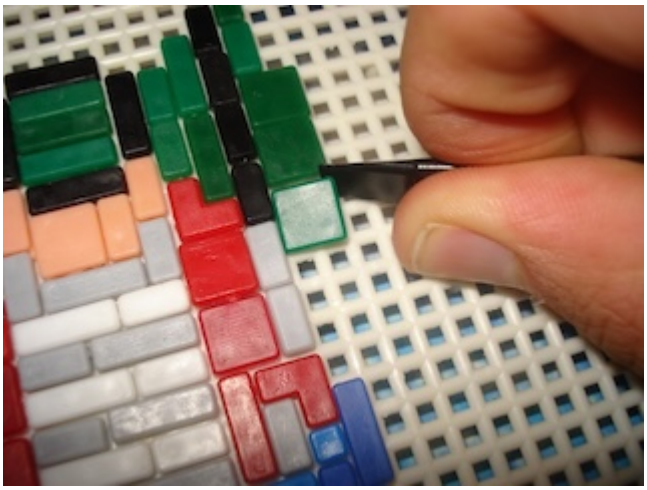
Starting IntelliJ IDEA instructions

(after performing previous steps, Windows is started and you should see the blue Windows screen)

- Start IntelliJ IDEA via desktop icon or via start-menu
- Select “Open project”
- Select on the U-drive the folder “Ministeck” and select open
- You are good to go…

Introduction to Programming exam: Ministeck

To build this test, you will create a mini mosaic (Ministeck) application. Ministeck is a hobby where you place plastic mosaic tiles on a base plate to create various figures. Within the assignment, we use a limited set of tiles.



When the user starts the application, a menu must be displayed. Within the menu, various options can be selected. These options are explained below. A method for printing the menu text, namely `printMenu()`, is already available in the solution. The menu displays the following options and functionalities:

```
Welcome to Ministeck!
---------------------
1) Read all bricks
2) Print all bricks
3) Count the bricks
4) Draw the Ministeck image
0) Exit application
What would you like to do?
```

If the user types `0` the program will stop. If an option that doesn't exist is chosen, an error message will be displayed, and a new choice will be requested.

```
Welcome to Ministeck!
---------------------
1) Read all bricks
2) Print all bricks
3) Count the bricks
4) Draw the Ministeck image
0) Exit application
What would you like to do? 5
Not a valid choice. Please try again!
```

Note: Initially, no tiles will have been read. After choosing menu option 1 and successfully reading tile data, the count should match the number of tiles in the CSV file.

Option 1: Read bricks from bricks.csv

The application will read the file `bricks.csv` and add all the tiles mentioned in the file. Each tile is squared and takes up 1 cell (1 column by 1 row). A tile has a color and a position (row and column) where the tile should be placed. All the tiles together form an image, which we will draw later in the program.

Ensure that the first line of the file is skipped when reading. Also, correctly configure the CSV separator symbol. Print the total number of tiles read.

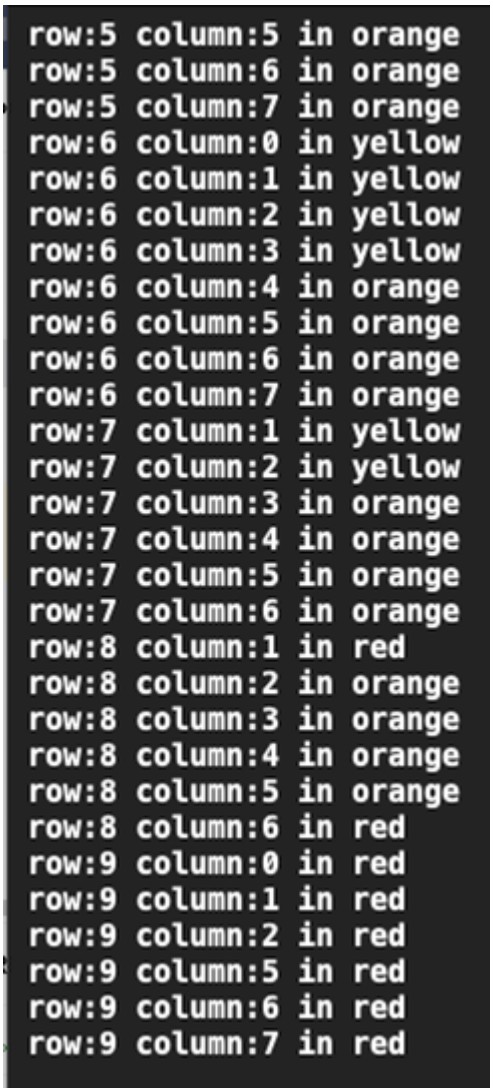
```
Welcome to Ministeck!
---------------------
1) Read all bricks
2) Print all bricks
3) Count the bricks
4) Draw the Ministeck image
0) Exit application
What would you like to do? 1

67 bricks have been loaded
```

Option 2: Print all bricks

The application will print all the tiles that have been read to the screen. The following information will be shown for each tile:

- Row and column of the tile
- Color of the tile

See the output for details. It's acceptable that not all the tiles fit on the screen.



Option 3: Count the bricks

In this option, the number of tiles of a certain color is counted. First, the user will be asked for which color the number of tiles should be counted. The options are `red`, `yellow`, `orange`, and `blue`. If the user enters something else, an error message must be displayed and repeatedly asked until one of these colors is entered. Once this happens, the program will show:

- Amount of tiles for that color
- The total number of tiles
- The percentage of tiles of that color compared to all the tiles.

See the image below as an example.

```
Welcome to Ministeck!
---------------------
1) Read all bricks
2) Print all bricks
3) Count the bricks
4) Draw the Ministeck image
0) Exit application
What would you like to do? 3

Which brick color do you want to count (red, yellow, blue, orange)?rood
Error, you can only type in the colors (red, yellow, blue, orange)
Please try again:red

There are 20 red bricks in a total of 67 bricks, this is 29.850746268656717%
```

Option 4: Draw the bricks

In this option, all the tiles will be drawn on the canvas. The tiles have the following properties:

Property	Description
row	Row where the tile should be placed. Value from 0 to 9.
column	Column where the tile should be placed. Value from 0 to 7.
color	The color of the tile. Values: `yellow`, `red`, `orange`, and `blue`

Row 0 and column 0 correspond to the upper-left corner of the canvas.

Each tile has a dimension of **50x50 pixels**.

For example, a tile from the CSV, such as `3,7,orange`, is a orange tile, where:

- Column is 7: corresponds to x-coordinate of 7x50=350px
- Row is 3: corresponds to y-coordinate of 3x50=150px Hence, providing a coordinate for the tile of (350,150).

The objective is to draw all tiles in the correct color at the appropriate position on the canvas. Doing so successfully, you will definitely recognize the image appearing. The SaxionApp provides the option to display a 50x50 pixel grid by using the key combination `ctrl-g`. Each tile should fit exactly within a grid cell.

Option 0: Exit

Selecting this option will exit the program.

Some tips to get started

- The most important: Read the assignment carefully!
- Begin by structuring your program. For instance, by typing code comments as you have learned in this course.

- Apply what you have learned about good code. Think, for example, about using good variable names and implementing methods where you think they are needed.
- Start small, with a small problem that you can solve.
- Test your program frequently to see if it works! Not just at the end.
- The CSV file can be opened simply by using `new CsvReader("bricks.csv");`. There is no additional path or reference to a directory required.
- If you get stuck, try to come up with a workaround. For example: if you don't know how to read the CSV file, manually create some tiles so that you can still perform the menu commands.

Best of luck!