Smart Calculator Web App – Project Report

1. Introduction

The Smart Calculator Web App is a frontend web application developed using HTML, CSS, and JavaScript. The goal of this project is to create a realistic, interactive, and user-friendly calculator similar to real-world calculators. The application is lightweight, responsive, and deployed using modern web hosting platforms.

2. Objectives of the Project

The main objectives of this project are:
- To strengthen frontend development fundamentals.
- To build a fully functional calculator using vanilla JavaScript.
- To implement keyboard support and theme switching.
- To deploy a live project using GitHub and Vercel.

3. Technology Stack Used

HTML5: Used to create the structure of the calculator.
CSS3: Used for styling, layout, animations, and dark/light mode.
JavaScript: Used to implement calculator logic, keyboard input handling, and theme toggle.
GitHub: Used for version control and source code management.
Vercel: Used for deploying the project as a live web application.

4. Features of the Project

- Realistic calculator UI and layout.
- Supports mouse and keyboard input.
- Dark and Light mode toggle.
- Responsive design for different screen sizes.
- Smooth button animations and transitions.
- Error handling for invalid expressions.

5. Project Workflow

The project development started with designing the HTML structure, followed by styling using CSS. JavaScript logic was then implemented to handle calculations, keyboard events, and theme switching. After testing locally, the project was pushed to GitHub and deployed on Vercel.

6. Deployment Details

The project is hosted on Vercel using GitHub integration. Any updates pushed to the GitHub repository are automatically reflected in the live application.

7. Live Project Links

Live Demo: https://smart-calculator-web-app.vercel.app
GitHub Repository: https://github.com/faheem1309/Smart-Calculator-Web-App

8. Conclusion

The Smart Calculator Web App successfully demonstrates frontend development skills, clean coding practices, and real-world deployment workflow. This project serves as a strong foundation for further learning and advanced projects.

SMART CALCULATOR WEB APPLICATION
(Project Report – Final Version)

1. INTRODUCTION

The Smart Calculator Web Application is a responsive and interactive web-based calculator developed using HTML, CSS, and JavaScript. It evolved from a basic calculator into a dual-mode calculator supporting both Normal and Scientific operations.

2. OBJECTIVES

- Build a responsive calculator

- Support scientific calculations

- Implement history and persistence

- Provide keyboard support

- Deploy as a live web app

3. TECHNOLOGY STACK

HTML5, CSS3, JavaScript, GitHub, Vercel

4. FEATURE EVOLUTION

Version 1: Normal calculator

Version 2: Scientific mode, history, UX improvements

5. SCIENTIFIC ARCHITECTURE

Uses JavaScript Math functions with controlled execution.

6. HISTORY & PERSISTENCE

Uses Local Storage to store calculations.

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7. UI & UX

Responsive design, theme toggle, animations.

8. DEPLOYMENT

Deployed using Vercel with GitHub integration.

9. CONCLUSION

Demonstrates strong frontend and logic skills.

10. FUTURE SCOPE

PWA, offline mode, more scientific functions.