

# SOFTWARE REQUIREMENT SPECIFICATIONS

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October 18, 2014

Autumn 2014

## Introduction:

This project aims at creating the game *Fibonacci 2048*. *Fibonacci 2048* is a variant of the popular PlayStore app *2048* which went viral earlier this year across the world. The goal of the player is to create a tile with the number  $F_{12} = 144$  on the playing grid, in accordance with the rules explained in the User Manual.

## Purpose:

The purpose of this project is to implement a C++ console version of the game *Fibonacci 2048*.

## System Requirements:

The whole program relies on complete integration of the hardware and software involved. Hence, it is paramount to have appropriate hardware interface for running the game. However, the system requirements for this fun game are not too much.

## Hardware Specifications:

- A minimum of 128 MB RAM.
- A minimum of 1 GHz processor.
- A basic input device, preferably a Keyboard.

## Software Specifications:

- Operating System of Windows 98 or above.
- OpenCV libraries on the host system of the program.
- A C++ compiler which can compile the game.

## References:

The list of references used in making this program are:

### Variants:

This program makes use of the classical version of *Fibonacci 2048*. The game can have many variants to make it more interesting. Here are some of them:

1. Grid Size: Although the  $4 \times 4$  grid is the most common, games with  $5 \times 5$  or larger grids exist in an attempt to create a tile with a number as large as possible.
2. Race against Time: Survive in the  $4 \times 4$  grid as long as possible. You will start with 15 seconds on the timer. Creating tiles with numbers larger than 3 give you additional time. The game ends when you run out of time.
3. X-Tile: The game begins in the usual setting but with an additional tile marked  $X$ , which cannot be merged with any other tile.
4. Undo mode: Made a wrong move and you're upset about it because it has ruined your game? Try the Undo mode. The player has the option to undo his/her last move in the game.
5. Grid Shape: The square is the most popular grid shape. However, the grid shape can be a honeycomb with hexagonal tiles. In this version, the tiles may slide in either of the 6 directions given by the sides of a regular hexagon. i.e, East,  $60^\circ$  North of East,  $60^\circ$  North of West, West,  $60^\circ$  South of West and  $60^\circ$  South of East.
6. Three Dimensions: Three  $4 \times 4$  grids stacked up. The eligible moves remain the same, however, the configuration of all three grids changes when you make a move. The goal is to create  $F_{12} = 144$  in all three grids.

For Beta versions, we can also change the code of the program to produce the variants and make the game more interesting.