INTERNATIONAL INFORMATION TECHNOLOGY UNIVERSITY

2048 in PYTHON language

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OUR PLAN

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Step 2

ABOUT<<2048>>

Step 3

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Step 4

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Step 5

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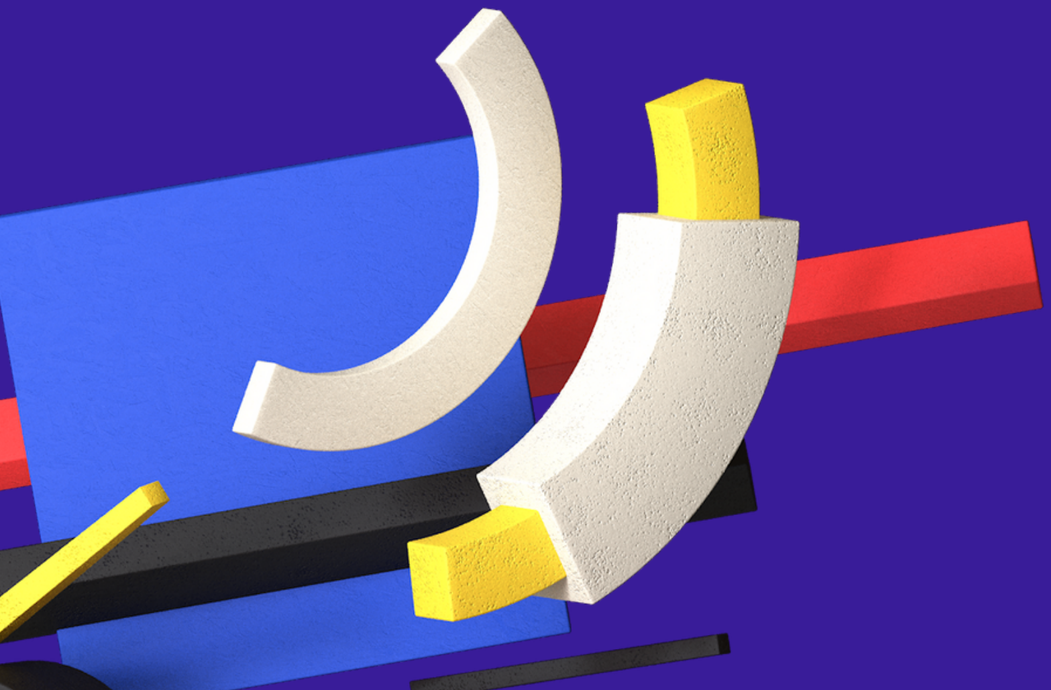
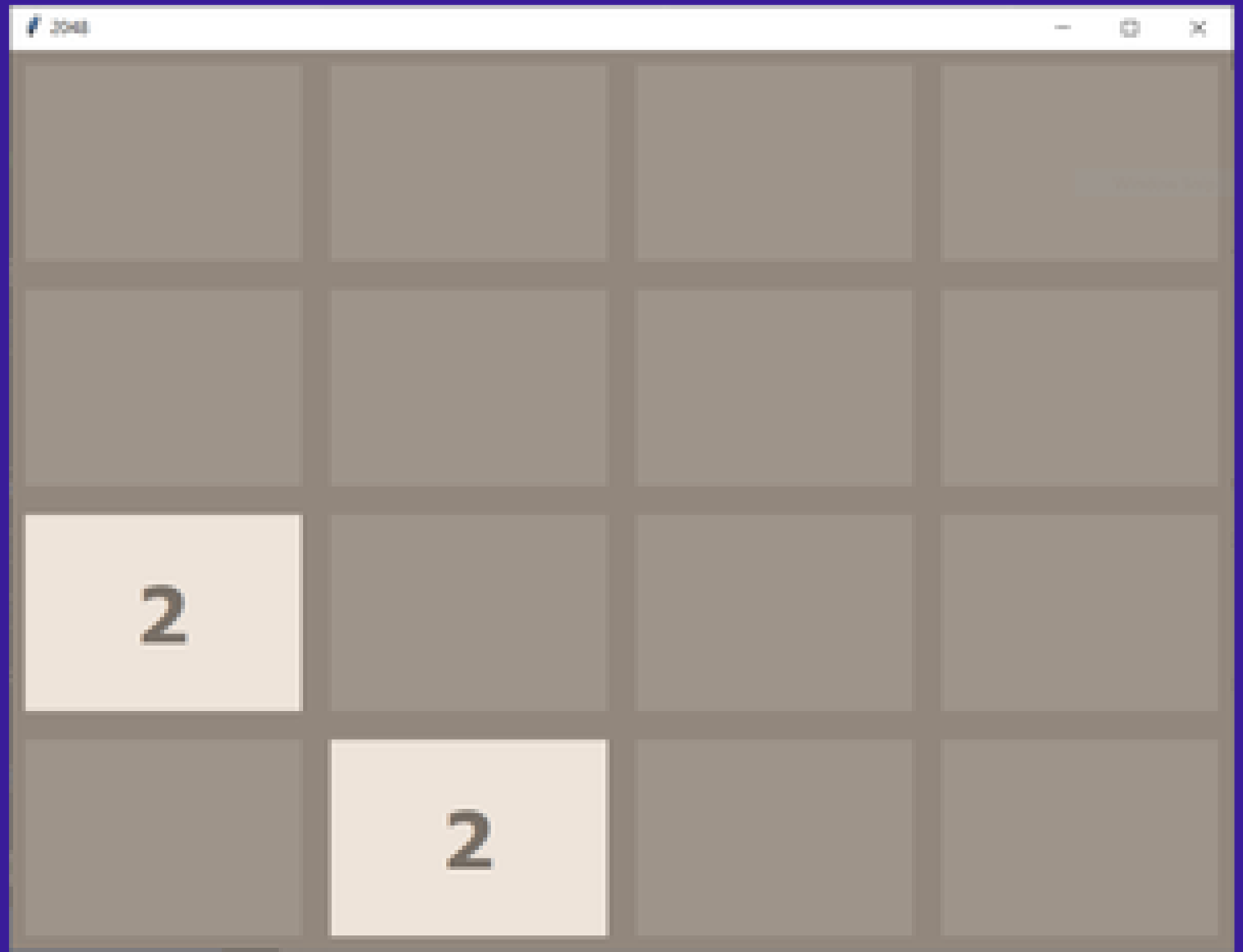
HISTORY <<2048>> GAME

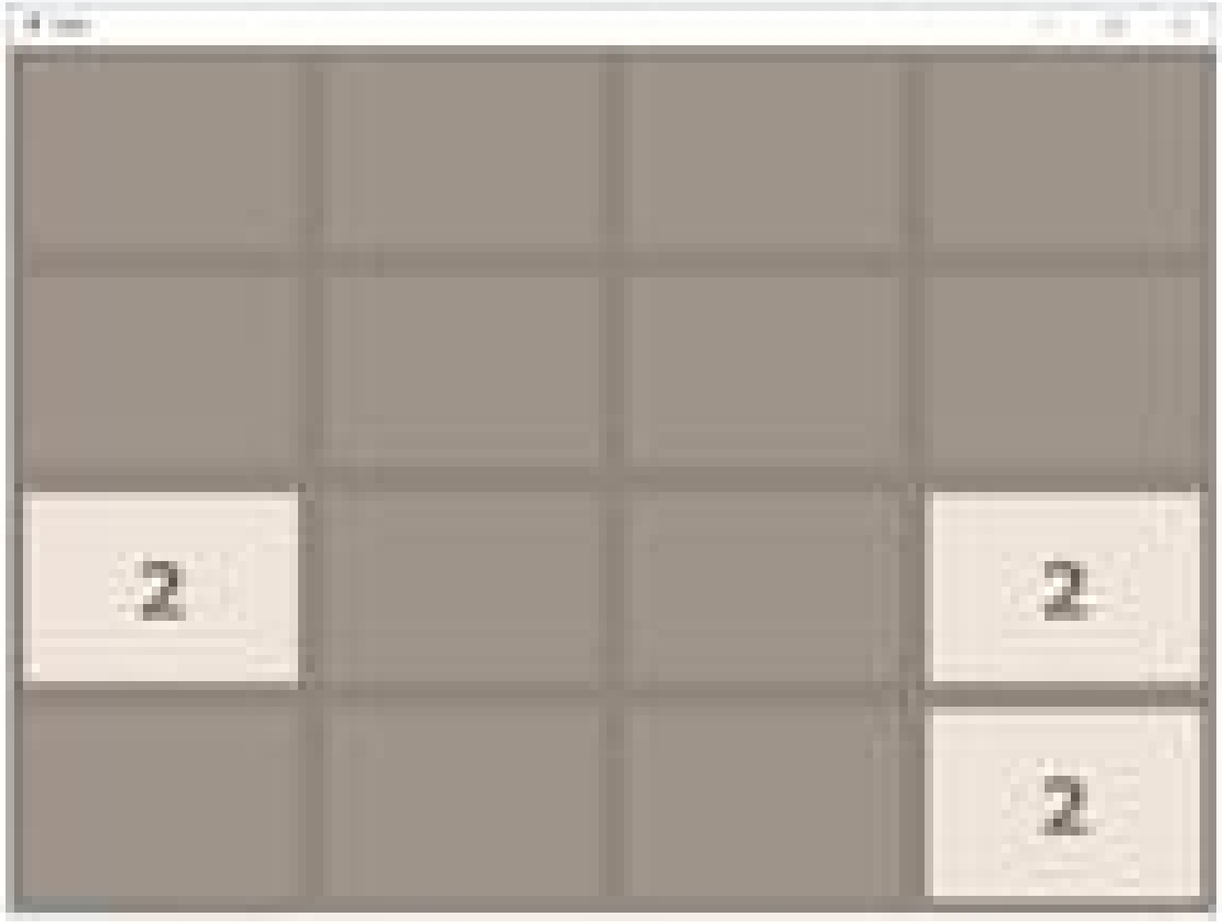


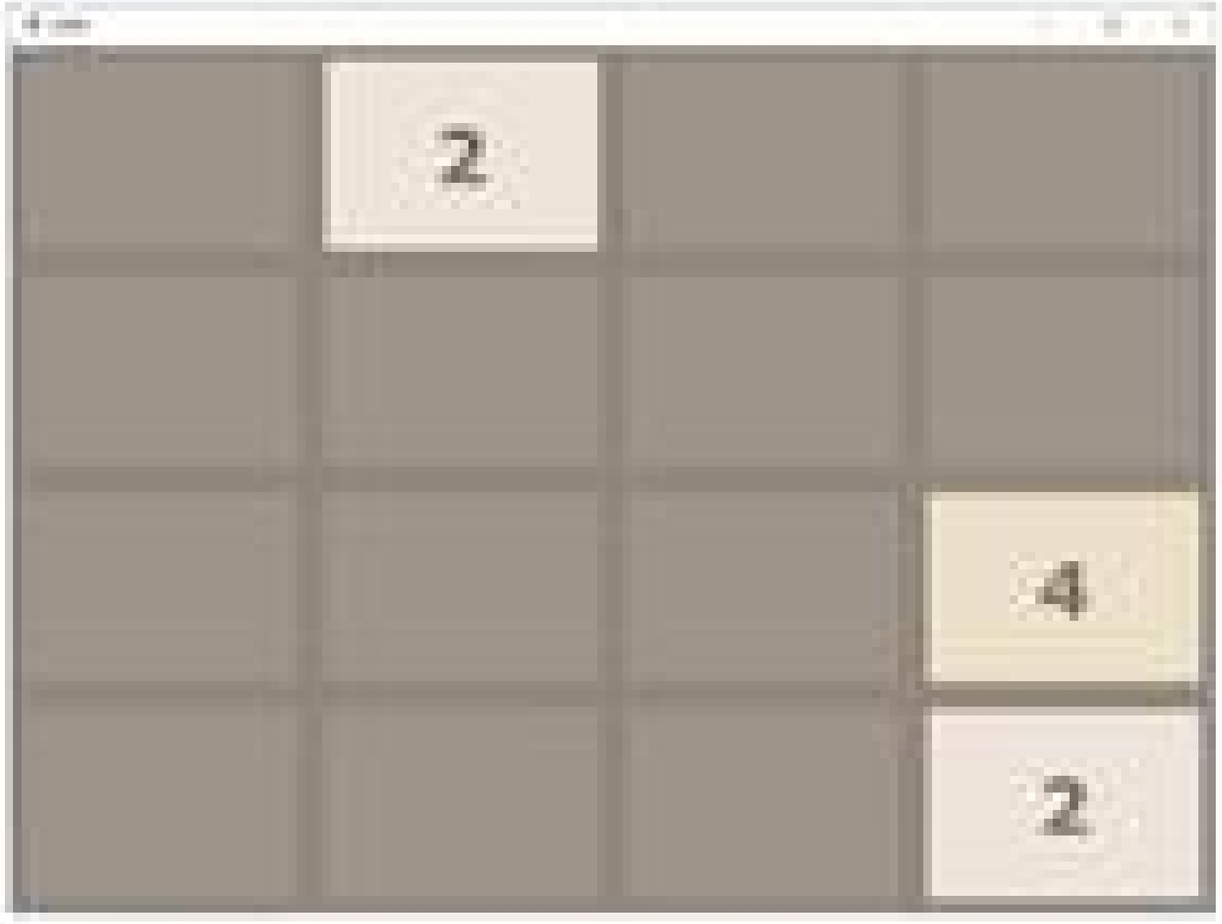
- 2048 is a browser game written by 19—year-old Italian developer Gabriele Cirulli in the JavaScript programming language.The game "2048" was written in less than two days as an exercise in programming according to the author.

There is a 4*4 grid that can be filled with at least some number. Initially, two random cells are filled with the digits 2. The other cells are empty.



We have to press any of the four keys to move up, down, left or right. .We press any button, the elements of the cell move in this direction so that if any two similar numbers are contained in a given specific row or column, they get the addition and the last cell in this direction will be filled with this number.

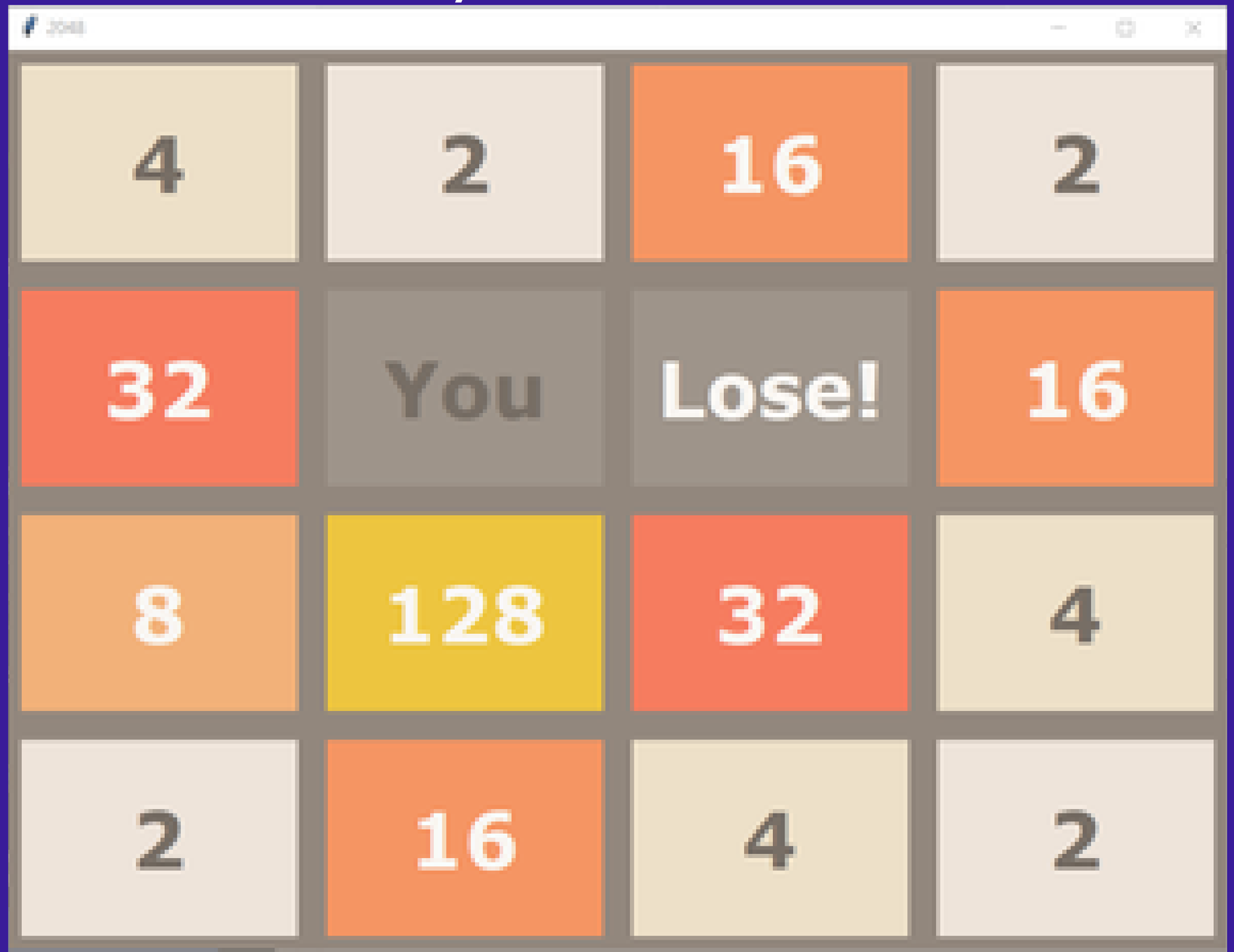




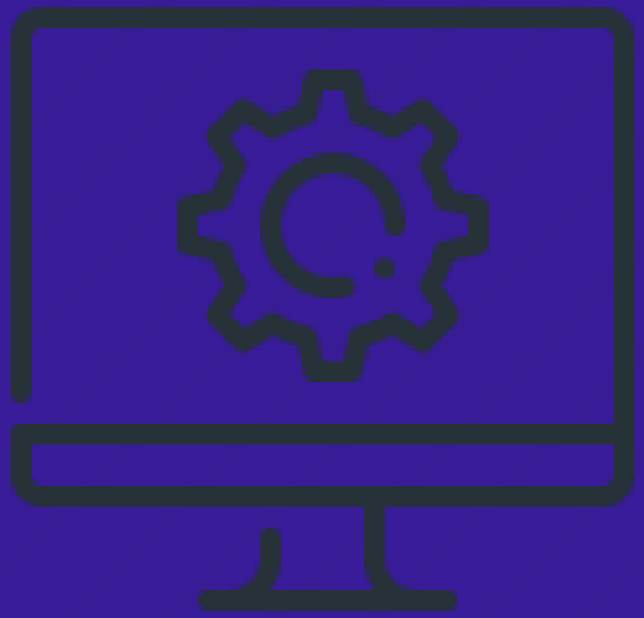
After this grid exhibition, any random empty cell is accumulated by the number 2.

Following the process described above, we must double the elements by adding and getting 2048 in any of the cells. If we can do this, we will win.

But if during the game there is no empty cell left to fill in the new 2, then you will lose.



Your screens show the part of the code that is responsible for the movement of blocks in the game.There are 4 directions here:right, left, up, and down.



```
92  # Логика движения
93
94  def up(game):
95      game = transpose(game)
96      game, done = cover_up(game)
97      game, done = merge(game, done)
98      game = cover_up(game)[0]
99      game = transpose(game)
100     return game, done
101
102
103 def down(game):
104     game = reverse(transpose(game))
105     game, done = cover_up(game)
106     game, done = merge(game, done)
107     game = cover_up(game)[0]
108     game = transpose(reverse(game))
109     return game, done
110
111
112 def left(game):
113     game, done = cover_up(game)
114     game, done = merge(game, done)
115     game = cover_up(game)[0]
116     return game, done
117
118
119 def right(game):
120     game = reverse(game)
121     game, done = cover_up(game)
122     game, done = merge(game, done)
123     game = cover_up(game)[0]
124     game = reverse(game)
```

```
# Команды движения
        game.commands = {
            binds.up: up,
            binds.down: down,
            binds.left: left,
            binds.right: right,
            binds.w: up,
            binds.s: down,
            binds.a: left,
            binds.d: right,
            binds.num8_up: up,
            binds.num5_down: down,
            binds.num4_left: left,
            binds.num6_right: right,


        }

        game.grid_cells = []
        game.cell_size()
        game.matrix = new(4)
        game.step = []
        game.new_cells()

        game.mainloop()
```

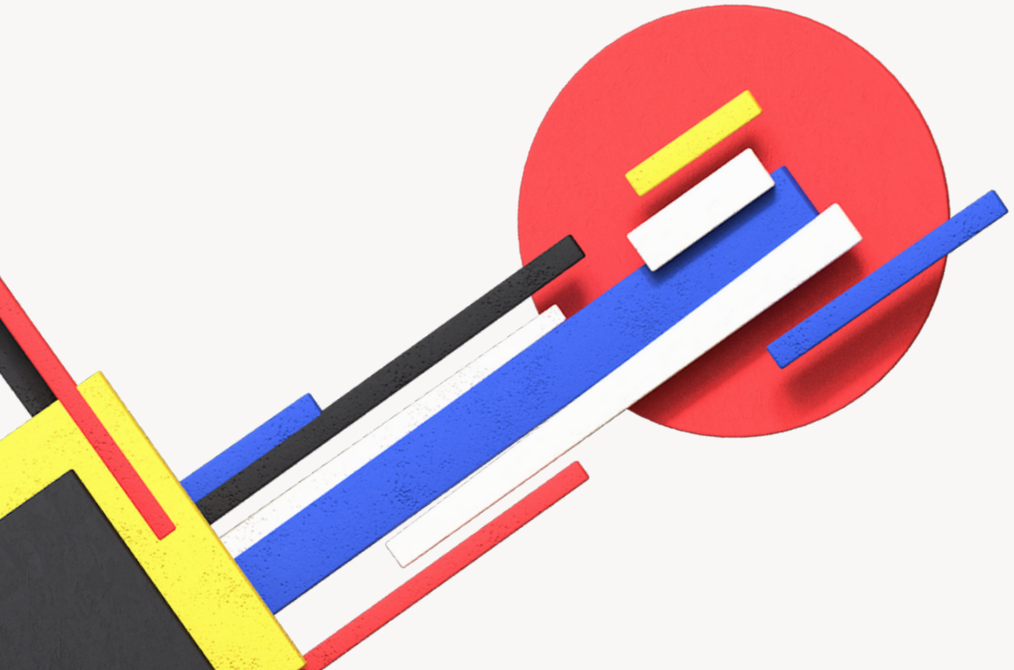
And now you can see the design of our game.There were separate colors written for each number.In order for the game to be easy to distinguish and for the game to be beautiful.

```
number_color = {
    2:      "#7a7167",
    4:      "#7a7167",
    8:      "#f7f4f0",
    16:     "#f7f4f0",
    32:     "#f7f4f0",
    64:     "#f7f4f0",
    128:    "#f7f4f0",
    256:    "#f7f4f0",
    512:    "#f7f4f0",
    1024:   "#f7f4f0",
    2048:   "#f7f4f0",
    4096:   "#756d64",
    8192:   "#f7f4f0",
    16384:  "#756d64",
    32768:  "#756d64",
    65536:  "#f7f4f0",
}

cell_color = {
    2:      "#ebe0d5",
    4:      "#ebddc5",
    8:      "#f0af78",
    16:     "#f59462",
    32:     "#f57a5d",
    64:     "#f55e3b",
    128:    "#ebcd71",
    256:    "#ebca60",
    512:    "#ebc650",
    1024:   "#ebc33f",
    2048:   "#edc22f",
```

Here it was written when pressing the key, an action was performed.The player can play with 3 keyboard shortcuts.The first is the arrows.The second letter is a,b,c, D. Note these are the numbers 4,6,8,5.

```
# Клавиши для выполнения задач

escape = "Escape"
back = "b"

up = "Up"
down = "Down"
left = "Left"
right = "Right"

w = "w"
s = "s"
a = "a"
d = "d"

num8_up = "8"
num5_down = "5"
num4_left = "4"
num6_right = "6"
```

THE IMPORTANCE OF THIS GAME



1 logical thinking

2 strategic planning skills

3 spatial imagination

THANK YOU FOR LISTENING