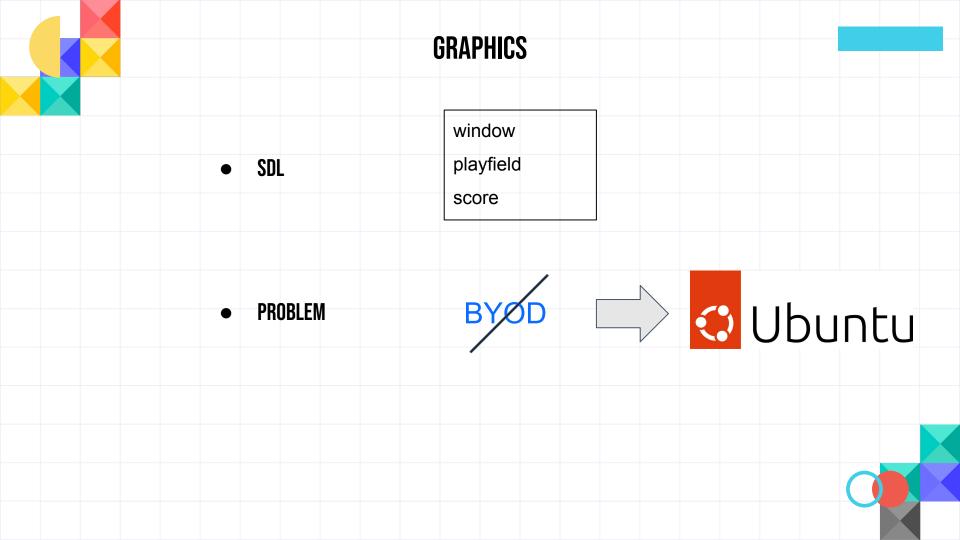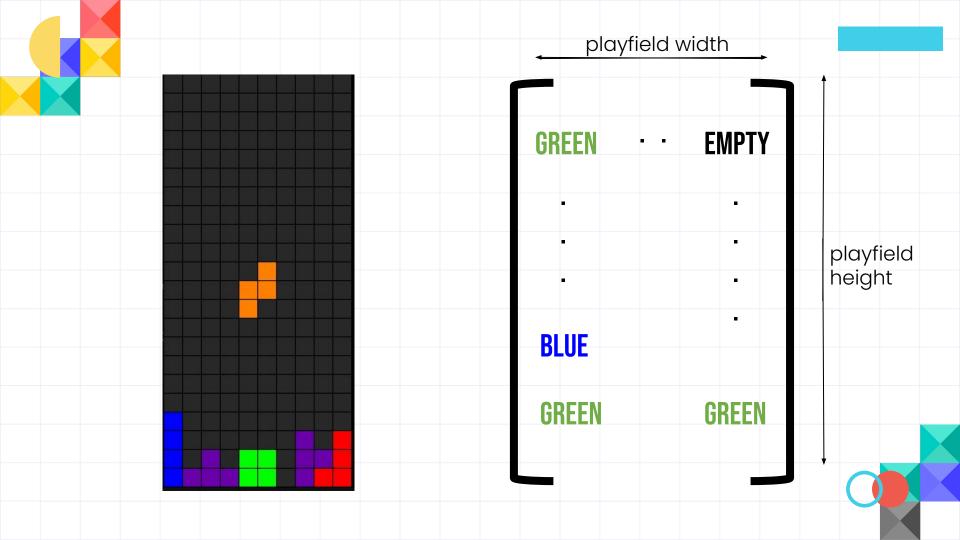# TETRIS PROJECT

Gaspard MATIC
Julien SEGONNE

- **ALLOCATION OF THE TASKS**

together

Gaspard

Julien

- **GIT ENVIRONMENT**

push

pull

- **STRUCTURE OF THE CODE**

.c
.h
headers
variables

GRAPHICS

- **SDL**

```
window
playfield
score
```

- **PROBLEM**

BYOD ➡ Ubuntu

playfield width

$$\begin{bmatrix} \text{GREEN} & \cdots & \text{EMPTY} \\ \vdots & & \vdots \\ \vdots & & \vdots \\ \vdots & & \vdots \\ \text{BLUE} & & \\ \text{GREEN} & & \text{GREEN} \end{bmatrix}$$

playfield height

CURRENT TETROMINO

FUTUR TETROMINO

POSITION NOT POSSIBLE :
- x outside of the playfield
- y outside of the playfield
- another tetromino

CURRENT TETROMINO

FUTUR TETROMINO

SOLUTION : TETROMINO STRUCT

```c
typedef struct {
    int x;
    int y;
} block;

typedef struct {
    block coords[4];
    Color_Block couleur;
} tetromino;
```
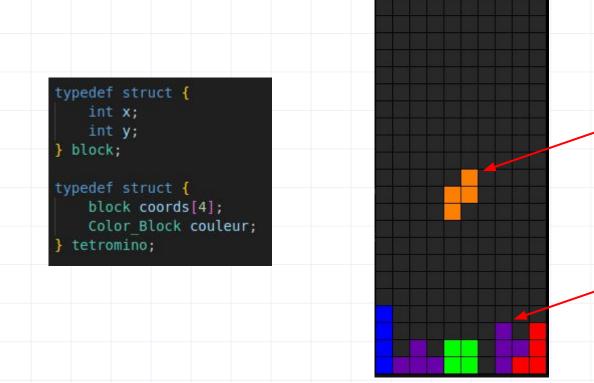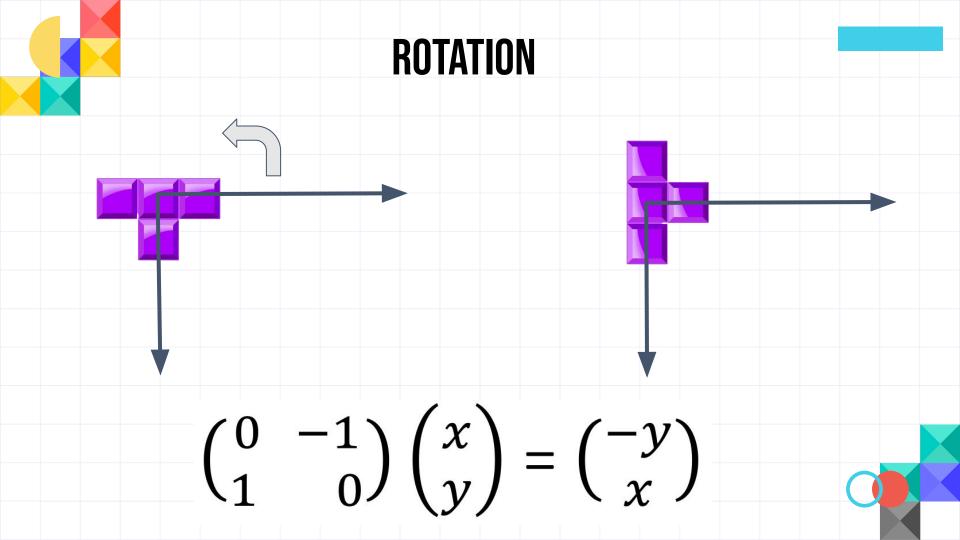

TETROMINO STRUCT

IN THE ARRAY

ROTATION

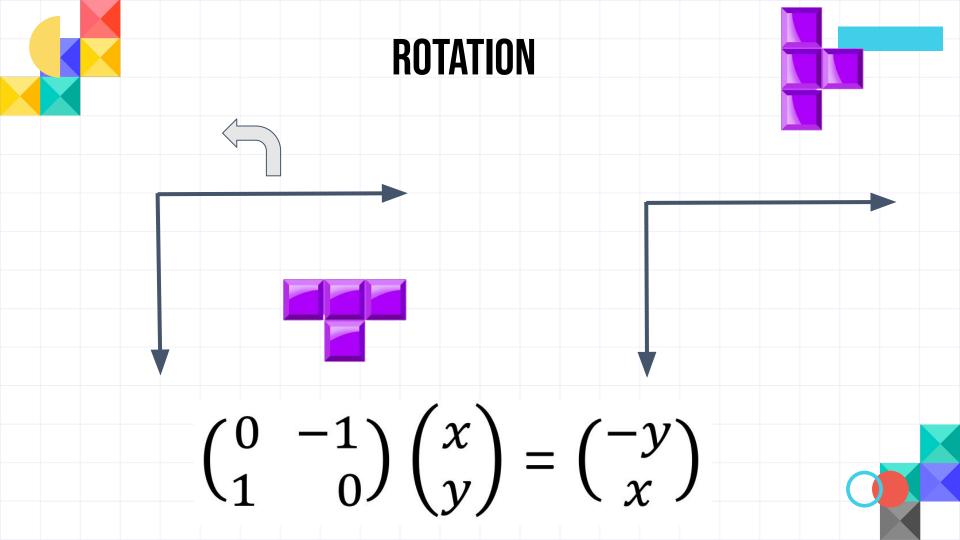$$\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} -y \\ x \end{pmatrix}$$

$$\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} -y \\ x \end{pmatrix}$$

```
for (int i =0; i<4;i++) {    //centrage
    tetrominoFutur.coords[i].y = tetrominoFutur.coords[i].y - tetrominoCourant.coords[0].y ;
    tetrominoFutur.coords[i].x = tetrominoFutur.coords[i].x - tetrominoCourant.coords[0].x ;
}

for (int i =0; i<4;i++) {    //rotation
    temp = tetrominoFutur.coords[i].x ;
    tetrominoFutur.coords[i].x = -tetrominoFutur.coords[i].y ;
    tetrominoFutur.coords[i].y = temp ;
}

for (int i =0; i<4;i++) {    //remet a la place
    tetrominoFutur.coords[i].y = tetrominoFutur.coords[i].y + tetrominoCourant.coords[0].y ;
    tetrominoFutur.coords[i].x = tetrominoFutur.coords[i].x + tetrominoCourant.coords[0].x ;
}
```

ROTATION

$$\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} -y \\ x \end{pmatrix}$$

DISPLAYING THE SCORE

HARD MODE

- BOOLEAN HARDMODE

- COLORS CHANGED

- SPEED INCREASED

SPACE

MUSIC

- EXTENSION SDL_MIXER

- MAKEFILE MODIFIED → LINK THE EXTENSION

THANKS !

THANKS !