COMP10062: Assignment 1

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The Assignment: Arkanoid Screen

This assignment is about using variables, data types, loops, if statements, and FX Graphics to draw a single screen from the game “Arkanoid” using parameters from the user.

Setup

Use the FXGraphicsTemplate for this assignment. Change the class name to something meaningful and change the window title, and size of the stage to whatever you want.

The Arkanoid screen (see picture below) is divided into two *regions*.

- The game region contains the bricks, ball and paddle.
- The display region contains the player’s score, what level they are on, and the high score.

You can decide where to put these two regions, but be sure there is a clear separation.

Input

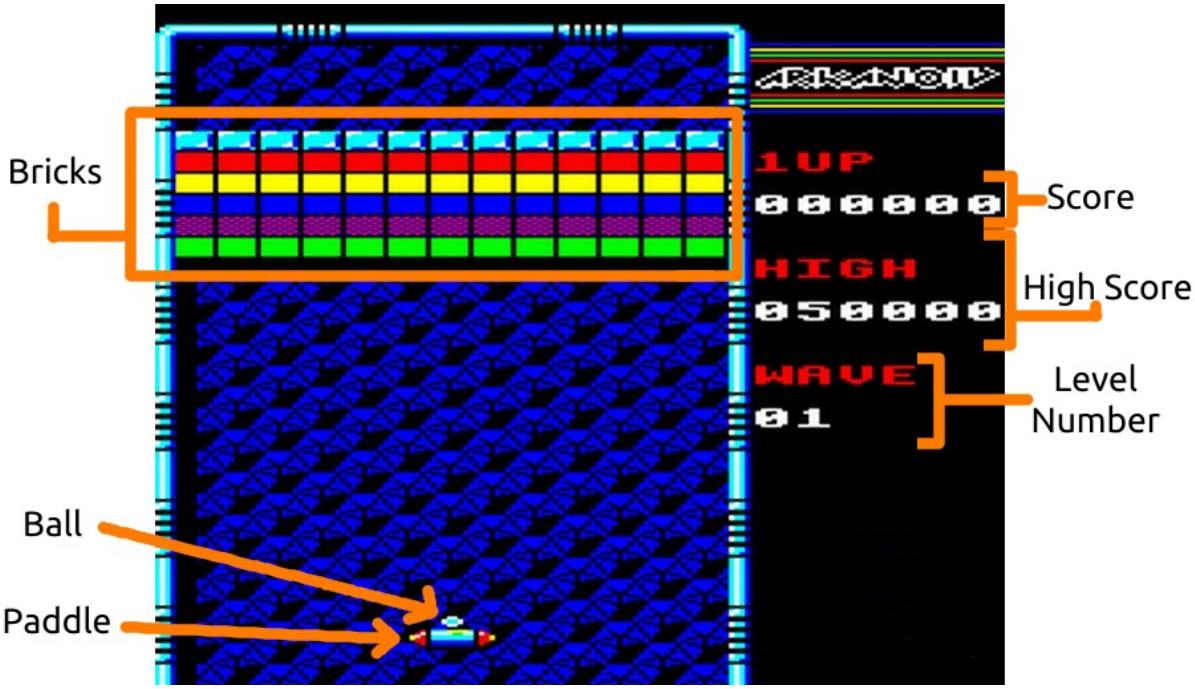
When your program runs, you should start by having a dialog with the user using standard input (don’t show the JavaFX stage until after this dialog is over). Ask the user:

1. How many rows and columns of bricks they want.
2. What the current score is, what the high score is, and what level (or “wave”) they are on.
3. The ball position
4. The paddle x position

Make sure the user enters values that will look good (e.g. between 1 and 10 for rows and columns). In the case of the ball and paddle, ensure the user enters values that are inside the game region (as given above). If the current score is greater than the high score that the user entered, make the high score with the current score. Tell the user in each prompt what the range is and make them repeat each input until they get it right.

Output

Now draw the game using the values entered by the user. You should have a grid of bricks, a ball, a paddle, the current score, high score and level or “wave”, as well as something separating the game and display regions.



NOTE: Your output does not have to look like the image shown above, which is a screenshot from the 1986 Taito release of Arkanoid for the Nintendo Entertainment System. You may use simple shapes such as circles and rectangles for the graphical elements. You're not going to be graded on your artistic skills!

Tip: If you know the `top` y-location of your brick grid and the `height` of each brick, you can create a loop for the rows (`row` = 0 to rows-1). The Y location of each row is `top + row * height`. You can use the same trick to find the location of the columns within each row.

Second Tip: The starting position to begin laying out bricks is not input by the user, so you can make that a constant!

Extra challenge 1: Replace some of your simple shapes with image files you find on the internet.

```
Image img = new Image("imagename.jpg");
gc.drawImage(img, x, y);
```

Extra challenge 2: Use the `FXAnimationTemplate` instead and add some animation effects such a moving paddle and ball, or a score that ticks up. Maybe you could even figure out a way to add sound effects…

Documentation Standards

Don't forget to follow the Documentation Standards for the course (i.e. Javadoc commenting, meaningful variable and class names, consistent indenting). See **Documentation Standards** on eLearn.

Handing In

You have approximately 1 week to complete this assignment. See the due date and time on the drop box. Hand in by attaching a zipped version of your **.java** (not .class) file to the drop box.

Evaluation

Your assignment will be evaluated for performance (40%), structure (40%) and documentation (20%) using the rubric in the drop box.