Front-End UI/UX Mini Project

Project Submission Template

1. Title Page

- **Project Title**: A Responsive and Interactive Personal Portfolio Website
- **Submitted By**:
    - *Team Members- Lancy J – (batch 8)*
    - *Roll Number - 2462339*
    - *College – lancy.j@btech.christuniversity.in*
- **Course**: *UI/UX Design Fundamentals*
- **Instructor Name**: *Nagaveena*
- **Institution**: *Christ University*
- **Date of Submission**: *26/09/2025*

2. Abstract

This project is the design and development of a fully responsive, single-page personal portfolio website for a data science student. The primary goal is to create a professional online presence to showcase academic projects, technical skills, and key achievements to potential employers and collaborators. The website is built using a combination of HTML5, CSS3, Bootstrap 5, and jQuery. The final outcome is a clean, modern, and interactive website featuring a dynamic light/dark theme toggler, smooth-scrolling navigation, and subtle animations, providing an engaging and user-friendly experience across all devices.

3. Objectives

The primary objectives set for this project were:

- To design a modern, user-friendly interface with a clean and minimalist aesthetic.
- To develop a fully responsive layout that functions seamlessly on desktop, tablet, and mobile devices, utilizing the Bootstrap 5 framework.
- To effectively showcase personal details, skills, and award-winning projects in a structured and easily scannable format.

- To implement interactive and dynamic features, including a persistent light/dark theme switcher and smooth-scrolling navigation, using JavaScript and the jQuery library.
- To ensure the final website is well-structured, maintainable, and hosted publicly on GitHub Pages.

4. Scope of the Project

The project is focused entirely on front-end development. It is a single-page application designed to act as a personal resume and portfolio. The scope **includes** the implementation of UI/UX features like theme switching and animations. The scope **excludes** any backend functionality; for instance, there is no server-side integration or database for a contact form. The project was built using standard web technologies and open-source libraries (Bootstrap, jQuery) and is intended to be viewed across all modern web browsers.

5. Tools & Technologies Used

Tool/Technology	Purpose
HTML5	Markup and content structure.
CSS3	Styling and layout management
VS Code	Code editor
JavaScript / jQuery	Implemented for DOM manipulation, event handling for the theme toggle, smooth scrolling, and dynamic content updates.
Bootstrap 5	Leveraged for its powerful mobile-first responsive grid system, pre-styled components, and utility classes to accelerate development.
Google Fonts	Used for importing custom web fonts ('Inter' and 'Source Serif Pro') to enhance typography.

6. HTML Structure Overview

The HTML document is structured using semantic HTML5 tags to ensure clarity and accessibility.

- **<header>**: Contains the top navigation bar (<nav>), which is made sticky using a Bootstrap class.
- **<main>**: Acts as the container for all the primary content sections of the page.

- **<section>**: Each distinct part of the portfolio (Hero, About, Skills, Projects, Contact) is wrapped in a <section> tag with a unique ID for navigation.
- **Bootstrap Grid**: The layout heavily relies on Bootstrap's grid system (, ,) to ensure responsiveness.
- **<footer>**: Contains the copyright information and dynamically updated year.

7. CSS Styling Strategy

The styling strategy was to use Bootstrap as a foundation and layer custom styles on top for a unique look and feel.

- **External CSS**: All custom styles are located in a single style.css file.
- **CSS Variables**: CSS variables (:root) are used extensively to define the color palette for both light and dark themes. This makes theme switching efficient, as only the variable values need to be changed via JavaScript.
- **Bootstrap Overrides**: Custom styles were written to complement Bootstrap's defaults, ensuring a unique brand identity while retaining Bootstrap's functional layout.
- **Responsive Design**: While Bootstrap handles most of the responsiveness, custom styles for typography and spacing were also designed to adapt to different screen sizes.

8. Key Features

Feature	Description
Fully Responsive Design	The site fluidly adapts to all screen sizes, from mobile phones to desktops, thanks to the Bootstrap 5 grid system.
Light/Dark Theme Toggler	Users can switch between a light and dark theme. The choice is saved in the browser's localStorage and is remembered on future visits.
Smooth Scrolling	Clicking on navigation links smoothly animates the scroll to the corresponding section of the page, implemented using jQuery's .animate() function.
Scroll-Reveal Animations	Sections fade and slide into view as the user scrolls down the page, adding a dynamic and engaging feel to the user experience.

Dynamic Content	The copyright year in the footer is automatically updated to the current year using jQuery, ensuring the information is always current.

9. Challenges Faced & Solutions

Challenge	Solution
Integrating a custom theme with Bootstrap's default styling.	This was solved by using CSS variables for all custom colors. This allowed for easy theme switching and overriding Bootstrap's colors without breaking its component structure.
Making the theme preference persist across browser sessions.	The solution was to use the browser's localStorage API. jQuery was used to save the user's theme choice ('light' or 'dark') and retrieve it every time the page loads.
Ensuring smooth and performant animations on scroll.	Instead of complex libraries, a lightweight jQuery solution was implemented to add a 'visible' class to elements as they enter the viewport, triggering a simple CSS transition.

10. Outcome

The project successfully achieved all its objectives, resulting in a clean, professional, and fully functional personal portfolio website. The integration of HTML, CSS, Bootstrap, and jQuery proved to be an effective technology stack for rapid front-end development. The final product is a high-quality digital resume that effectively showcases skills and award-winning projects in an interactive and visually appealing manner.

11. Future Enhancements

- **Functional Contact Form**: Integrate a third-party service like Formspree or Netlify Forms to make the "Say Hello" button send a real email.

- **Detailed Project Pages**: Create separate HTML pages for each project, allowing for more in-depth descriptions, image galleries, and links.

- **Performance Optimization**: Compress images and minify CSS and JavaScript files to improve the website's loading speed.

- **Advanced Animations**: Implement more complex animations on user interaction using a library like GreenSock (GSAP) to further enhance the user experience.

12. Sample Code

HTML Snippet: A Project Card using Bootstrap's Grid This code shows how a single project card is structured within the responsive Bootstrap grid.

```html
<section id="projects" class="section py-5">
    <div class="container reveal">
        <h2 class="section-title">Selected Projects & Achievements</h2>
        <div class="row g-4">
            <div class="col-lg-4 col-md-6">
                <div class="project-card h-100">
                    <div class="card-content">
                        <span class="tag">🏆 3rd Place Winner</span>
                        <h3>Chemical Graph Theory</h3>
                        <p>Developed a research project analyzing molecular structures using graph theory, which was presented at the 'Cosmo
                    </div>
                </div>
            </div>
```

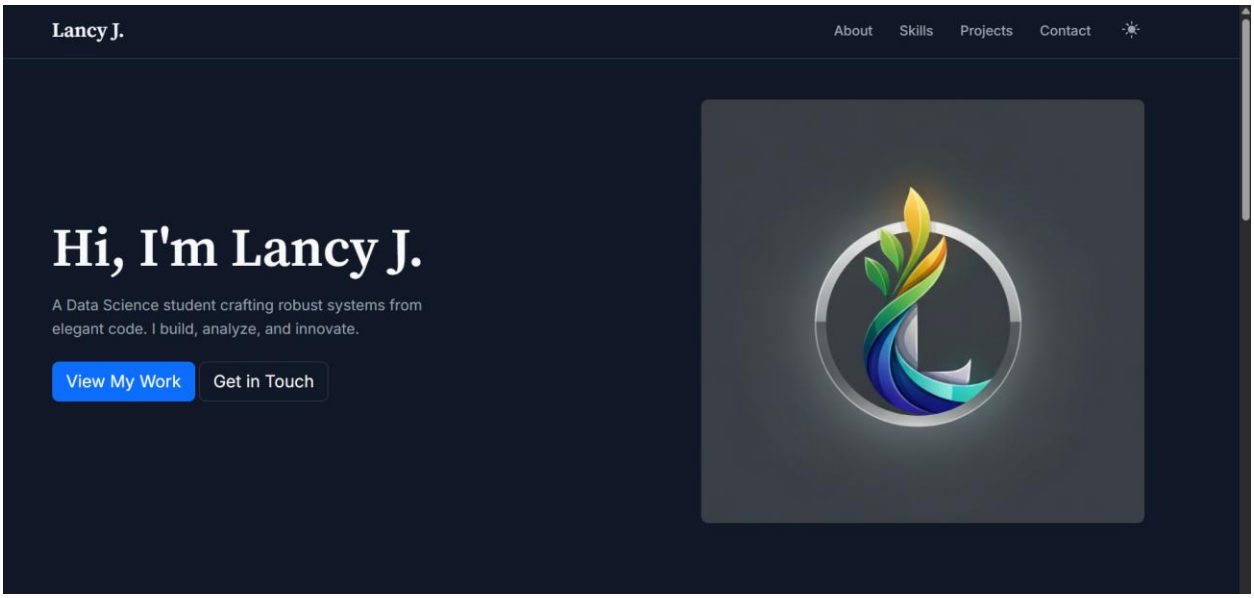
CSS Snippet: Theme Switching using CSS Variables This snippet demonstrates how CSS variables are defined for the light theme and then overridden for the dark theme.

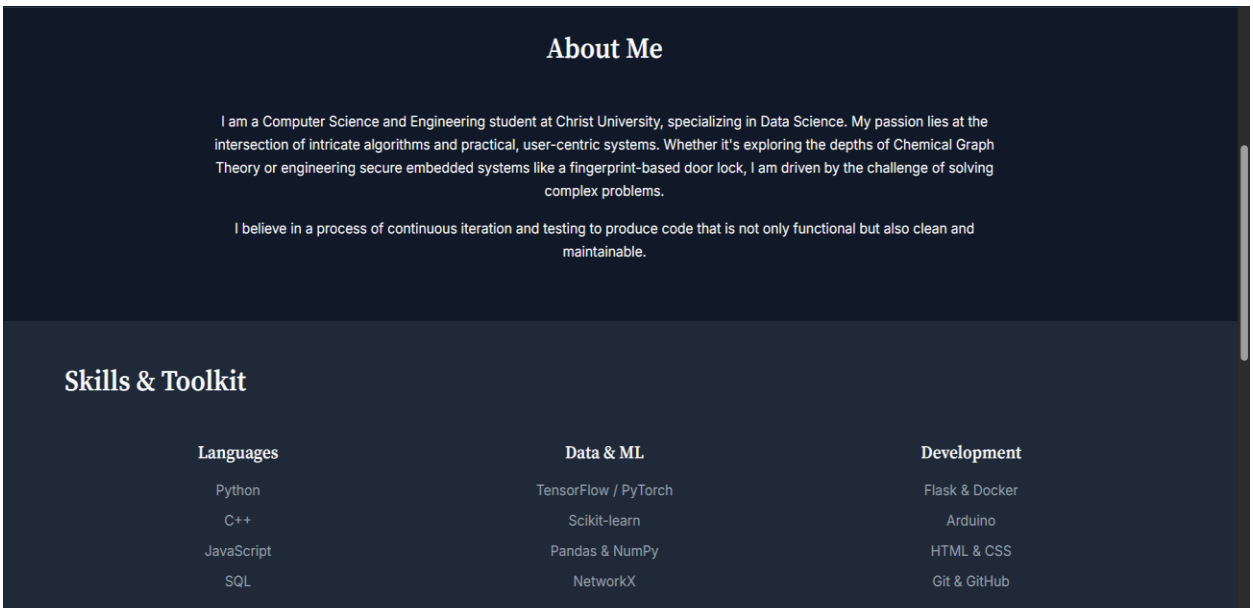
```css
:root {
  --font-primary: 'Inter', sans-serif;
  --font-secondary: 'Source Serif Pro', serif;

  --ease-1: cubic-bezier(0.25, 0.46, 0.45, 0.94);
  --ease-2: cubic-bezier(0.22, 1, 0.36, 1);

  /* Light Theme (Default) */
  --bg-primary: #FFFFFF;
  --bg-secondary: #F4F6F8;
  --text-primary: #121212;
  --text-secondary: #5C5C5C;
  --accent: #0d6efd; /* Bootstrap Primary Blue */
  --border-color: #E5E7EB;
  --card-shadow: 0 4px 12px rgba(0, 0, 0, 0.05);
  --card-hover-shadow: 0 8px 24px rgba(0, 0, 0, 0.08);
}

html[data-theme='dark'] {
  --bg-primary: #111827;
  --bg-secondary: #1F2937;
  --text-primary: #F9FAFB;
  --text-secondary: #9CA3AF;
  --accent: #4dabf7; /* Lighter blue for dark mode */
  --border-color: #374151;
  --card-shadow: 0 4px 12px rgba(0, 0, 0, 0.1);
  --card-hover-shadow: 0 8px 24px rgba(0, 0, 0, 0.2);
}

body {
  font-family: var(--font-primary);
  background-color: var(--bg-primary);
  color: var(--text-primary);
  line-height: 1.6;
  -webkit-font-smoothing: antialiased;
  transition: background-color 0.3s var(--ease-1), color 0.3s var(--ease-1);
```

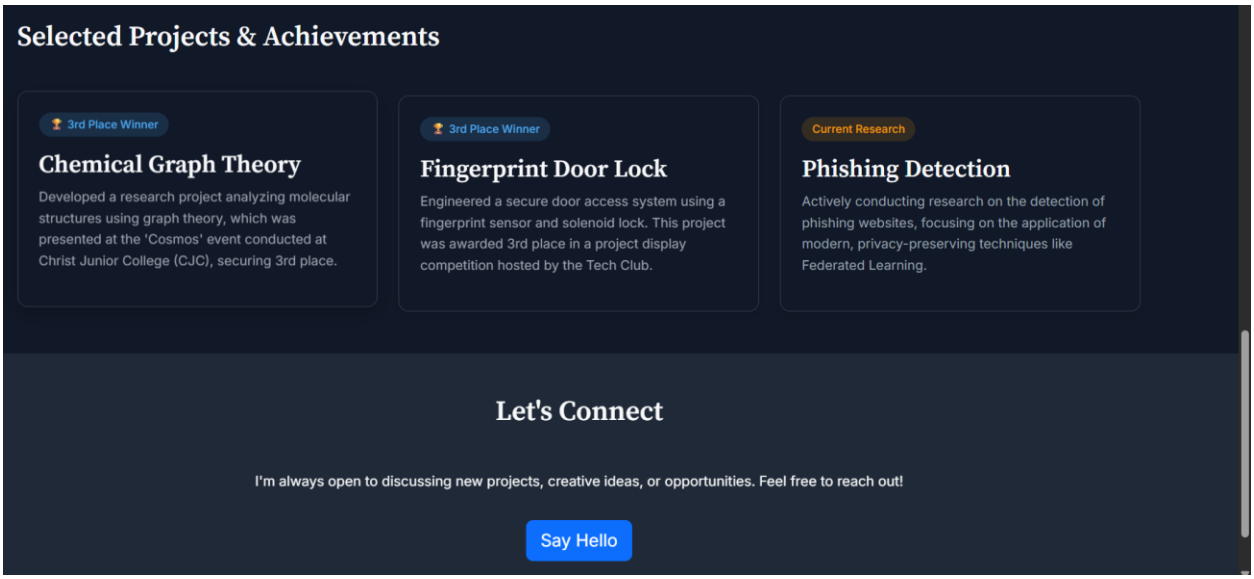
jQuery Snippet: Smooth Scrolling This jQuery code handles the smooth scrolling animation when a navigation link is clicked.

```
// --- SMOOTH SCROLLING ---
$('a[href^="#"]').on('click', function(e) {
    e.preventDefault();
    const target = $(this.hash);
    if (target.length) {
        $('html, body').animate({
            scrollTop: target.offset().top
        }, 800); // 800ms scroll speed
    }
});
```

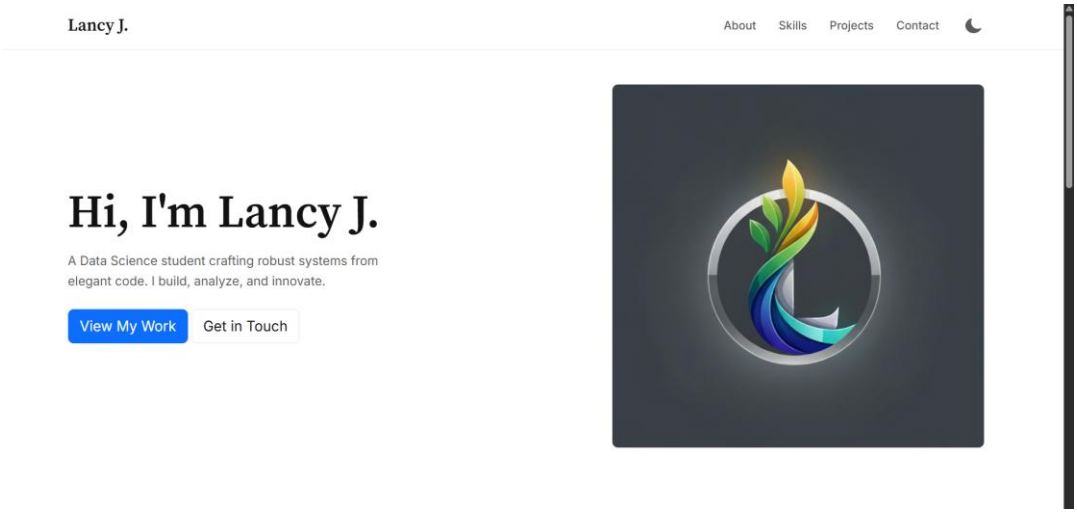
13. Screenshots of Final Output

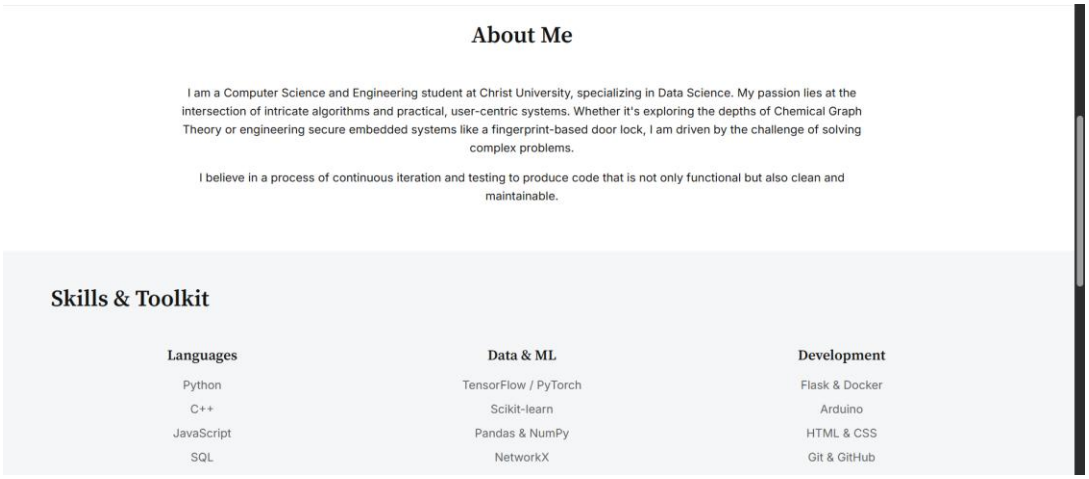


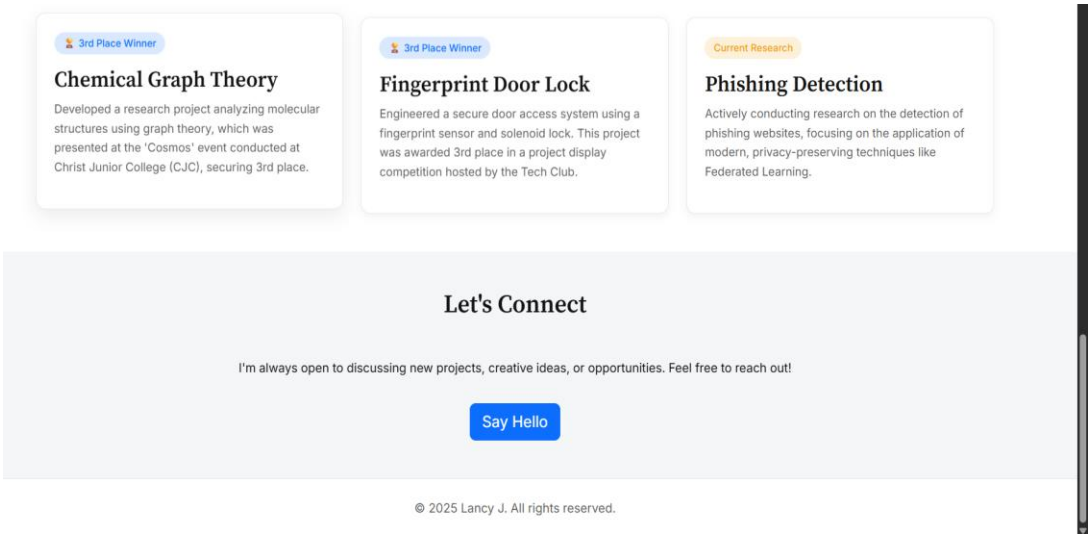




THE SAME WITH LIGHT THEME







11. Conclusion

This project was a comprehensive exercise in modern front-end web development. The goal of creating a responsive personal portfolio was successfully met by leveraging the strengths of Bootstrap for layout and jQuery for interactivity. I gained practical, hands-on experience in structuring a website with semantic HTML, styling with advanced CSS techniques like variables, and enhancing user experience with JavaScript. The project solidified my understanding of responsive design principles and the importance of creating a clean, maintainable codebase.

12. References

- Bootstrap 5.3 Documentation: https://getbootstrap.com/docs/5.3/
- jQuery API Documentation: https://api.jquery.com/
- MDN Web Docs (for HTML, CSS, JS): https://developer.mozilla.org/
- L&T Edutech LMS: https://learn.lntedutech.com/