2048 Game

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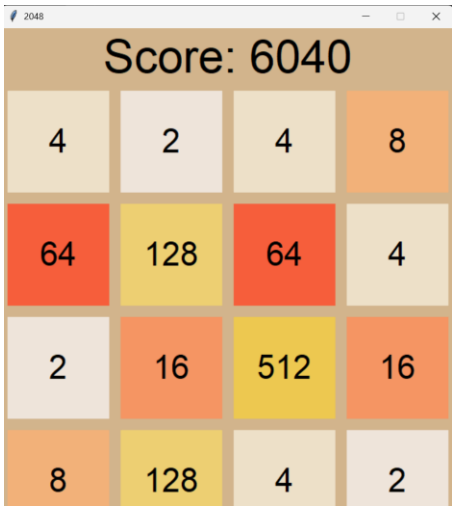
Version 1- MinMax with Score Heuristic

Development Summary:

In this version I ran basic MinMax agent for the 2048 game using a score-based heuristic.

Testing Results:



- Final Score: 6040
- Time-limit:0.1
- Search depth: 10

Analysis:

- The current MinMax agent avoids invalid moves and plays okay.
- It mostly moves right or down
- It has bad score mostly because of bad tile placement
- Big tiles dont end up in the corners
- Score is not consistent, sometimes it stops around 2000-4000

Next improvement:

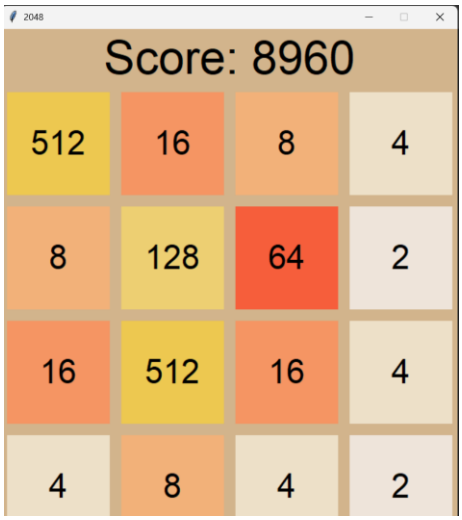
- Try to fit the highest tile stays in corner.
- Make it work good by adding penalty if sudden jump.
- Make score consistent.

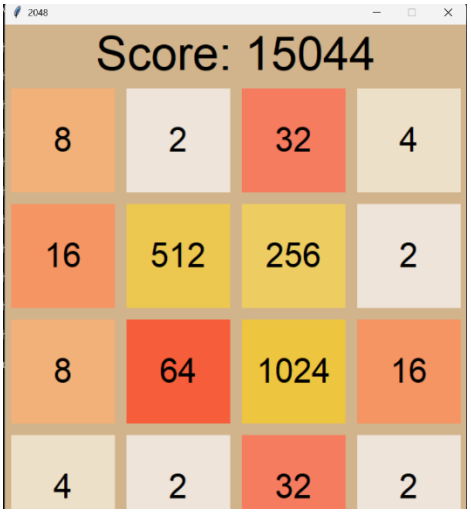
Version 2- MinMax with an improved corner based heuristic

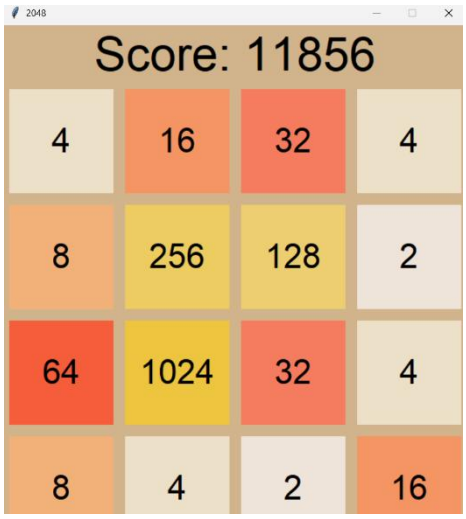
Development Summary:

In this version the goal is to keep the maximum tile in a corner and reward empty spaces. Soo the Highest tile won't fluctuate and gives higher score

Testing Results:







- Maximum Score: 15044
- Average Score: 8000
- Time-limit:0.1
- Max search depth: 108

Analysis:

- My Agent avoids bad moves.
- Max tile most of the time stays in a corner.
- Board has more empty tiles.
- Score is more consistent compared to version 1.

Next improvement:

- I will try to add snake pattern and make the tiles evaluated with descending order.
- And will try to keep the highest tile in right corner without moving