

DRAFT USER MANUAL

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October 18, 2014

Autumn 2014

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Introduction:

This user manual aims at helping the player understand the game *Fibonacci 2048*. *2048* is a single player puzzle game which went viral earlier this year on PlayStore. It was created by a 19 year old Italian web designer, Gabriele Cirulli. *Fibonacci 2048* is a modification of *2048*, introducing the Fibonacci Sequence. The Fibonacci Sequence is defined by the recursion,

$$F_{i+1} = F_i + F_{i-1} , \text{ for } i \geq 2$$

with the initial two terms being $F_1 = 1, F_2 = 1$.

The objective of the game is to create a tile with the number $F_{12} = 144$ on the 4×4 playing grid.

Gameplay:

Fibonacci 2048 is played on a 4×4 grid, with numbered tiles which slide smoothly across rows and columns when the player moves them using the four arrow keys. The game begins with only two tiles on the board, each of whose values are either 1 or 2. Each turn, a new tile will randomly appear in an empty spot on the board with value either 1 or 2. The tiles slide as far as possible in the chosen direction until they are stopped by either another tile or the boundary of the grid. The numbers on the tiles are terms of the Fibonacci Sequence. If two tiles which are consecutive terms of the Fibonacci Sequence collide, i.e, if F_k and F_{k+1} collide, they merge into a single tile with the number F_{k+2} . The new tile formed cannot merge with another tile in the same move. You win the game when a tile with the number $F_{12} = 144$ is created; however you can continue playing to create tiles with larger numbers. When the player cannot make a legal move, i.e, there are no empty cells on the grid or no adjacent tiles with consecutive terms of the sequence, the game ends.

Controls:

You may slide tiles in either of the four directions, North, South, East or West.

- Sliding Up (\uparrow) : Letter Key - W
- Sliding Down (\downarrow) : Letter Key - S
- Sliding Left (\leftarrow) : Letter Key - A
- Sliding Right (\rightarrow) : Letter Key - D

Scoring and Time:

The scoreboard will keep track of the players score. The player begins with score equal to zero and is incremented, whenever two tiles combine, by the number of the new tile. The timer will keep track of the time elapsed. If the player successfully creates the tile $F_{12} = 144$, this time is recorded as the time taken to complete the game and the timer resets to 00 : 00 in the event that the player decides to try his luck further.