# 2048 Game

# Table of Contents

## Version history

| Sl No | Date | Version | Author |
|---|---|---|---|
| 1 | 07-Feb-2022 | 0.1 | Ch. S V Gani Prabhakar |

# 1. 2048 Game

2048 is played on a gray 4×4 grid, with numbered tiles that slide when a player moves them using the keys 1, 2, 3 and 4 as Left, Right, Up and Down respectively.

# 2. Flow chart

```
                         ┌───────┐
                         │ Start │
                         └───┬───┘
                             │
                  ┌──────────▼──────────┐
                  │ Fill the box with 2 or 4 │
                  └──────────┬──────────┘
                             │
                  ┌──────────▼──────────┐
                  │ Fill the box with 2 or 4 │◄──────────┐
                  └──────────┬──────────┘                │
                             │                            │
              ┌──────────────▼──────────────┐            │
              │  Taking input from user      │◄───────┐   │
              └──────────────┬──────────────┘         │   │
                             │                         │   │
                      ┌──────▼──────┐   YES   ┌──────────┐ │   │
                      │ Is input = 1?├────────►│ Selected │ │   │
                      └──────┬──────┘          │   Left   │ │   │
                             │ NO              └──────────┘ │   │
                      ┌──────▼──────┐   YES   ┌──────────┐ │   │
                      │ Is input = 2?├────────►│ Selected │ │   │
                      └──────┬──────┘          │   Right  │ │   │
                             │ NO              └──────────┘ │   │
                      ┌──────▼──────┐   YES   ┌──────────┐ │   │
                      │ Is input = 3?├────────►│ Selected │ │   │
                      └──────┬──────┘          │    Up    │ │   │
                             │ NO              └──────────┘ │   │
                      ┌──────▼──────┐   YES   ┌──────────┐ │   │
                      │ Is input = 4?├────────►│ Selected │ │   │
                      └──────┬──────┘          │   Down   │ │   │
                             │ NO              └──────────┘ │   │
              ┌──────────────▼──────────────┐              │   │
              │ Please, enter valid input    │──────────────┘   │
              └─────────────────────────────┘                  │
```

Shift in the direction and ADD — YES — Is GameOver ? — YES — End

NO (from Shift) → back to Taking input from user
NO (from Is GameOver?) → back to Fill the box with 2 or 4

### 3. Repository:

### 4. How to Run the Project

#### Prerequisites

–   Software: Python 3 and above, Node.
–   Operating System: Windows or Linux based.

#### Execution on console
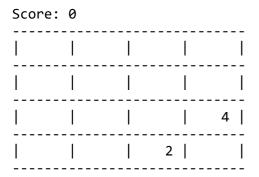
–   Please execute the following command: `python3 2048.py`

#### Execution on nodejs

–   Please go to ui_2048 folder
–   Please install node modules: `npm install`
–   Please execute the following command `npm start`

### 5. Sample Output Using Python

```
Note: The following output will be displayed when the game is started.

sh-3.2$ python3 2048.py

Score: 0
-----------------------------
|       |       |       |       |
-----------------------------
|       |       |       |       |
-----------------------------
|       |       |       |   4 |
-----------------------------
|       |       |   2 |       |
-----------------------------

Enter
1 --> left
2 --> right
3 --> up
4 --> down
```

Note: The following output will be displayed when the game is completed.

```
-----------------------------
|   4 |    2 |    8 |    4 |
-----------------------------
|   2 |    4 |   16 |    8 |
-----------------------------
|   8 |   16 |    2 |    4 |
-----------------------------
|   2 |    8 |    4 |    2 |
-----------------------------
Thanks for playing
Score: 128
```

## 6. Sample Output Using nodejs

```
sh-3.2$ cd ui_2048/

sh-3.2$ npm install

up to date, audited 64 packages in 1s

2 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities

sh-3.2$ npm start

> ather_2048game@1.0.0 start

> node index.js

Server is running at port 8123
```

- The following output will be displayed when the game is started.

# 2048

## Score: 0

| | 2 | | |
|---|---|---|---|
| | | 2 | |
| | | | |
| | | | |

- The following output will be displayed when the game is completed.

# 2048

## Score: 1388

| 4 | 8 | 32 | 8 |
|---|---|---|---|
| 16 | 32 | 64 | 128 |
| 8 | 2 | 16 | 4 |
| 2 | 8 | 32 | 2 |