2048

Lone Hand - 7243 PUJA

2048 is an easy and fun puzzle game. It is played on a 4x4 grid using the arrows or W,A,S,D keys alternatively. Every time you press a key - all tiles slide. Tiles with the same value that bump into one-another are merged. Although there might be an optimal strategy to play, there is always some level of chance.
If you beat the game and would like to master it, try to finish with a smaller score. That would mean that you finished with less moves.

HOW TO PLAY :
  1. Use your arrow keys to move the tiles. When two tiles with same number touch, they merge into one!
  2. Press spacebar to start a new game
  3. A game ends when there is no valid move left.
  4. A game is won when there is a tile with 2048 on it.

Game is made using OpenGL.

Glut functions used :
  display callback, keyboard callback, init functions

Class :

```
class Game
        public :
                int board[4][4];
                // D R U L
                int dirLine[4] = {1,0,-1,0};
                int dirColumn[4] = {0,1,0,-1};
                int gameVar;
                double PI = 3.1415926f;
                int score = 0;
                int best_score = 0;

                pair<int, int> generateUnoccupiedPosition();
                void addPiece();
                void newGame();
                bool canDoMove (int line, int column, int nextLine, int nextColumn);
                bool isFull();
                bool isWin();
                int applyMove(int direction);
```

Platforms :
  This program was build on and for Linux distros Ubuntu 20.04.3, with basic C++ files and OpenGL installed on the system.

How To Run the Program ?
  Execute the program just like any other OpenGL program.

ScreenShots of the Program