

1. Title Page

UI Library Name: AndromedaCSS

Team Name: anonymous_codes

Team Members:

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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:

andromedacss/

├── css/

| ├── reset.css

| ├── variables.css

| ├── base.css

| ├── grid.css

| ├── utilities/

| | ├── spacing.css

| | ├── text.css

| | ├── flex.css

| | └── background.css

- | | | └─ border.css
- | | | └─ typography.css
- | | | └─ tables.css
- | | └─ effects.css
- | └─ 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

→ 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:

```
<div class="container">
  <div class="row">
    <div class="col-4">Left</div>
    <div class="col-8">Right</div>
  </div>
</div>

<button class="btn btn-primary">Click Me</button>
```

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