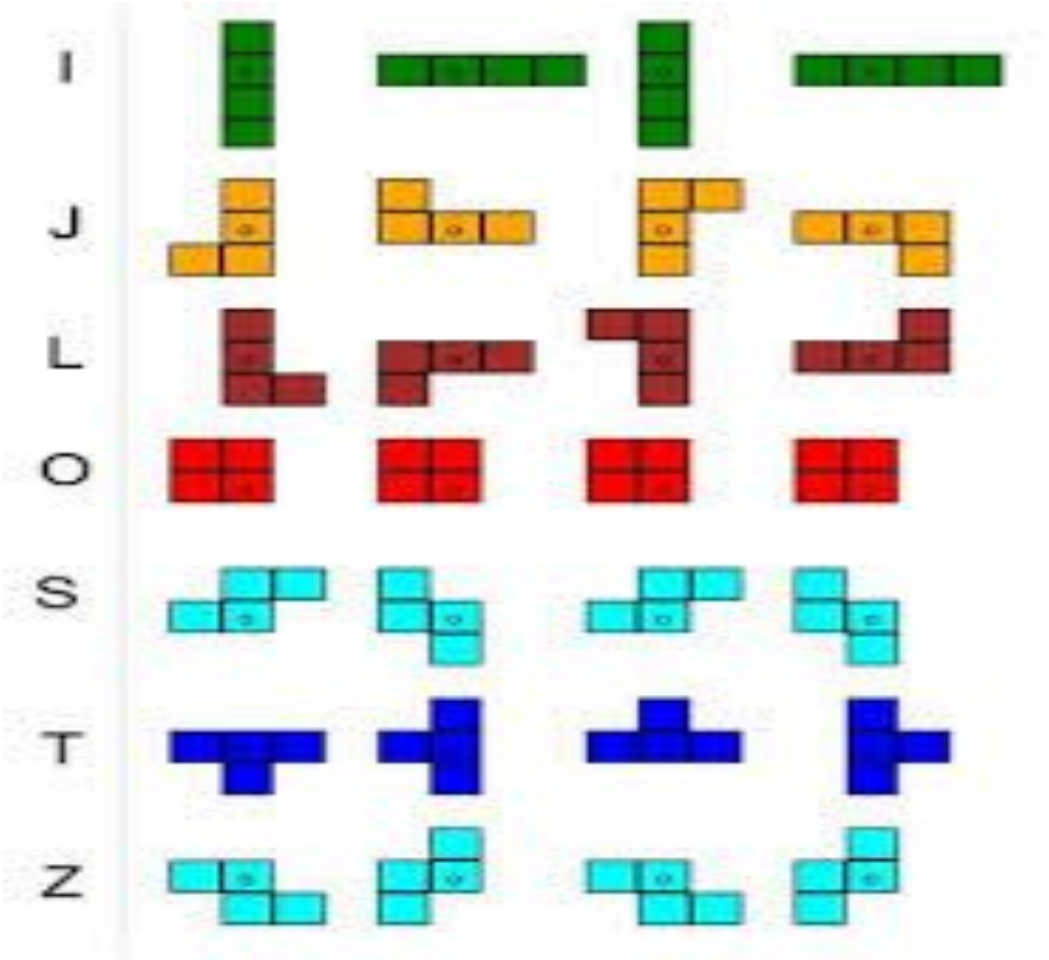
Shapes -

- There are a total of 7 shapes in the game.
- Every shape has an unique color.
- Shapes are - J, Z, L, S, I, O, T



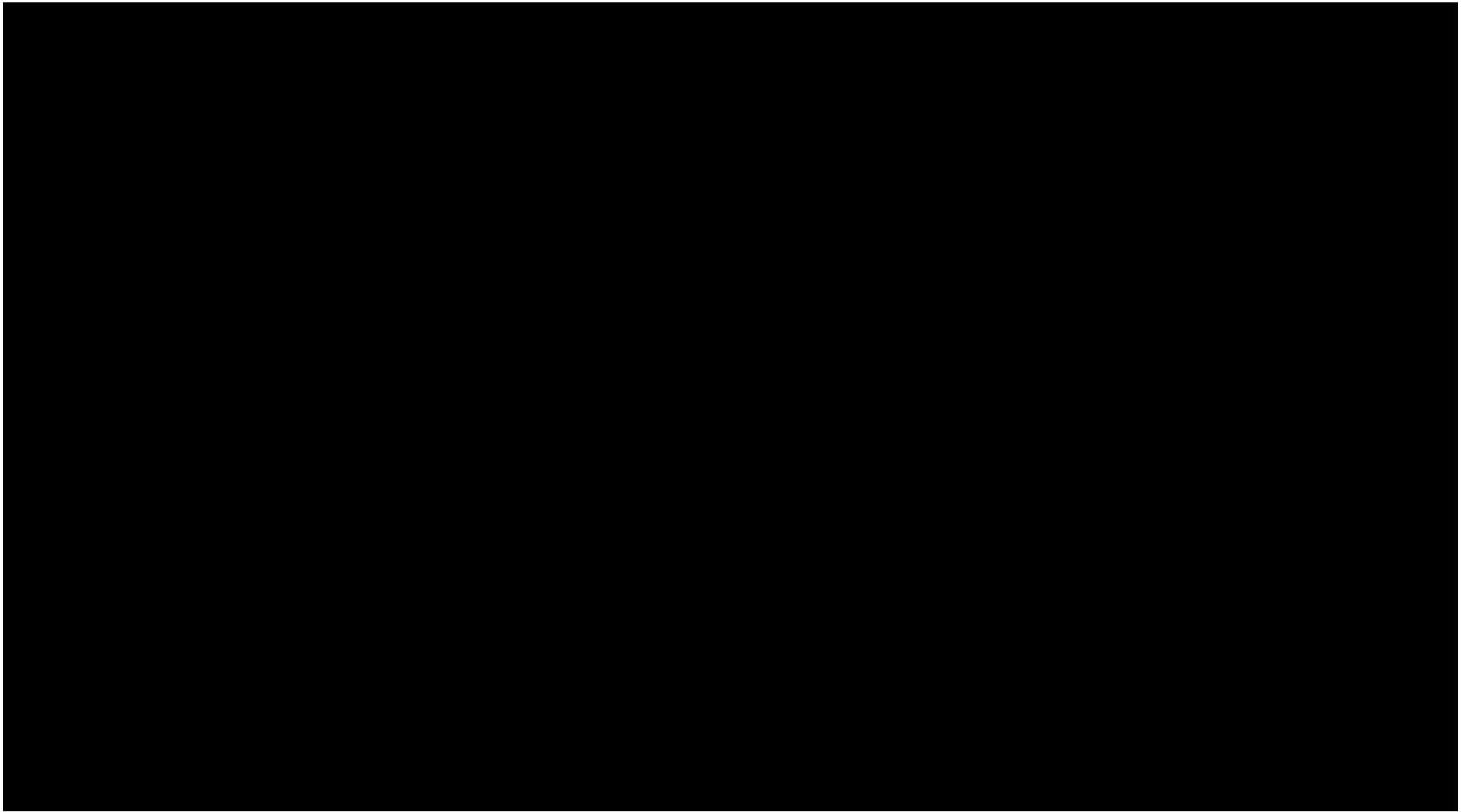
Shape Rotation -

- Each shape can be rotated in at max 4 ways.
- Press UP Arrow key to rotate a shape.
- If down arrow key is pressed, Bring block 1 row down at the same time.



Row Clearance and Scoring -

- After a Shape is placed, we go from bottom to top, to search if a row(s) has all 10 columns in a row filled with shapes.
- If found, Delete the row(s), and bring above rows down by that number of row(s).
- For each row cleared, Increment the score by 10.

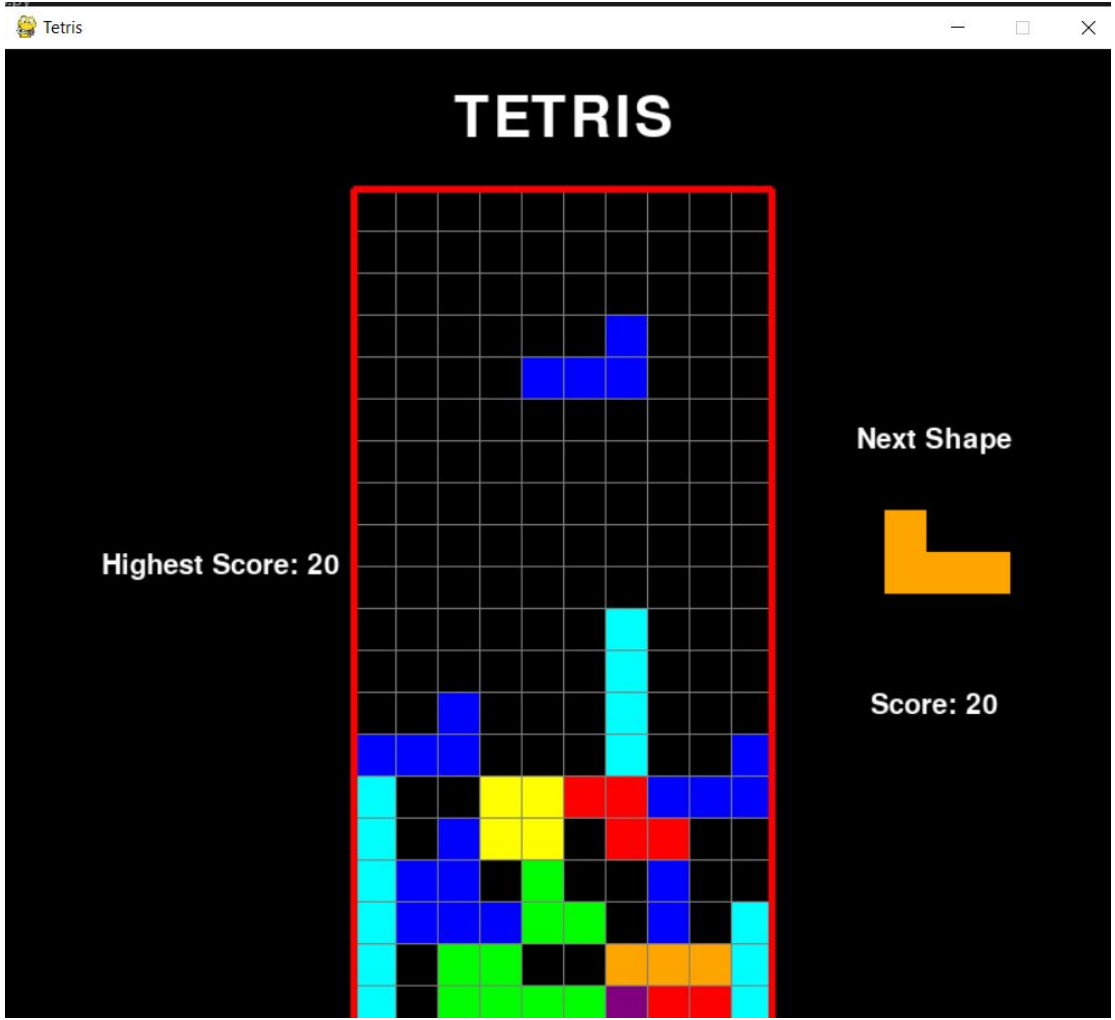


Increasing Difficulty in game -

- We have a default movement time starts at 0.27, which means that in 0.27 seconds, our shape moves 1 row downwards.
- To increase the in game difficulty, in interval of every 5 secs, the default movement time decreases by 0.005, which means that now our shape will traverse down faster by 5 ms.
- To not decrease the movement time too much, it is capped at 0.12, which can be achieved after 150 secs of gameplay and will remain the same afterwards.

Next Shape and High Score -

- Next shape is randomly selected out of the 7 shapes.
- Next shape is displayed on the right side of plane surface.
- High Score is updated after end of each game and persists between the sessions as well.
- High Score is managed between the sessions by storing, fetching and updating it in a text file.


Tetris
TETRIS
Highest Score: 20
Next Shape
Score: 20

References -

- Youtube Video - https://youtu.be/FfWpgLFMI7w
- Pygame Tetris - https://youtu.be/uoR4ilCWwKA

THANK YOU