## **1. Introduction**

This project is a **single-page portfolio website** showcasing a developer’s **skills, certifications, and projects** with an **interactive** and **responsive** design. It uses **Tailwind CSS**, **semantic HTML**, and a **pure CSS** day/night toggle powered by **radio buttons**—no JavaScript needed. The site is live at:

### [**Live Demo**](https://portfolio-website-uelw.onrender.com/)

## **2. Objectives**

1. **Responsive Layout**
   * Adapt to mobile, tablet, and desktop screens seamlessly.
2. **Pure CSS Theme Toggle**
   * Provide **dark** and **light** modes using **radio inputs** and sibling combinators (e.g., #light-mode:checked ~ label[for="light-mode"]).
3. **Semantic HTML**
   * Use <section>, <article>, <header>, <footer> to structure the page clearly.
4. **Maintainability**
   * Keep the code DRY by consolidating repeated utility classes into **custom Tailwind component classes**.

## **3. Technology Stack**

* **HTML5**: Semantic markup for each site section.
* **Tailwind CSS (v4.0)**: Utility-first styling with additional custom classes.
* **Font Awesome**: Icon set for social links, navigation, etc.
* **Render.com**: Hosting platform for the live deployment.

## **4. Section Breakdown**

1. **Header & Navigation**
   * **Logo/Name** on the left, **navigation links** on the right.
   * **Hamburger menu** on mobile (checkbox method).
   * **Dark/Light Mode Toggle**: Two radio inputs (#dark-mode, #light-mode), each controlling different color variables and label states.
2. **Home (Hero)**
   * Profile image with a **subtle infinite animation** (pulse, spin, tilt, etc.).
   * **Resume Download** button and social icons.
   * A grid/flex layout that places the **text** on the left and **image** on the right on larger screens.
3. **About**
   * Brief biography.
   * **Read More / Read Less** toggle using peer-checked approach in pure CSS (no JS).
4. **Skills**
   * Organized in **big cards** (like “Languages,” “Web Dev Tools,” “Frameworks,” etc.) or smaller skill cards.
   * Each card has an **icon**, **skill name**, and **progress bar** for proficiency.
5. **Certifications**
   * A **grid** of certification cards that lift on hover and show a **hover background change**.
   * Each card has a **View Certificate** button linking to the certificate.
6. **Projects**
   * 2-3 columns (desktop) or 1 column (mobile) of project cards.
   * Hover effects with a **dark shadow** or subtle translation.
7. **Contact**
   * **Contact form** on the left (Name, Email, Message).
   * **Quote** or short message on the right, possibly with a **background image** overlay for visual flair.
8. **Footer**
   * **Call** and **Email** links.
   * Minimal **social icons** (LinkedIn, GitHub, Twitter).
   * **“Go to top”** link for quick navigation.

## **5. Styling & Theming**

* **Tailwind Utility-First**:  
  + Used grid, flex, gap-4, etc., to build layouts quickly.
  + Combined with custom classes (e.g., .nav-link, .contact-field) to keep HTML concise.
* **Dark/Light Toggle via Radio Inputs**:  
  + **Default**: Dark mode.
  + **Light mode**: Checking #light-mode triggers a set of **overridden color variables** in the CSS.
  + The toggle labels (label[for="dark-mode"], label[for="light-mode"]) reflect the active theme (e.g., changing icon or background color).
* **Animations**:  
  + **Hover** transitions on cards (hover:-translate-y-2, hover:shadow-xl).
  + **Infinite** image animations (pulse, tilt) with keyframes.

## **7. Challenges & Solutions**

1. **Reducing Repetitive Classes**
   * **Challenge**: Tailwind’s utility classes can clutter HTML when repeated.
   * **Solution**: Moved repeating patterns into custom classes (e.g., .cert-card, .footer-link) within the @layer components block in our main CSS file.
2. **Smooth Day/Night Toggle**
   * **Challenge**: Ensuring the transition between dark and light modes is not jarring.
   * **Solution**: Used transition: all 0.3s ease; on the body and relevant elements, plus radio-button sibling selectors (~) to style the checked state.
3. **Maintaining Performance**
   * **Challenge**: Animations, images, and background overlays can affect load times.
   * **Solution**: Compressed images where possible and kept infinite animations subtle (slow transformations and small angles).
4. **Hero Section (Home)**
   * **Challenge**: Aligning the profile image and introduction text side-by-side on desktop, yet stacked on mobile.
   * **Solution**: Used grid grid-cols-1 md:grid-cols-2 plus order-1 md:order-2 to control element ordering.
5. **Contact Section**
   * **Challenge**: Having a form on one side and a background image with a quote on the other, matching heights.
   * **Solution**: Combined grid with items-stretch and used h-full plus flex to ensure both columns fill the same vertical space.
6. **Footer Icons**
   * **Challenge**: Ensuring social icons, call/email links, and “Go to top” are centered horizontally without crowding each other.
   * **Solution**: Used flex flex-col sm:flex-row items-center justify-center space-y-2 sm:space-y-0 sm:space-x-6 for a clean, adaptive layout.

## **8. Deployment**

* Deployed on **Render.com**:  
   [**https://portfolio-website-uelw.onrender.com**](https://portfolio-website-uelw.onrender.com/)
* **Continuous Deployment**: Pushing to the main branch triggers a rebuild on Render.

## **9. Conclusion**

By leveraging **Tailwind CSS** for a **utility-first** approach and **pure CSS** radio-button toggles for theming, this portfolio achieves:

* **Responsive, user-friendly** layouts for all screen sizes.
* **Semantic, maintainable HTML** that clarifies each section’s purpose.
* **Engaging hover effects** and **infinite animations** that add life to the site without overwhelming.
* A **no-JS day/night toggle** that elegantly switches color schemes.

Feel free to explore the live site at [**https://portfolio-website-uelw.onrender.com**](https://portfolio-website-uelw.onrender.com/) to experience the final product!