Animation Canvas

Technical Manual

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**Introduction**

This manual includes how the canvas element functions, its tools, what the buttons do, files included and how to interact with it.

**Objectives**

Provide an easy to access tool for creating GIF animations through a webpage. It should be lightweight for most devices using it and it should work with most pointing devices.

Anyone should be capable of using it with easy to understand tools and functions.

**Principles**

Whatever you want to do should take 3 or less clicks.

Don’t mix object declaration.

Use objects to keep function names available for other objects.

**Tools used**

**Git:** Used for Version Control.

**JavaScript:** Programming Language used for defining elements behavior.

**CSS:** Style tables used for defining how the elements look like.

**HTML:** Marking Language for defining which elements are going to appear.

**Firebase:** Its hosting service is used for the webpage, but it can be any other hosting service too.

**Folders and files**

**Root**

index.css: Contains style information for the webpage.

index.html: Contains what is going to appear in the webpage.

**src**

Folder used for holding media resources.

**src/*images***

Contains all the images that are going to be included.

**src/*js***

Folder that contains anything related to JavaScript files.

**-elementsData.js:** Holds the variables linked to the elements that form part of the HTML file used by the webpage. It includes their behavior to certain events too.

**-index.js:** JavaScript file that holds an including function in charge of adding new JavaScript files to the webpage and it has written which JavaScript files are going to be included.

**-resources.js:** It includes variables related to Media Files, it has functions for loading them too. Add your Media Files here.

-**colours.js:** Includes hexcolour codes and a function returning a color object containing its RGB components.

**src/*js*/canvas**

Folder including JavaScript files related to the canvas being used.

**-animation.js**: Contains the list of the frames being included, functions and methods used by them. In summary, the animation data.

**-canvasComponents.js:** File that initializes the canvas that is going to be used, the starting configuration for it and the first frame is created in the list. It also contains the variable used for containing the canvas.

Use it to initialize properties for the canvas.

**-canvasData.js:** Contains the methods used for the canvas and tools used by it. It holds the properties unique to the Animation Canvas.

It also has the methods used by the tools.

**src/*js*/elements**

Contains functions and declarations related to elements seen, this includes the sidebar, buttons and menus.

**-buttons.js:** Has the functions used by the buttons shown in the main screen.

**-settingsMenu.js:** Includes the functions used by the Settings Menu.

**src/*js*/gifjs**

This folder has the encoder used by the program to create a new gif file that can be downloaded.

**index.js**

This is where the JavaScript files are going to be included. This is also where the window functions are defined. This is the **first** document that is going to be added and run and holds the window object.

You can add functions when you want to know the whole document has been interacted with.

**Functions:**

* **include(file):** Takes the route of a JS file and includes it in the HTML document.

**window**

It is an object holding the window displayed to the User.

**Functions:**

* **onbeforeload(event):** Event handler currently used to display a warning message before the window is closed.
* **onpointerdown(event):** Event handler when the pointer touches somewhere else. This activates whenever any part of the window gets the pointer down. Currently used to close any menus.

**Adds:**

* **resources.js**
* **colours.js**
* **animation.js**
* **canvasComponents.js**
* **shortcuts.js**
* **elementsData.js**

**myCanvasArea**

Holds the drawing section you can see. This is where the drawing is done.

This uses keys for storing its variables.

**Files:**

* **CanvasComponents.js**
* **CanvasData.js**

**Keys:**

* **canvas:** Canvas element currently used for drawing.
* **bottomCanvas:** Canvas element that displays the previous frame.
* **svgBackground:** SVG element displaying a colour as the background.
* **rectBackground:** SVG rectangle element used to fill the svgBackground.

**Functions:**

* **start():** Initializes both canvas elements (canvas & bottomCanvas).

**bottomCanvas.js**

**Objects:**

* **bottomCanvas:** Variable holding a reference to the Bottom Canvas acting as the onion paper.

**bottomCanvas**

**Keys:**

* **isShown:** Holds a **bool** variable telling if the Bottom Canvas is being shown or not.

**Functions:**

* **clearCanvas:** Cleans the Bottom Canvas.
* **showPrevious:** Draws the frame before the framePointer.
* **setOpacity(op):** Takes an **op** value indicating the opacity and assigns it to the Bottom Canvas style opacity attribute.
* **toggle(op):** Toggles the Bottom Canvas visibility. If **op** has a value, then it will take it.

**Animation.js**

Contains the variables related to the frames stored for the animation and the past versions of the frame being used for the redos.