1. Title Page

UI Library Name: AndromedaCSS

Team Name: anonymous_codes

Team Members:

Atharva Raj Sinha – Variables, Grid System and Dark Mode

Integration

Vatsala Verma – Demo Site and Documentation Lead

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GithubRepository:

https://github.com/atharvarajsinha/AndromedaCSS/

2. Problem Statement

→ Limitations of Existing Frameworks (Bootstrap, Tailwind):

i. Performance Issues:

- a. Heavy file sizes in Bootstrap/Tailwind impact load times.
- b. Unnecessary components bloat projects.

ii. Learning Curve:

- a. Utility-first frameworks (e.g., Tailwind) require memorization.
- b. Opinionated structures limit customization.

→ What Gap Are We Addressing?

- a. A lightweight, developer-friendly UI library with intuitive class naming
- b. Pure CSS implementation no dependencies or build tools required
- c. Better modular structure for maintainability
- d. Built with beginners and small-to-mid-level projects in mind

3. Proposed Solution

→ Overview of AndromedaCSS:

i. A lightweight CSS library with:

- a. Mobile-first 12-column responsive grid.
- b. Utility-first approach with semantic class names.
- c. Reusable base components. (buttons, cards, navbar, etc.)
- d. Dark mode toggle support.

ii. Key Components:

- a. Grid System: Built using percentages, media queries, and flexbox
- b. Utility Classes: For margin, padding, text alignment, flex, etc.
- c. Colour & Typography System: Theme variables for easy customization
- d. Components: Modular and ready-to-use HTML+CSS blocks

iii. Uniqueness:

- a. No Build Step Works with plain HTML/CSS
- b. Customizable Override variables easily
- c. Beginner-Friendly Clear naming conventions
- d. Theme variables and dark mode toggle

4. System Architecture

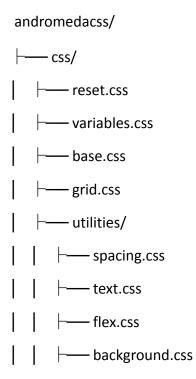
→ How Developers Use It:

- 1. Link CSS files from the /css/ directory in HTML
- 2. Build layouts using the grid (.col-4, .row, .container)
- 3. Use utility classes for spacing, typography, and responsiveness
- 4. Add prebuilt components as needed (e.g., .card, .btn)

→ Naming Convention:

- Utility: .m-1, .p-2, .text-center, .bg-primary
- Grid: .row, .col-6, .col-md-4, .col-lg-3
- Components: .btn, .card, .navbar

→ Modular File Structure:



├── border.css
typography.css
├ tables.css
effects.css
L components/
buttons.css
cards.css
alerts.css
— darkmode.css
forms.css
— navbar.css
footer.css
Spinner.css

5. Tech Stack

i. Core: Vanilla CSS

ii. No JavaScript frameworks or build tools

iii. Version Control: Git/GitHub

iv. **Demo Site:** HTML + CSS

6. Implementation Plan

- i. Phase 1: Core System
 - a. Reset + Variables + Grid
 - b. Utility Classes
- ii. Phase 2: Components
 - a. buttons, alerts, cards, etc.
 - b. Dark Mode
- iii. Phase 3: Testing & Docs
 - a. Mobile responsiveness checks
 - b. Demo Site
 - c. Documentation

7. Reusability & Documentation

\rightarrow How others can use:

Link stylesheets in their HTML:

```
<link rel="stylesheet" href="css/reset.css" />
<link rel="stylesheet" href="css/variables.css" />
<link rel="stylesheet" href="css/base.css" />
<link rel="stylesheet" href="css/grid.css" />
```

Code Snippets:

Features:

- Dark Mode support with darkmode.js
- Reusable .card, .navbar, .form, .alert, .spinner classes
- Minimal CSS footprint
- Well-structured, readable, and extendable

8. References / Research / Early Work

- GitHub Repo: https://github.com/atharvarajsinha/AndromedaCSS/
- Inspiration:
 - Tailwind Docs
 - Bootstrap Grid