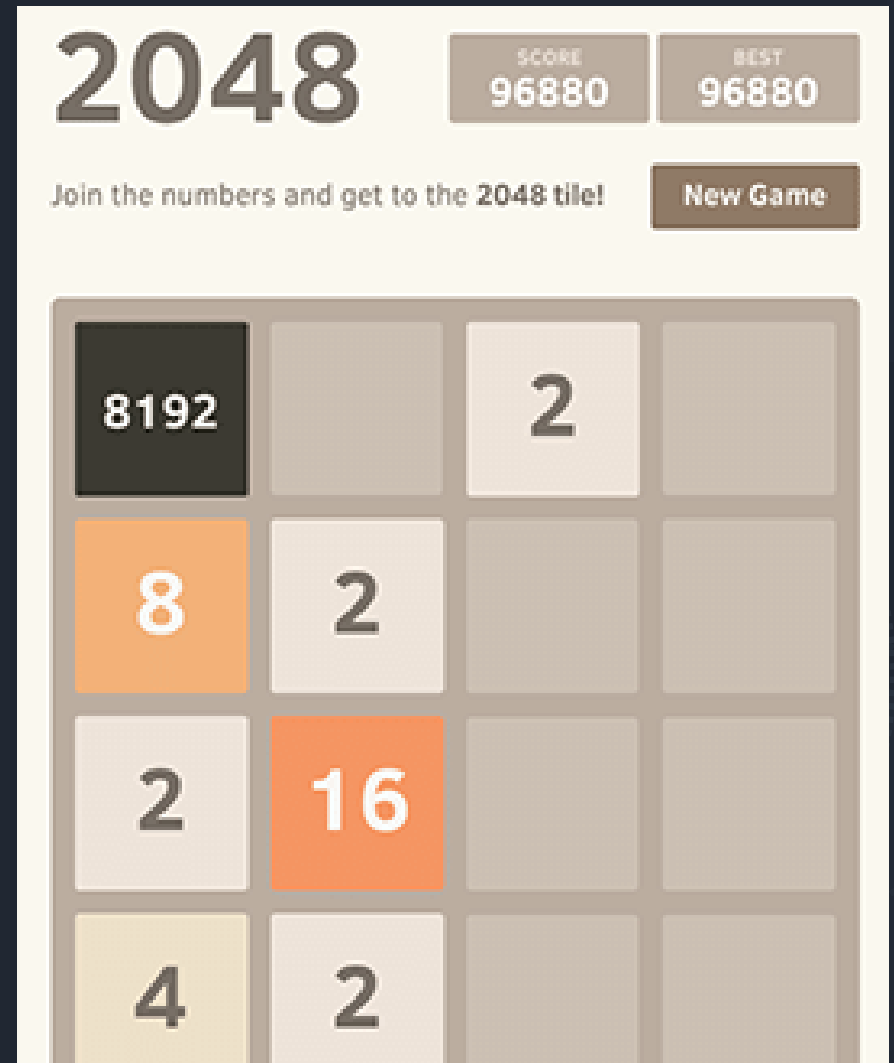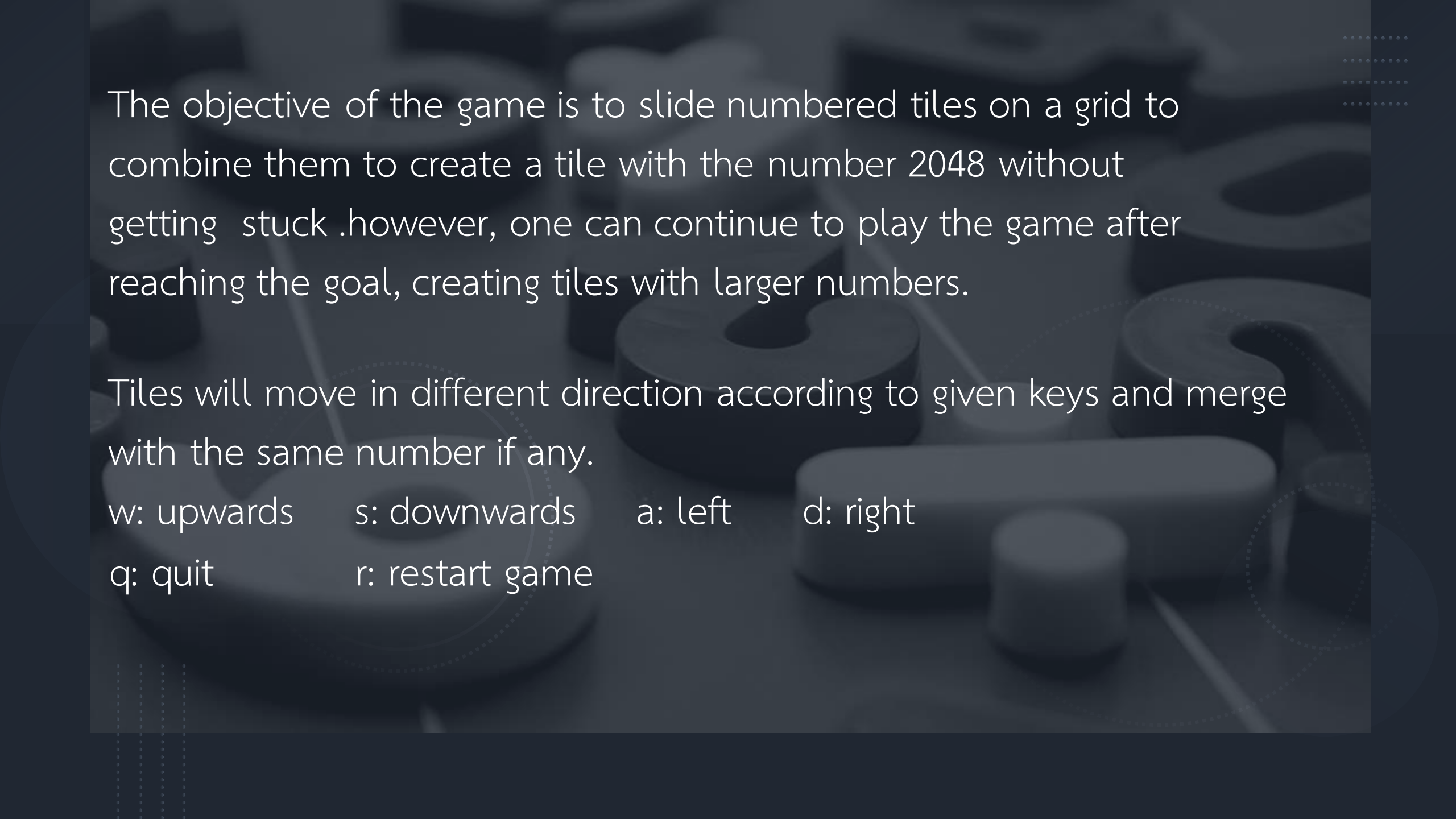# 2048 GAME

A CLASSIC PUZZLE

➢ 2048 is a single player ,very simple logical number game

This game is played on 4x4 grid with numbered tiles (multiples of 2) that slides when a player moves them using the four keys. Every turn, a new tile randomly appears in an empty spot on the board with a value of either 2 or 4.

If two tiles of the same number collide while moving, they will merge into a tile with the total value of the two tiles that collided.

The objective of the game is to slide numbered tiles on a grid to combine them to create a tile with the number 2048 without getting stuck .however, one can continue to play the game after reaching the goal, creating tiles with larger numbers.

Tiles will move in different direction according to given keys and merge with the same number if any.

w: upwards   s: downwards   a: left   d: right

q: quit   r: restart game

Solution:

The approach to this problem is a total brute force approach without using any extra libraries.
2-dimensional arrays and many other important concepts of c language have been used for shifting as well as merging the tiles.

```
Score:108
HighScore:108
----------------------------------------------------
    |   8   |       |       |       |
----------------------------------------------------
 32 |   4   |       |       |       |
----------------------------------------------------
 2  |       |       |       |       |
----------------------------------------------------
    |   4   |       |       |       |
----------------------------------------------------
    |       |   2   |       |       |
----------------------------------------------------
```

Panel 1:
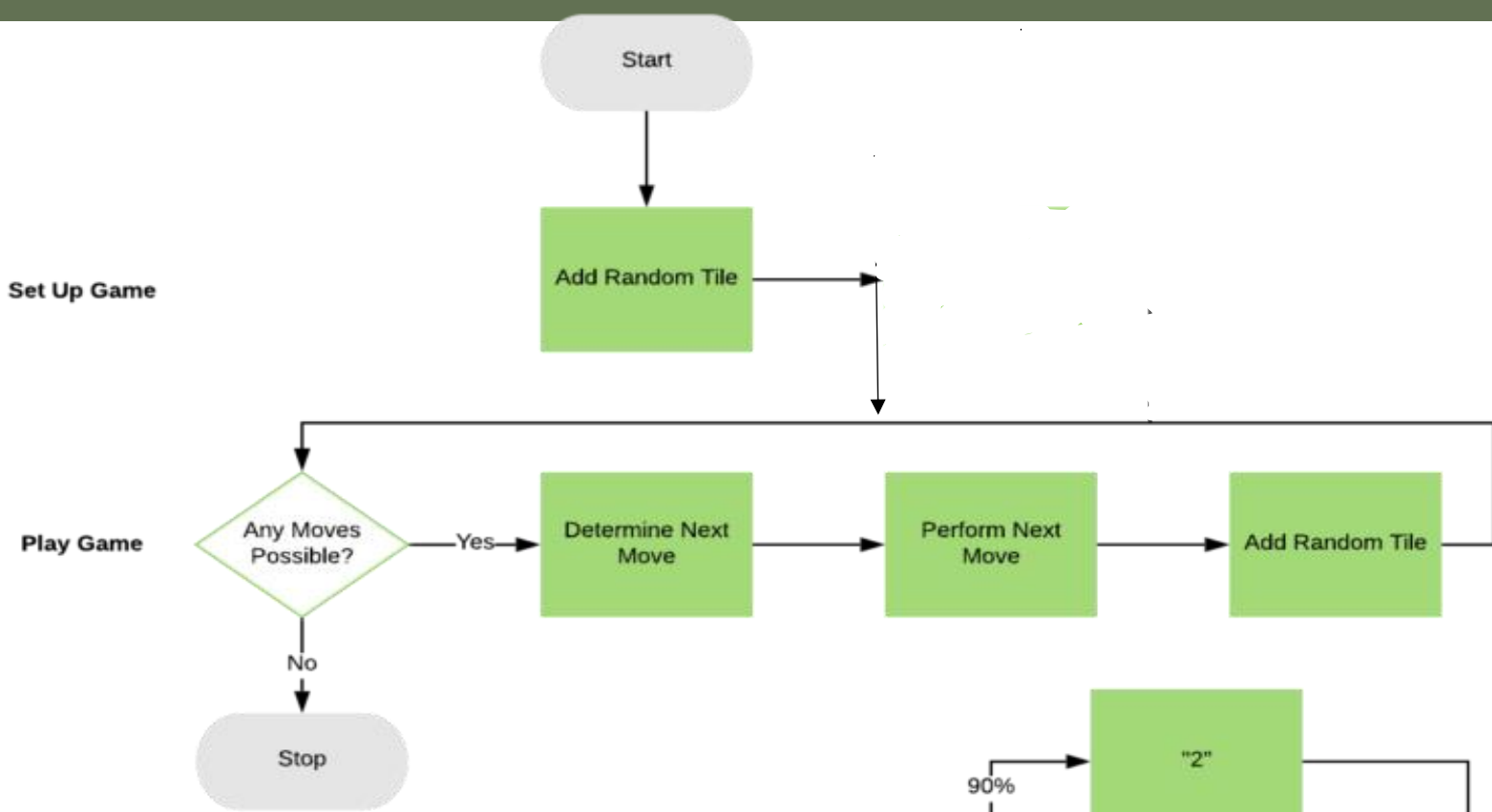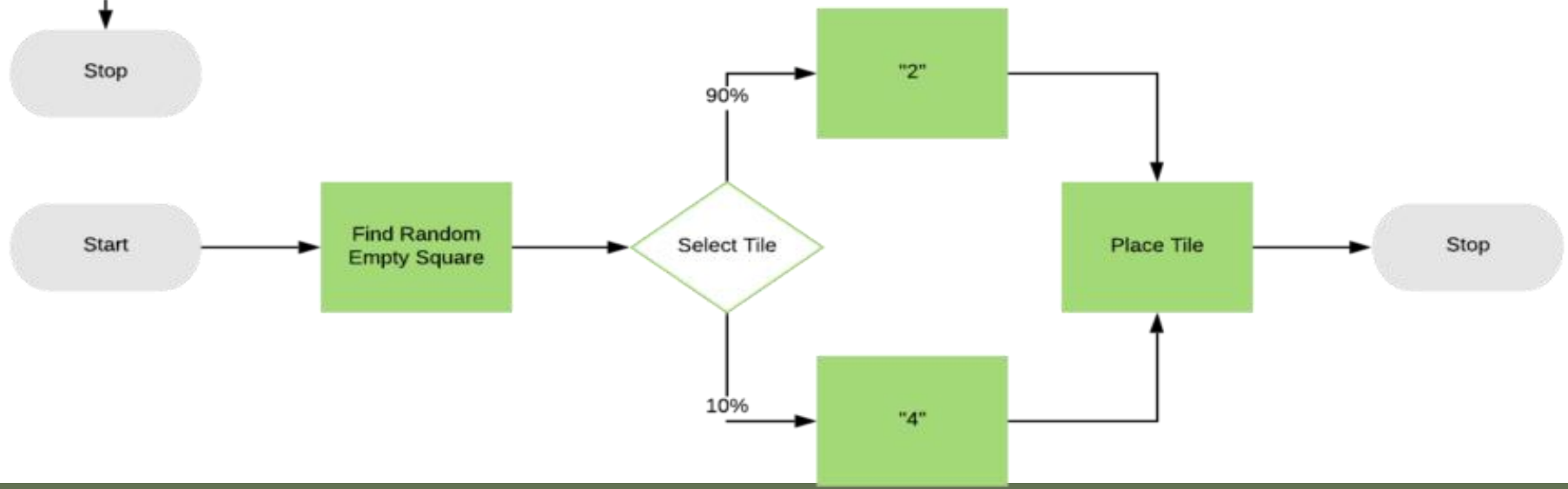
```
Welcome to 2048 Game :)

Controls :

w - move up      s - move down
a - move left    d - move right
r - reset        q - quit

******************************

1. Start Game
2. Quit
1

1. Easy
2. Medium
3. Hard

1

Best of luck!
```

Panel 2:

```
Score:120
HighScore:120
---------------------------------
  32 |    |    |    |
---------------------------------
  2 | 8 |    |    |
---------------------------------
  4 | 4 |    | 2 |
---------------------------------
  8 |    |    |    |
---------------------------------
x
Invalid!
Enter a valid key :w

Score:120
HighScore:120
---------------------------------
  32 | 8 | 2 | 2 |
---------------------------------
  2 | 4 |    |    |
---------------------------------
  4 |    |    |    |
---------------------------------
  8 |    |    |    |
---------------------------------
a
Score:124
```

Panel 3:

```
a
Score:1216
HighScore:1216
---------------------------------
  2 | 4 | 8 | 16 | 4 |
---------------------------------
  8 | 32 | 16 | 32 | 4 |
---------------------------------
  16 | 8 | 2 | 4 | 8 |
---------------------------------
  4 | 128 | 32 | 16 | 2 |
---------------------------------
  2 | 8 | 4 | 8 | 4 |
---------------------------------
a
GAME OVER :(

Better Luck Next Time

Your Score :1216

Maximum tile number :128

Do you want to play again? (y/n) :y

1. Start Game
2. Quit
```

Panel 4:

```
Score:72
HighScore:1216
---------------------------------
   |    |    |    | 4 |
---------------------------------
  4 |    |    |    |    |
---------------------------------
  2 | 8 | 8 |    |    |
---------------------------------
  4 |    |    |    |    |
---------------------------------
   |    |    |    |    |
---------------------------------
  8 | 8 | 16 | 2 | 2 | 4 |
---------------------------------
a
Score:108
HighScore:1216
---------------------------------
  4 |    |    |    |    |
---------------------------------
  4 |    |    | 4 |    |
---------------------------------
  2 | 16 |    |    |    |
---------------------------------
  4 |    |   |    |    |
---------------------------------
   |    |    |    |    |
---------------------------------
```

THANK-YOU

By : Muskan
1910990665