LPOO: Final Project Intermediate Checkpoint Report

Authors:
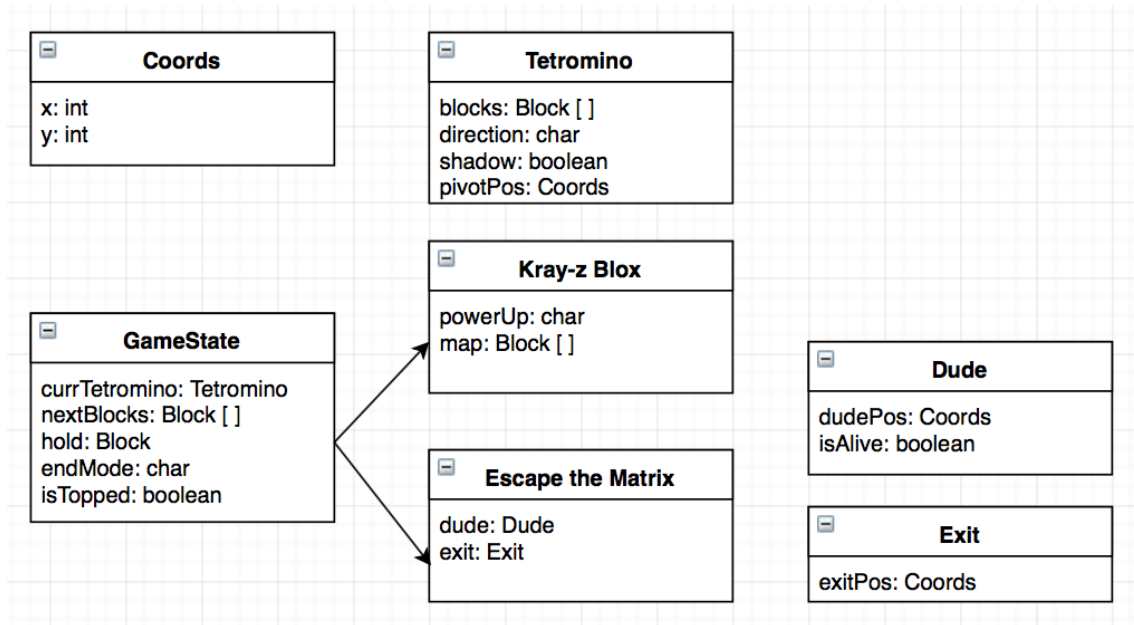
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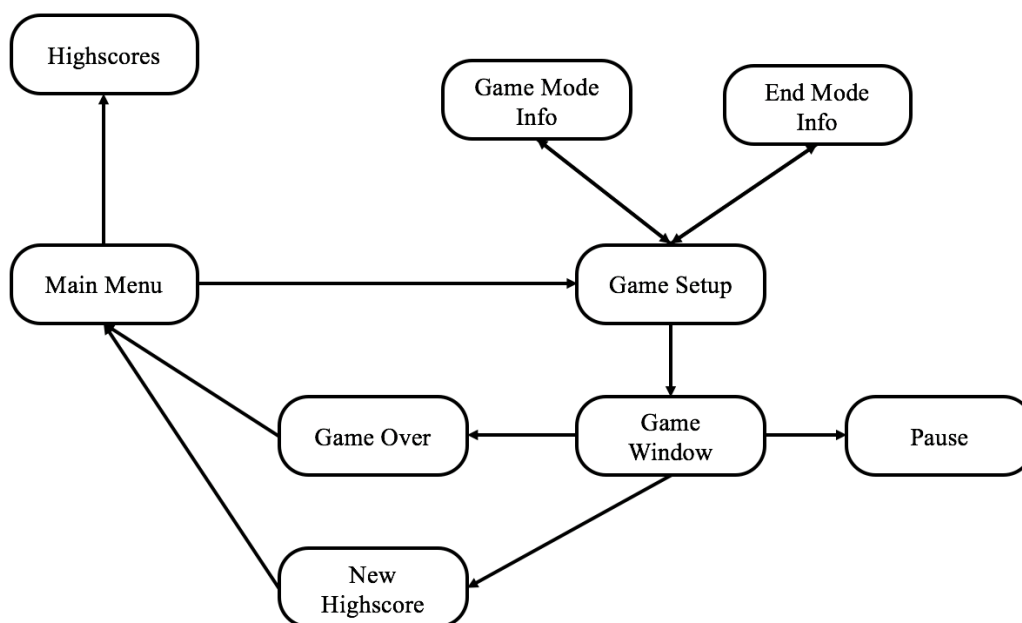
Architecture Design

- UML (Class/Package Diagram)

Coords

x: int
y: int

Tetromino

blocks: Block [ ]
direction: char
shadow: boolean
pivotPos: Coords

Kray-z Blox

powerUp: char
map: Block [ ]

GameState

currTetromino: Tetromino
nextBlocks: Block [ ]
hold: Block
endMode: char
isTopped: boolean

Escape the Matrix

dude: Dude
exit: Exit

Dude

dudePos: Coords
isAlive: boolean

Exit

exitPos: Coords

- Behavioural Aspects

Highscores

Game Mode Info

End Mode Info

Main Menu

Game Setup

Game Over

Game Window

Pause

New Highscore

- Expected Design Patterns
  - Singleton: The main game class will be initialized only once (per game), being accessed throughout the code.
  - Template Method: Used to implement different game modes, we use a generic game class for the basic rule set, then create child classes for the diferente game modes.
  - Decorator: Used to implemente different Blocks, (game mode: Kray-Z Blox)
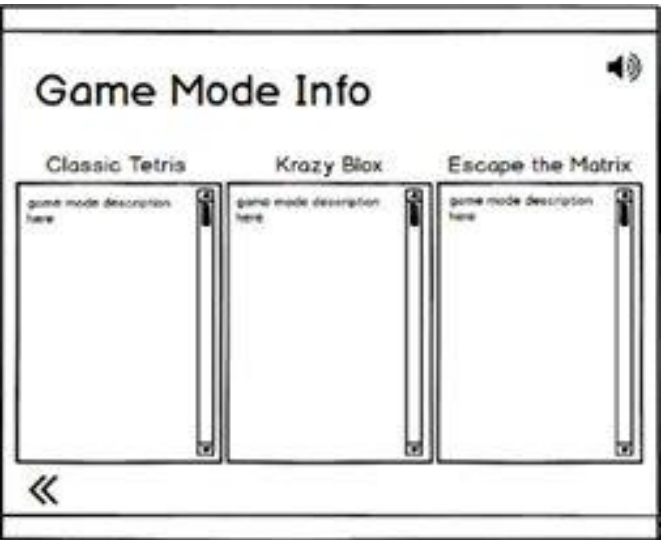
GUI Design

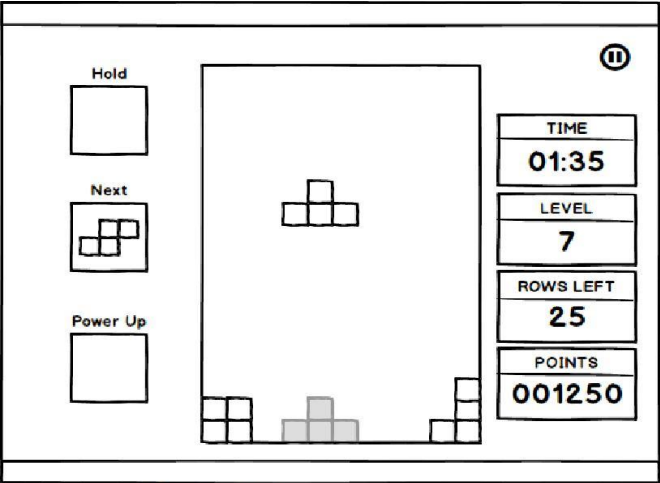Firstly the two Start Screens, Desktop and Android version respectively:
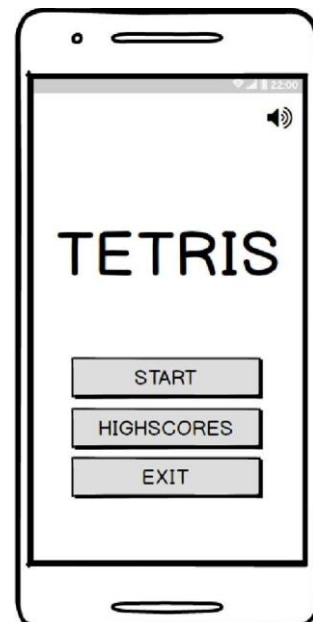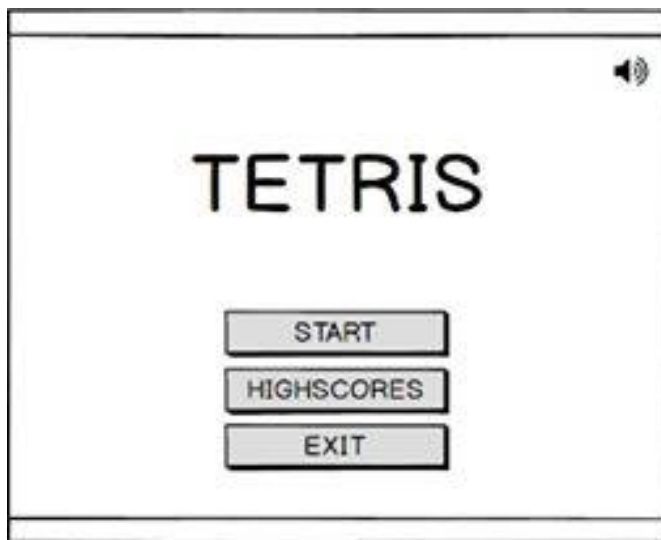
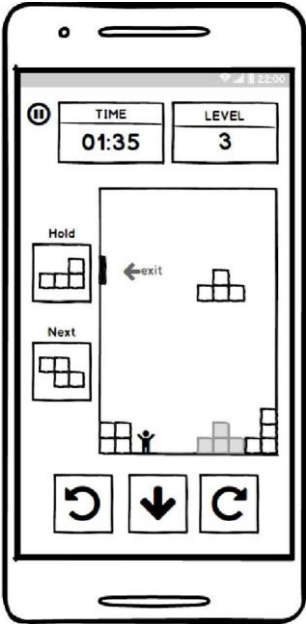Pressing the Start Button, leads to the Game Setup Menu:
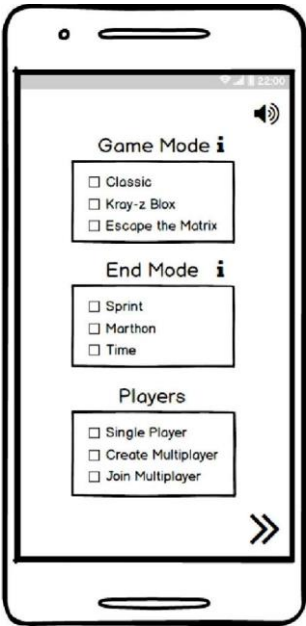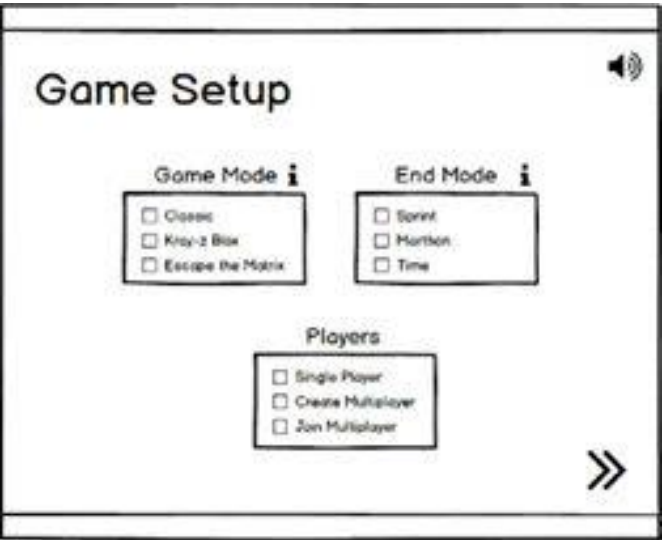
The i's next to the diferente windows display a bit more information to the user:

Pressing the arrows at the bottom of the screen takes you back to the Game Setup Menu. Pressing the arrows at the bottom of that screen starts the game.

some aspects may be altered according to
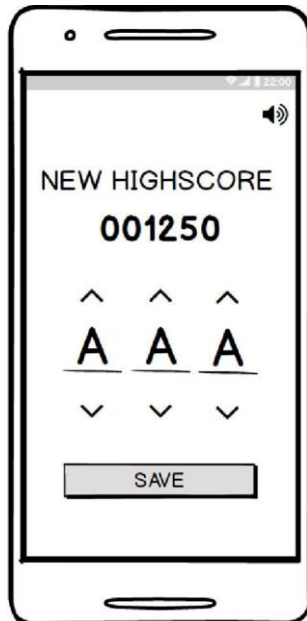the game mode and end mode selected

If the user beat one of the top 10 scores in the specified category, the New Highscore Menu will pop up:
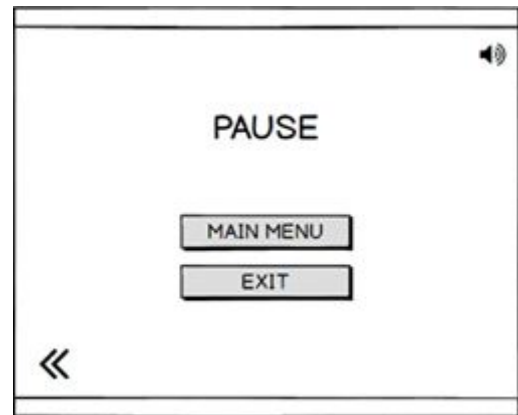

NEW HIGHSCORE: 001250

A A A

SAVE

Once the user clicks/presses save, the game will return to the main menu.

Highscore screen (Android Version):   Pause (Desktop Version):

Test Design: Unit Testing

- Test if the game ends when the Stack reaches the "ceiling";
- Test (Sprint Mode): if the game ends after a set ammount of "lines" have been popped;
- Test (Timed Mode): if the game ends after a set ammount of time has passed;
- Test (Kray-Z Blox): Specific test for each power up/down;
- Tests (Escape the Matrix):
  - If a block landing on the Dood will kill it;
  - If by saving the Dood another leve lis generated;
- Test Different Inputs;