Programmation à Relais

Participants	1
Workstations	1
Value	5%
Duration	3 x 1 hour

MPIRE Creative Suite

The Empire's Guild of Artists needs the development of a new graphic tool to allow for better collaboration between design teams. The first step in this huge project is the development of a web-based tool which posesses the very basic functionalities of a graphical tool for artists.

Problem Description

You must develop a web-based image manipulation software. HTML Canvas and JavaScript programming will be your main weapons for this task.

Sensitivity Threshold

The sensitivity threshold is a way of including of excluding a pixel from a selection base on the colour difference between him and its neighbours.

- ❏ Reducing the sensitivity threshold introduces more leniency when handling a group of pixels. A minimal threshold includes every pixel from the source image.
- ❏ Raising the sensitivity threshold introduces less leniency when handling a group of pixels. A maximal threshold induces that all adjacent pixels with the exact same colour wil be selected.

Functionalities

Opening images

PhotoDome must allow opening an image, i.e. obtaining the `canvas` representing an image.

Magic Wand

You must implement an automatic selection tool: the "magic wand". This tools can select all pixels within a specified sensitivity threshold. This must be configurable by the end-user.

Paint

This functionality allows a user to modify the colour of all pixels from a sensitivity threshold-based selection.

Brush

This tool enables painting the image directly using a mouse of any other input device. The basic form for a brush is circular.

- ❏ When the user clicks within a drawing area, the brush's shape should be printed on the canvas at the place the user clicked.
- ❏ When a user clicks and drags its mouse while retaining pressure on the mouse button, the brush's shape should repeat on each position visited by the cursor.

Parameters
The following parameters should be configurable by a user:
- ❏ Brush colour
- ❏ Size of the brush
- ❏ Shape of the brush. The user can choose from:
    - ❏ Square
    - ❏ Circular
    - ❏ Aerosol
- ❏ Opacity (alpha-channel)

Text tool

This tool allows for the inclusion of text on the Canvas.

Parameters
The following parameters should be configurable by a user:

- ❏ Font family

- ❏ Font size

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Correction

- ❏ Open an image (15 points)
- ❏ Magic wand (25 points)
    - ❏ Basic functionality (15 points)
    - ❏ Sensitivity Threshold(10 points)
- ❏ Paint (10 points)
    - ❏ Basic functionality (5 points)
    - ❏ Sensitivity Threshold(5 points)
- ❏ Brush (25 points)
    - ❏ Colour choice (5 points)
    - ❏ Size choice (5 points)
    - ❏ Shape choice (5 points)
    - ❏ Opacity choice (10 points)
- ❏ Text tool (25 points)
    - ❏ Basic functionality (10 points)
    - ❏ Font family choice (5 points)
    - ❏ Size choice (5 points)