Front End Engineering-II

Project Report

Semester-IV (Batch-2022)

Background Colour Selector

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Abstract

Title: Background Color Selector: An Interactive Tool for Visual Design Enhancement

Abstract:

The Background Color Selector is an innovative web-based tool designed to empower users in selecting and previewing background colors for various digital platforms. In the realm of visual design, the choice of background color significantly influences the overall aesthetic appeal and user experience of websites, applications, and multimedia content. This tool offers a user-friendly interface that facilitates seamless exploration of an extensive color palette, enabling users to experiment with different hues, shades, and gradients in real-time. Leveraging advanced color theory principles and intuitive controls, the Background Color Selector allows users to adjust parameters such as saturation, brightness, and opacity, providing fine-grained customization options tailored to individual preferences and project requirements. Moreover, the tool incorporates features for previewing color combinations against text, images, and other graphical elements, facilitating informed decisions and ensuring optimal contrast and readability. With its responsive design and cross-platform compatibility, the Background Color Selector caters to the diverse needs of designers, developers, and content creators across desktop and mobile environments. By streamlining the process of background color selection and refinement, this tool empowers users to elevate the visual impact and cohesiveness of their digital creations, ultimately enhancing engagement and user satisfaction.
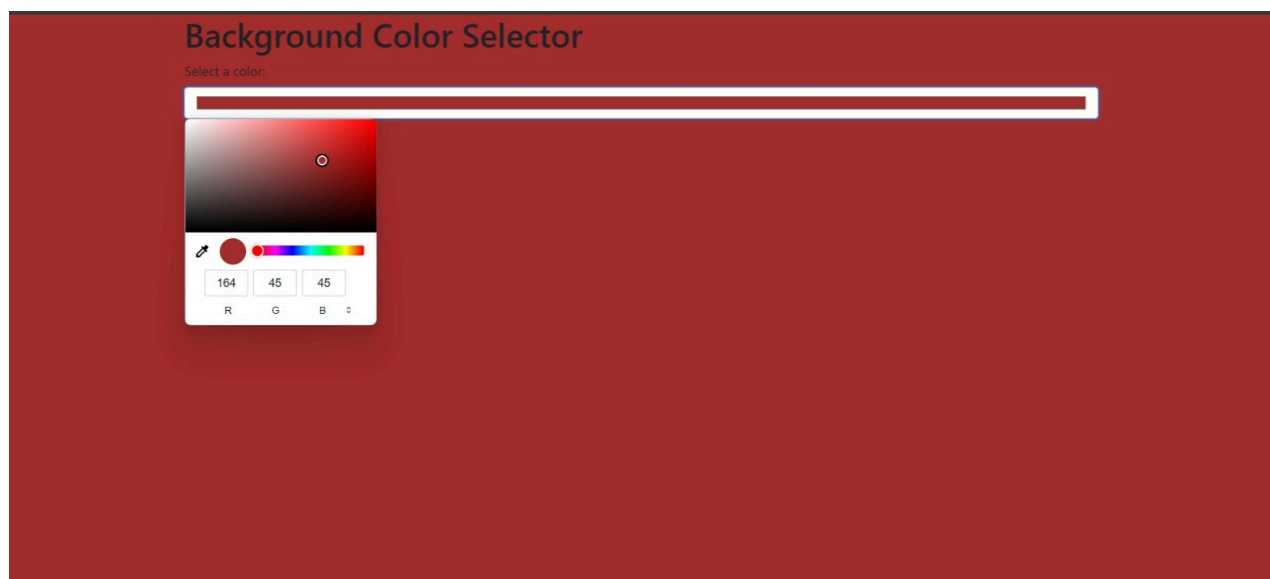
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1. Introduction:

In the ever-evolving landscape of digital design, the selection of background color plays a pivotal role in shaping the visual identity and user experience of websites, applications, and multimedia content. The Background Color Selector emerges as a solution to address the challenges designers and developers face in finding the perfect background color to complement their creations. This introduction sets the stage by highlighting the significance of background color in design, identifying existing challenges, and introducing the purpose and features of the Background Color Selector tool.

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1.1 Background

The Background Color Selector tool emerges from a recognition of the critical role that background color plays in digital design and user experience. In today's digital landscape, where websites, applications, and multimedia content abound, the choice of background color significantly impacts the overall aesthetic appeal, readability, and user engagement. As such, designers and developers are constantly seeking efficient and effective methods to navigate the complexities of color selection and optimization.

1.2 Objectives:

In summary, the objective of the Background Color Selector tool is to provide designers, developers, and content creators with a powerful and versatile platform for selecting background colors that enhance the visual appeal, readability, and user experience of their digital projects. By offering intuitive controls, real-time previewing capabilities, and accessibility features, the tool empowers users to unleash their creativity and produce visually stunning and inclusive designs with confidence and ease.

1.3 Significance:

The significance of a background color selector lies in its ability to influence aesthetics, functionality, brand identity, accessibility, and cultural relevance within the context of web and application design.

2. Problem Statement

In digital design, selecting an appropriate background color is a critical aspect of creating visually appealing and functional user interfaces. However, designers often face challenges in choosing the right background color that balances aesthetic appeal, readability, brand consistency, accessibility, and cultural relevance. Without a systematic approach to background color selection, designers may struggle to create designs that effectively communicate the intended message and provide an optimal user experience. Therefore, there is a need for a background color selector tool that facilitates informed decision-making by considering various factors such as aesthetics, functionality, brand identity, accessibility standards, and cultural sensitivity. This tool should empower designers to efficiently explore, compare, and select background colors that align with their design goals and meet the needs of diverse user demographics.

3. Software Requirements

a) Integrated Development Environment (IDE):

- Visual Studio Code (VS Code) for code editing and project management.

b) Frontend Technologies:

- HTML: Markup language for structuring the web application.

- CSS: Styling language for enhancing the presentation and layout.

- JavaScript (JS): Programming language for implementing interactive features and logic.

c) User Interface (UI) Framework:

- Bootstrap 5: Frontend framework for building responsive and visually appealing user interfaces.

d) Version Control:

- Git: Distributed version control system for tracking changes in the project codebase

4. Proposed Design

- **User Interface Design:** Utilize Bootstrap 5 for a responsive, visually appealing lay-out. Employ card-based design for intuitive organization.

- **Frontend Development:** Develop using HTML, CSS, and JavaScript. Utilize HTML5 semantics, CSS for styling, and JavaScript for dynamic UI updates.

- **Logic:** The logic behind a Background colour Selector revolves around enabling users to intuitively select a range of values within a defined range while ensuring a smooth and responsive interaction experience.

- **User Experience Optimization:** Focus on real-time feedback, interactive ele-ments, and cross-browser compatibility. Ensure responsiveness for varied devices.

- **Testing and Quality Assurance:** Conduct comprehensive testing, including man-ual and unit tests. Ensure functionality and UI consistency.

- **Documentation and Deployment:** Provide detailed documentation. Deploy on web server with domain. Maintain and update documentation regularly

- **Integration of Libraries:** Utilize libraries like SweetAlert2 for user-friendly alerts and confetti for celebratory effects, enhancing user experience and engagement

4.1 File Structure
Ensuring proper file and folder structure to maintain consistent file paths and clean structure.

4.2 HTML Code Structure

These screenshots present the HTML code for our Double Vertical Slider project, revealing the layout and content of our web pages in a code format.

```html
<> background color.html > ⊘ html > ⊘ body > ⊘ script
1    <!DOCTYPE html>
2    <html lang="en">
3    <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Background Color Selector</title>
7      <link href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css" rel="stylesheet">
8      <style>
9        body {
10         transition: background-color 0.5s ease;
11       }
12     </style>
13   </head>
14   <body>
15     <div class="container">
16       <h1>Background Color Selector</h1>
17       <div id="color-picker" class="form-group">
18         <label for="color">Select a color:</label>
19         <input type="color" id="color" class="form-control">
20       </div>
21     </div>
22
23     <script>
24       document.getElementById('color').addEventListener('input', function() {
25         document.body.style.backgroundColor = this.value;
26       });
27     </script>
28   </body>
29   </html>
```

5. Results

The application successfully fulfills its intended purpose implementing a Background Colour Selector will result in a versatile and user-friendly interface component for selecting ranges of values, offering enhanced precision, flexibility, and ease of use.

GitHub Repository Link:
GitHub Pages Link:

Project Screenshots for all scenarios:

Background Color Selector

Select a color:

164 45 45

R G B

Accuracy: The Double Vertical Slider logic, implemented in JavaScript, By incorporating these elements, a DVS can achieve high levels of accuracy, allowing users to precisely define the range of values they need for their tasks or selections.

- **User Experience:** The user interface design, leveraging Bootstrap 5, provides a seamless and visually appealing experience across different devices and screen sizes. Interactive ele-ments and real-time feedback enhance usability and engagement.

- **Functionality:** A DVS can provide users with a powerful and intuitive tool for selecting and manipulating ranges of values, enhancing usability and effectiveness in various applications.

- **Integration of Libraries:** The integration of libraries such as SweetAlert2 for user-friendly alerts and confetti for celebratory effects adds an element of delight to the user experi-ence, enhancing engagement and satisfaction.

- **Documentation and Deployment:** Comprehensive documentation guides users through setup, usage, and troubleshooting. Deployment on a web server with domain access ensures public availability, while regular updates maintain relevance and accuracy.

6. References

- **HTML, CSS, and JavaScript Documentation:**

  - **Mozilla Developer Network (MDN) - HTML:**

    https://devel-oper.mozilla.org/en-US/docs/Web/HTML

  - **Mozilla Developer Network (MDN) - CSS:**

    https://developer.mozilla.org/en-US/docs/Web/CSS

  - **Mozilla Developer Network (MDN) - JavaScript:**

    https://devel-oper.mozilla.org/en-US/docs/Web/JavaScript

- **Bootstrap Documentation:**

  - **Bootstrap Official Documentation:**

    https://getbootstrap.com/docs/5.3/getting-started/introduction/

  - **W3Schools Bootstrap Tutorial:**

    https://www.w3schools.com/bootstrap/boot-strap_get_started.asp

- **Confetti.js Documentation and Examples:**

  - **Confetti.js GitHub Repository:** https://github.com/mathusummut/confetti.js

  - **Confetti.js Examples and Demos:** https://mathusummut.github.io/confetti.js/

- **SweetAlert2 Documentation and Examples:**

  - **SweetAlert2 Official Documentation:** https://sweetalert2.github.io/

  - **SweetAlert2 GitHub Repository:** https://github.com/sweetalert2/sweetalert2

- **Frontend Development Tutorials and Articles:**

  - **CSS-Tricks:** https://css-tricks.com/

  - **Smashing Magazine - HTML/CSS:**

    https://www.smashingmagazine.com/cat-egory/css/

  - **JavaScript.info:** https://javascript.info/