



introduction to media computing

Assignment 01



Assignment 01

MonoPaint: the sample

js

p5*

JS

Result

EDIT ON CODEPEN

```
// GLOBAL variables
let active_brush = 0; // Active Brush INDEX
let active_color = 0; // Active Color Index

let color_0 = 0; // Brush Color #0, BLACK
let color_1 = 70; // Brush Color #1, GRAY
let color_2 = 140; // Brush Color #2, LIGHT GRAY

let back_color = 220; // Drawing Area Background color

function setup() {
  createCanvas(400, 400);
  background(back_color);
  noStroke();
  textSize(20);

  // Draw the menu bar (we only draw once)
  // Area #0, a BLACK area
  fill(color_0);
  rect(0, 350, 100, 50);

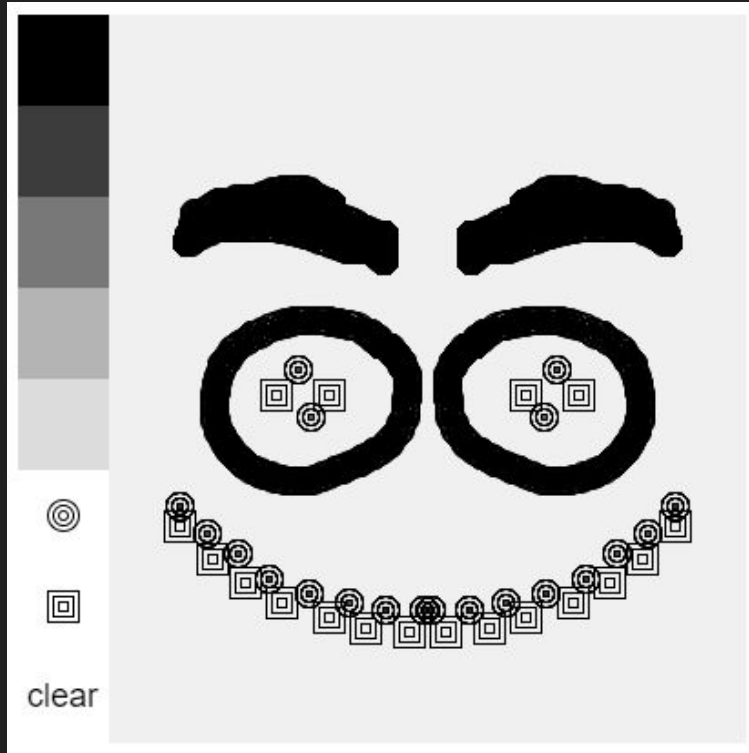
  // Area #1, a DARK GRAY area
  fill(color_1);
  rect(100, 350, 200, 50);
}
```

A simplified skeleton sketch as shown is provided as a basic framework for you to start coding your own micro painting app.

Your Assignment

js

p5*



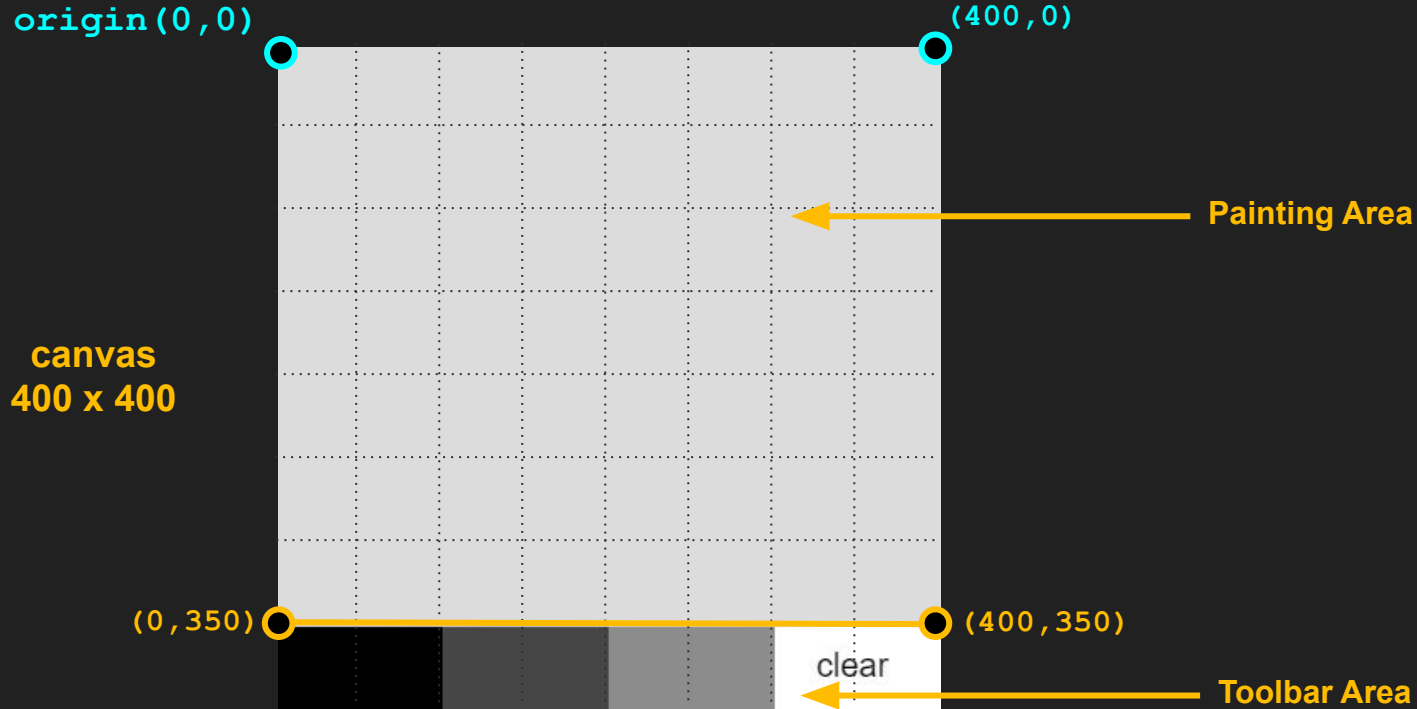
REQUIREMENTS

1. Use a 400 x 400 canvas
2. **TOOLBAR** A vertical toolbar on the LEFT with at least 4 colors and 2 brushes to choose from.
3. **BRUSHES** must be visualized on the toolbar, and EACH brush uses a `while()` loop to draw.
4. Symmetric painting behaviour similar to the one in the sample app.
5. All code must be well formatted and FULLY documented.

Inside MonoPaint

js

p5*



a1_skeleton.html code structure

js

Line 6 - 14

Global variables declaration and initialization.

`active_color` and `active_brush` are variables to store currently active (user chosen) color (and brush).

`color_0`, `color_1`, and `color_2` allow us to redefine brush colors quickly.

`back_color` background color

```
let active_brush = 0;  
...
```

```
function setup() {  
  // draw toolbar at the bottom  
}  
  
function draw() {  
  if (mouseIsPressed) {  
    if (mouseY > 350) {  
      // toolbar clicks  
    } else {  
      // drawing  
    }  
  }  
}
```

a1_skeleton.html code structure

js

Line 16 - 42

Draws the user interface ONCE.

```
let active_brush = 0;
```

```
...
```

```
function setup() {  
  // draw toolbar at the bottom  
}
```

```
function draw() {  
  if (mouseIsPressed) {  
    if (mouseY > 350) {  
      // toolbar clicks  
    }  
    else {  
      // drawing  
    }  
  }  
}
```

a1_skeleton.html code structure

js

`mouseY > 350`

lines 52 - 63

Classifies where the user is clicking to decide 'which color' the user has chosen, and stores the choice as a number into `active_brush` and `active_color`.

lines 64-68

The user is clicking on the 'clear' button, so it overpaints the drawing area using a rectangle using the `back_color`.

```
let active_brush = 0;
...

function setup() {
  // draw toolbar at the bottom
}

function draw() {
  if (mouseIsPressed) {
    if (mouseY > 350) {
      // toolbar clicks
    }
    else {
      // drawing
    }
  }
}
```

a1_skeleton.html code structure

lines 71 - 95

Draws rectangle or ellipse according to the value of `active_brush` and `active_color` using if-else blocks

```
let active_brush = 0;
...

function setup() {
  // draw toolbar at the bottom
}

function draw() {
  if (mouseIsPressed) {
    if (mouseY > 350) {
      // toolbar clicks
    } else {
      // drawing
    }
  }
}
```


MonoPaint code structure

```
// GLOBAL variables
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let active_color = 0;          // Active Color Index

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let color_1 = 70;               // Brush Color #1, GRAY
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let back_color = 220;           // Drawing Area Background color
```

GLOBAL variables block

MonoPaint code structure

GLOBAL variables block

```
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let color_0 = 0;               // Brush Color #0, BLACK
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let back_color = 220;          // Drawing Area Background color

function setup() {

  createCanvas(400, 400);
  background(back_color);
  noStroke();
  textSize(20);

  // Draw the menu bar (we only draw once)
  // Area #0, a BLACK area
  fill(color_0);
  rect( 0, 350, 100, 50);

  // Area #1, a DARK GRAY area
  fill(color_1);
  rect(100, 350, 100, 50);

  // Area #2, a LIGHT GRAY area
  fill(color_2);
  rect(200, 350, 100, 50);

  // Area #3, a WHITE area with text 'CLEAR'
  fill(255);
  rect(300, 350, 100, 50);
}
```

Assignment #1 has been released on our
Canvas page this Monday (Sept. 16).

Please study the **specification**
and **code skeleton** carefully

Due Date

Sept. 30 (Mon) 23:59