175003 2014 S1 – Assignment 1

Summary

Your task in this assignment is to read and understand a short program in Processing. Then you will modify this program and submit it for review.

Programming Task

In this task you are required to analyse code that utilises aspects of Processing that we have not yet seen in class. You will need to then apply this code by integrating it with knowledge you already have.

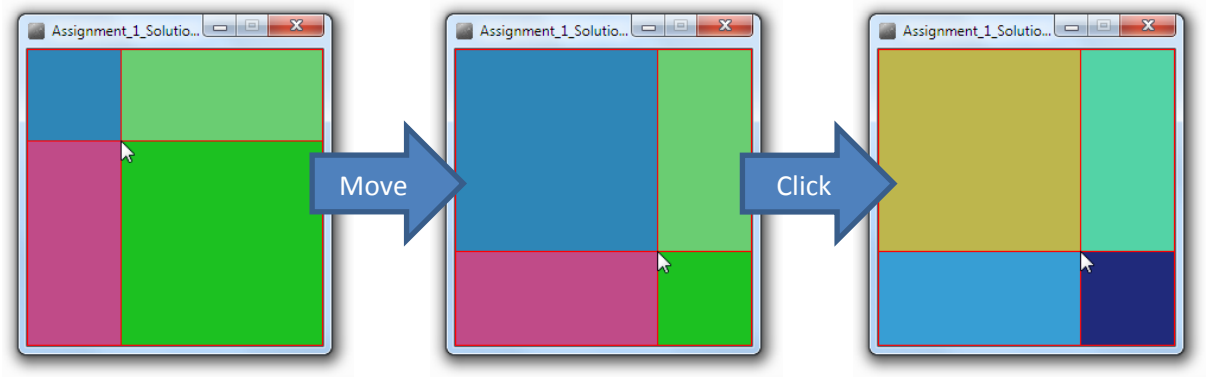
Examine the code below:

```
/**
 * 715003 Programming for Creativity 2014 S1
 *
 * Assignment 1 - Start Code
 *
 * This program draws one rectangles on the screen
 * that can be toggled between black and white with a mouse click.
 *
 * @author  Stefan Marks
 * @version 1.0 - 18.02.2014: Created
 */

int rectColour = 0; // global variable for the rectangle colour

/**
 * Sets up the program.
 */
void setup()
{
  // set up the canvas size
  size(250, 250);
}

/**
 * Draws a single frame.
 */
void draw()
{
  // draw rectangle
  fill(rectColour);
  rect(100, 100, 50, 50);
}
```

```
/**
 * Called when the user clicks the mouse button.
 * This will toggle the rectangle colour between black and white.
 */
void mousePressed()
{
  if ( rectColour == 0 ) // if colour is "black"
  {
    rectColour = 255;    // then change it to "white"
  }
  else                   // otherwise (= it is not "black")
  {
    rectColour = 0;      // change it to "black"
  }
}
```

Try executing this code in Processing to see whether it performs as you expect.

Now write a program that divides the screen canvas into four rectangles on the screen. The borders of the rectangles should always be red and completely visible. The point where the four rectangles coincide should follow the mouse, therefore resizing the rectangles as the mouse is moved. When the user clicks any mouse button, each rectangle should change to a different random colour.



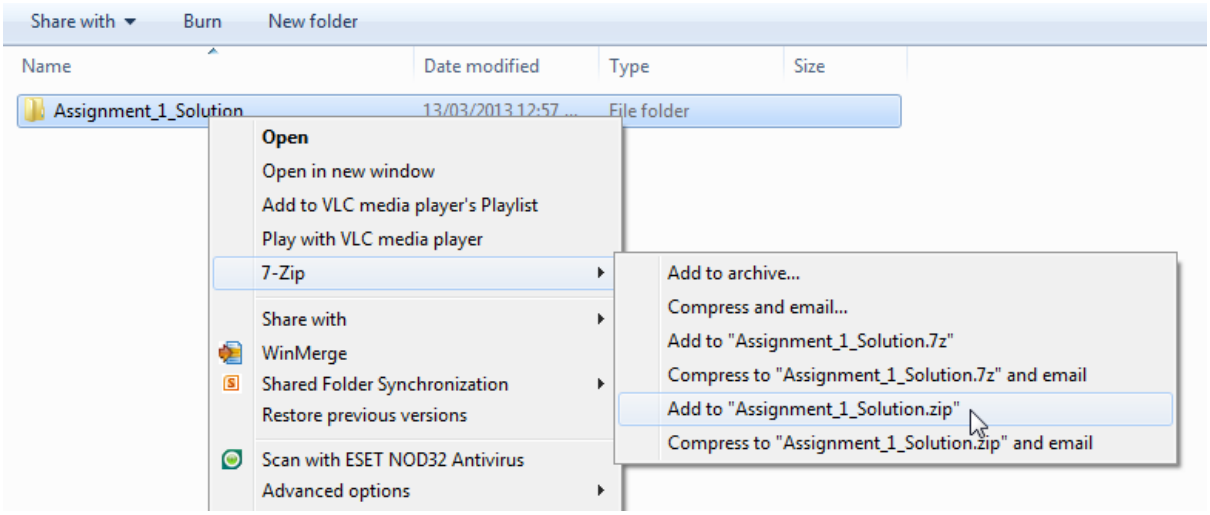
You will need to

- Understand how to draw rectangles of varying sizes and different border and fill colours
- Use the global variables that indicate the position of the mouse cursor
- Understand how to define colours instead of just black/white
- Investigate the use of the `random()` function

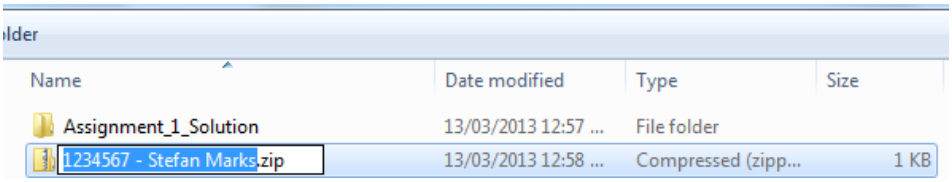
Submission

For the submission,

1. compress your project directory (which should have your .pde code file within it) using the .zip format



2. and rename the archive file to "{your ID} – {your Name}.zip", e.g., "1234567 – Stefan Marks.zip".



3. Then submit this .zip archive via the link on AUTonline.

Please do not use any other format than .zip. In the past, we had problems with formats like 7z, .tar, .tgz, rar.

The deadline for the assignment submission is **Thursday the 20th of March, 8pm**.

Assessment

You need to ensure that your code works and performs as expected. In addition, you will need to ensure that your code is documented (use comments to explain the main elements of your program) and conforms to a reasonable coding convention, in particular the indentation of code segments. Familiarise yourself with the coding convention document that is available on AUTonline under "Course Notes"