CHENNAI INSTITUTE OF TECHNOLOGY (AUTONOMOUS)

Sarathy Nagar, Kundrathur, Chennai-600069

Approved by AICTE and Affiliated to Anna University, Chennai

DEPARTMENT OF INFORMATION TECHNOLOGY

WEB DEVELOPMENT

A Report on Internship

By

MITHUN M
23IT092
Information Technology

MAY 2024

CHENNAI INSTITUTE OF TECHNOLOGY CHENNAI-69

VISION OF THE INSTITUTION:

To be an eminent centre for Academia, Industry and Research by imparting knowledge, relevant practices and inculcating human values to address global challenges through novelty and sustainability.

MISSION OF THE INSTITUTION:

IM1.To create next generation leader by effective teaching learning methodologies and in still scientific spark in them to meet the global challenges.

IM2.To transform lives through deployment of emerging technology, novelty and sustainability.

IM3.To inculcate human values and ethical principles to cater the societal needs.

IM4.To contributes towards the research ecosystem by providing a suitable, effective platform for interaction between industry, academia and R &D establishments.

IM5.To nurture incubation centres enabling structured entrepreneurship and start-ups.

VISION OF THE DEPARTMENT:

To Excel in the emerging areas of Computer Science and Engineering by imparting knowledge, relevant practices and inculcating human values to transform the students as potential resources to contribute innovatively through advanced computing.

MISSION OF THE DEPARTMENT:

DM1: To provide strong fundamentals and technical skills for Computer Science applications through effective teaching learning methodologies.

DM2: To transform lives of the students by nurturing ethical values, creativity and novelty to become Entrepreneurs and establish start-ups.

DM3: To habituate the students to focus on sustainable solutions to improve the quality of life and the welfare of the society

DM4: To enhance the fabric of research in computing through collaborative linkages with industry and academia.

DM5: To inculcate learning of the emerging technologies to pursue higher studies leading to lifelong learning.

CERTIFICATE

This is to certify that the "**Internship Report**" Submitted by **MITHUN M (23IT092)** is the work done by him/her and submitted during the academic year **2023-2024**, in partial fulfilment of the requirements for the award of the degree of **BACHELOR OF TECHNOLOGY** in **INFORMATION TECHNOLOGY**, at **CODSOFT.**

Submitted for the End Semester Examination for Internship Held on ……..

Dr. A. R. KAVITHA, M.E., Ph.D.,
Head of the Department

Department Internship Coordinator

Internal Examiner
Date: - …….

External Examiner
Date: -……...

Internship Review Evaluation/Comments

Sl No.	Criterion	Max. Marks	Marks Allotted
1.	Regularity in maintenance of the diary.	10	
2.	Adequacy & quality of information recorded	10	
3.	Drawings, sketches and data recorded	10	
4.	Thought process and recording techniques used	05	
5.	Organization of the information	05	
6.	Originality of the Internship Report	10	
7.	Adequacy and purposeful write-up of the Internship Report	10	
8.	Organization, format, drawings, sketches, style, language etc. of the Internship Report	10	
9.	Practical applications, relationships with basic theory and concepts	10	
10.	Presentation Skills	20	
	Total	100	

External Internship Advisor's Name:

Company:

Date: Signature

INTERNSHIP OFFER LETTER

CodSoft
Code.Create.Succeed

INTERNSHIP OFFER LETTER

Date : **07/05/2024** **ID:CS11WX234856**

Dear,

MITHUN M

We would like to congratulate you on being selected for the " **Web Development"** virtual internship position with "**CodSoft"**. We at **CodSoft** are excited that you will join our team.

The duration of the internship will be of **4 weeks**, starting from **10 May 2024 to 10 June 2024.** The internship is an educational opportunity for you hence the primary focus is on learning and developing new skills and gaining hands-on knowledge. We believe that you will perform all your tasks/projects.

As an intern, we expect you to perform all assigned tasks to the best of your ability and follow any lawful and reasonable instructions provided to you.

We are confident that this internship will be a valuable experience for you, we look forward to working with you and helping you achieve your career goals.

By accepting this offer, you commit to executing assigned tasks diligently and ensuring excellence in all aspects of your work.

Best of Luck!

Thank You!

CODSOFT CodSoft IT SERVICE

CERTIFIED ISO 9001-2015 COMPANY

MSME MICRO, SMALL & MEDIUM ENTERPRISES

Founder (CodSoft)

MSME Registered

www.codsoft.in
contact@codsoft.in

ACKNOWLEDGEMENT

First, I would like to thank **CODSOFT** for giving me the opportunity to do an internship within the organization.

I am highly indebted to our Chairman **Shri. P. SRIRAM** and Principal **Dr. A. RAMESH, M.E., Ph.D.**, for the facilities provided to accomplish this internship.

I would like to thank my Head of the Department **Dr. A. R. KAVITHA, M.E., Ph.D.**, for his constructive criticism throughout my internship.

I am extremely great full to my department staff members and friends who helped me in successful completion of this internship.

MITHUN M
23IT092

PREFACE

I, student of the Department of Information Technology, require to do an Industrial Internship to enhance my knowledge. The purpose of Industrial Internship is to acquaint the students with practical application of theoretical concept taught to me during my course period. It was a great opportunity to have close comparison of theoretical concept in practical field.

The output of my analysis is summarised in a shape of Industrial Internship report. The content of report shows the details of sequence of these. This is my Industrial Internship report which I have prepared for the sake of my First Year Industrial Internship. Being an engineer, I should help the society for inventing something new by utilising my knowledge which can help them to solve their problem. So, considering that I am working at CODSOFT.

ABSTRACT

During my internship at Codsoft, I undertook a comprehensive web development program focused on enhancing my skills in HTML, CSS, and JavaScript. The internship encompassed three key projects: developing a personal portfolio, designing a functional calculator, and creating an engaging landing page. These projects not only sharpened my proficiency in front-end technologies but also deepened my understanding of JavaScript's intricate concepts. Through hands-on experience and mentorship at Codsoft, I acquired practical insights into building responsive interfaces, implementing dynamic functionalities, and optimizing user experiences. This internship not only fortified my technical abilities but also instilled in me a robust foundation for future endeavors in web development.

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WEEKLY OVERVIEW OF INTERNSHIP ACTIVITIES

WEEK	DATE	WORK DONE
WEEK 1 AND WEEK 2	10 TH MAY – 23 TH MAY	**PORTFOLIO PAGE**
WEEK 2.	24 TH MAY – 31 TH MAY	**CALCULATOR**
WEEK 3	1 ST JUNE – 10 TH JUNE	**LANDING PAGE**

1.INTRODUCTION

During my internship at Codsoft, I embarked on a transformative journey into the realm of web development. Assigned with three pivotal tasks—creating a personal portfolio, developing a functional calculator, and designing an engaging landing page—I delved deep into HTML, CSS, and JavaScript, gaining both breadth and depth in these foundational technologies.

The internship provided a hands-on learning environment where theoretical knowledge seamlessly merged with practical application. Crafting my personal portfolio enabled me to showcase my skills while refining my understanding of responsive design principles and semantic HTML. Developing a functional calculator honed my JavaScript proficiency, challenging me to implement complex algorithms and ensure intuitive user interfaces. Designing a compelling landing page pushed me to integrate CSS styling techniques creatively, enhancing user engagement through visually appealing layouts.

Throughout these projects, I not only mastered the fundamentals of front-end development but also explored advanced JavaScript concepts such as DOM manipulation, event handling, and asynchronous programming. Collaborating closely with experienced mentors at Codsoft, I learned to approach coding challenges systematically, iterate on designs based on user feedback, and adhere to industry best practices.

2.COMPANY OVERVIEW

CodSoft is a leading provider of IT services and consultancy, dedicated to pioneering innovative solutions that empower businesses across various industries. Specializing in the development of cutting-edge software solutions, CodSoft harnesses the transformative potential of technology to drive digital evolution.

Passionate about leveraging technology for positive change, CodSoft believes in the profound impact of software solutions in shaping the future. Their commitment to excellence is evident in their tailored IT services, designed to meet the unique needs and challenges of each client.

CodSoft's internship program stands as a testament to their investment in nurturing the next generation of industry leaders. By offering hands-on learning experiences and mentorship opportunities, CodSoft cultivates talent and fosters innovation within the IT sector. This commitment underscores their dedication to driving forward the boundaries of technology and fostering a culture of continuous learning and growth.

3.ABOUT THE TECHNOLOGY/PRODUCT

During my internship at CodSoft, I had the opportunity to immerse myself in a diverse range of web development technologies, enhancing my proficiency in HTML, CSS, and JavaScript. These foundational languages formed the cornerstone of three key projects assigned to me: creating a personal portfolio, developing a functional calculator, and designing an engaging landing page.

- **HTML:** As the backbone of web development, HTML (Hypertext Markup Language) became second nature to me as I crafted semantic structures for my projects. I learned to structure content effectively, ensuring accessibility and SEO best practices were implemented throughout.

- **CSS:** Cascading Style Sheets (CSS) allowed me to bring creative visions to life, transforming static HTML into visually compelling experiences. Through CSS, I mastered responsive design principles, optimized layouts for various devices, and integrated animations and transitions to enhance user engagement.

- **JavaScript:** JavaScript emerged as a dynamic tool in my toolkit, enabling me to imbue interactive functionalities into my projects. From validating form inputs on the portfolio page to implementing complex calculations in the calculator, JavaScript empowered me to create seamless user experiences. I deepened my understanding of JavaScript's DOM manipulation capabilities, event handling mechanisms, and asynchronous programming paradigms, equipping me with essential skills for modern web development.

4.PROBLEM STATEMENT

1. **Personal Portfolio:** Develop a responsive personal portfolio website that showcases skills, projects, and experiences effectively. The website should be visually appealing, easy to navigate, and accessible across different devices and screen sizes. Implement interactive elements to engage visitors and ensure the portfolio reflects professionalism and creativity.

2. **Functional Calculator:** Create a functional web-based calculator that performs basic arithmetic operations (addition, subtraction, multiplication, division) accurately. Ensure the calculator has a clean user interface, supports keyboard input for accessibility, and handles edge cases such as division by zero gracefully. Implement error handling to provide informative messages for users.

3. **Landing Page Design:** Design an engaging landing page for a hypothetical product or service. The landing page should effectively communicate the value proposition, features, and benefits of the product/service using compelling visuals and concise copy. Focus on capturing user attention, encouraging conversions through clear call-toaction buttons, and ensuring the page is optimized for performance and SEO.

5.METHODOLOGY

1. **Personal Portfolio:**
    - **Requirement Gathering:** Collaborate with stakeholders to define project goals, target audience, and desired features for the portfolio. o **Design Phase:** Create wireframes and mockups to visualize the layout, structure, and overall design of the portfolio. Incorporate feedback from stakeholders to refine the design.

    - **Development:** Implement the design using HTML for structure, CSS for styling, and JavaScript for interactive elements such as animations, form validations, and modal windows.

    - **Testing:** Conduct thorough testing across various browsers and devices to ensure responsiveness, accessibility, and functionality. Fix any bugs or issues identified during testing.

2. **Functional Calculator:**
    - **Requirement Analysis:** Define functional requirements for the calculator, including supported operations, input methods (keyboard and/or mouse), and error handling scenarios.
    - **Design and Planning:** Design the user interface for the calculator, focusing on simplicity, clarity, and ease of use. Plan the logical structure of the calculator's operations and implement the necessary algorithms.
    - **Implementation:** Develop the calculator using HTML for the layout, CSS for styling, and JavaScript for the logic

behind arithmetic operations, input handling, and error management.

- **Testing:** Conduct rigorous testing to validate the accuracy of calculations, functionality across different browsers and devices, and responsiveness to user inputs. Address any bugs or issues identified during testing.

3. **Landing Page Design:**
   - **Research and Analysis:** Conduct market research to understand target audience preferences, competitor analysis to identify design trends, and gather content (images, text) for the landing page.

   - **Development:** Translate the approved design into a responsive web page using HTML, CSS, and JavaScript for interactive elements such as sliders, forms, and animations.

   - **Testing:** Perform usability testing to ensure intuitive navigation, clear messaging, and effective call-to-action buttons. Validate the page's performance across different devices and screen resolutions.

6.OBSERVATION

1. **Personal Portfolio:**

   - **User Engagement:** The interactive elements such as animated transitions and hover effects significantly enhanced user engagement and visual appeal.
   - **Responsive Design:** Implementing a responsive layout ensured the portfolio was accessible and user-friendly across various devices, improving overall accessibility.
   - **Feedback Mechanism:** Incorporating a contact form with client-side validation enabled seamless communication with potential employers or clients, enhancing usability.

2. **Functional Calculator:**

   - **Accuracy and Reliability:** The calculator reliably handled arithmetic operations, including edge cases like division by zero, ensuring accurate results and robust functionality.
   - **User Interface:** The minimalist design and intuitive button layout facilitated ease of use, providing a seamless user experience without unnecessary distractions.
   - **Accessibility:** Keyboard support for input and clear error messages contributed to accessibility, making the calculator accessible to users with disabilities.

3. **Landing Page Design:**

   - **Conversion Rate:** Optimizing call-to-action buttons and strategic placement of key information improved conversion rates, encouraging users to take desired actions.
   - **Visual Appeal:** High-quality images, balanced typography, and cohesive color schemes contributed to a visually appealing design that captured and retained user attention.

7.PROJECT IMPLEMENTATION

1.Portfolio Page

1. **Requirement Gathering and Analysis:**
   - **Define Goals:** Clarify the purpose of the portfolio page (e.g., showcasing skills, projects, resume download).
   - **Target Audience:** Identify the primary audience (e.g., potential employers, clients, collaborators).

2. **Design Phase:**
   - **Wireframing:** Create wireframes to outline the layout and structure of the portfolio page. Sketch out key sections like the homepage, about me section, project gallery, contact form, etc.

3. **Development:**
   - **Setting Up Environment:** Start with setting up a development environment with necessary tools (text editor, version control system like Git). ○ **HTML Structure:** Build the basic structure of the portfolio using semantic HTML5 tags, ensuring accessibility and SEO best practices.

   - **CSS Styling:** Apply CSS styles to enhance the visual presentation, ensuring consistency in typography, colors, spacing, and responsive design principles using media queries.

- **JavaScript Functionality:** Implement JavaScript for interactive elements such as navigation menus, image sliders, form validation, and modal pop-ups for project details.

4. **Testing:**
   - **Browser Compatibility:** Test the portfolio page across different browsers (Chrome, Firefox, Safari, Edge) and ensure consistent functionality and appearance.
   - **Responsive Design:** Validate responsiveness across various devices (desktops, tablets, mobile phones) using tools like Chrome Developer Tools or responsive design simulators.

5. **Deployment:**
   - **Domain and Hosting:** Register a domain name (if necessary) and choose a reliable web hosting provider to deploy the portfolio page.

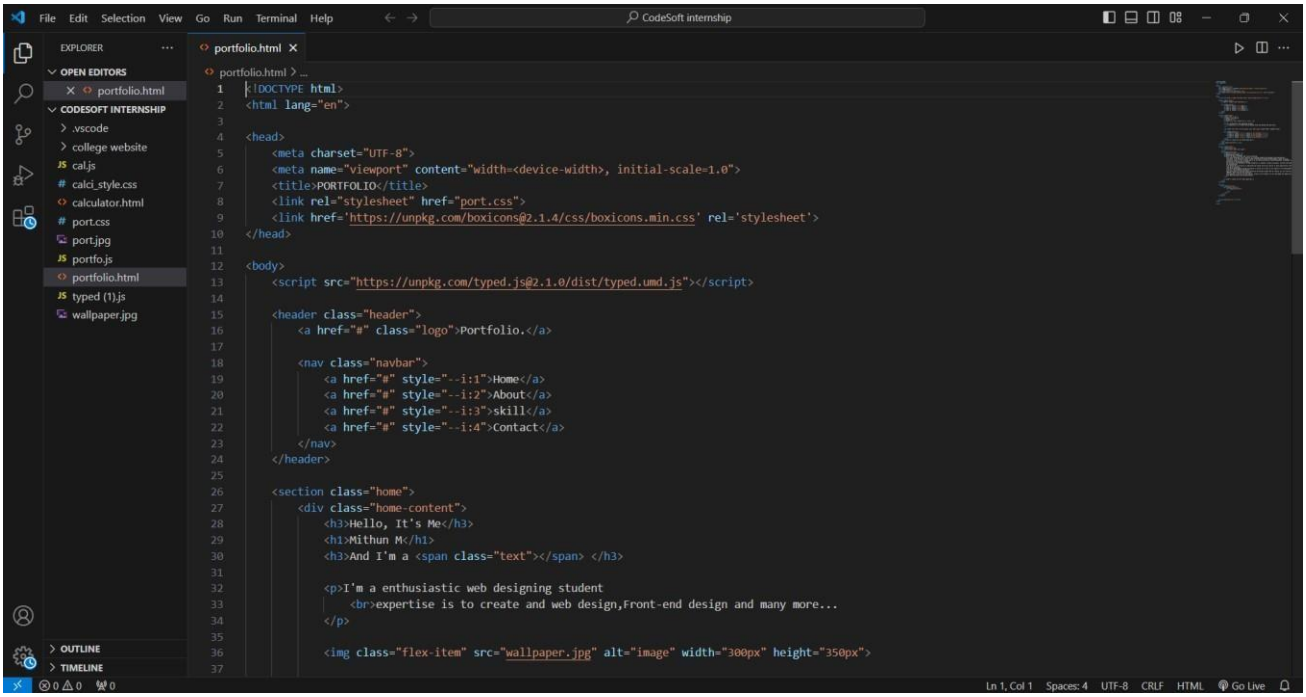

Fig 7.1 Code

OUTPUT:

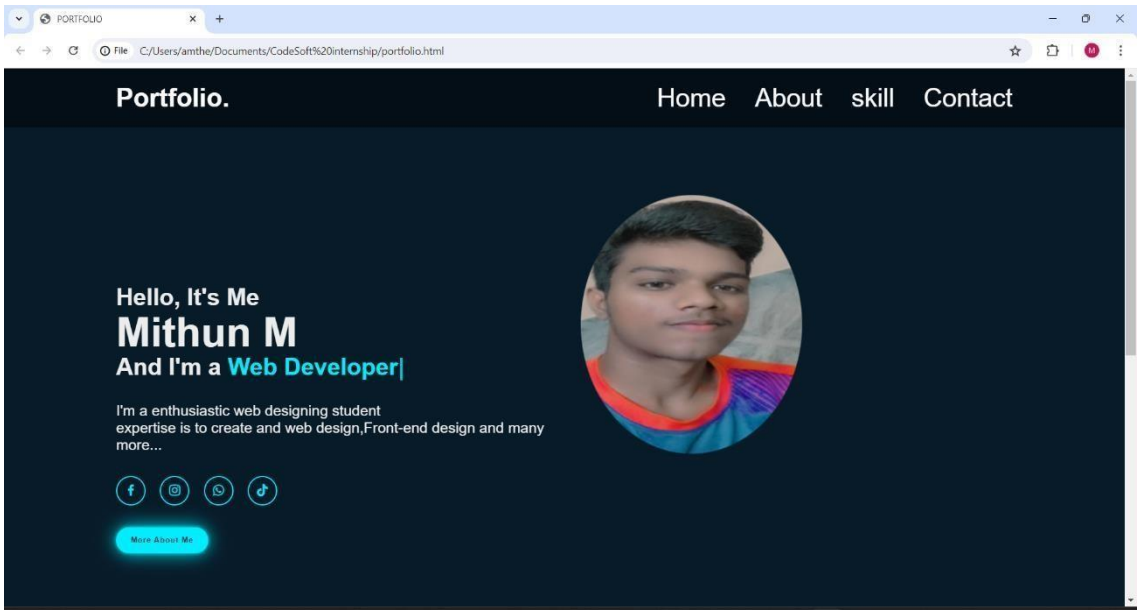

Fig 7.2 Portfolio Page

2.Calculator:

1. **Requirement Gathering and Analysis:**
    - **Define Operations:** Specify the arithmetic operations the calculator will support (addition, subtraction, multiplication, division).
    - **User Interface Design:** Determine the layout and design elements for the calculator, including buttons, display area for inputs and results, and error handling mechanisms.

2. **Design Phase:**
    - **Wireframing:** Sketch out the layout and structure of the calculator interface, including the placement of buttons and the display area for inputs and results.

3. **Development:**
    - **Setting Up Environment:** Create a development environment with a text editor and version control system (e.g., GitHub).
    - **HTML Structure:** Build the basic structure of the calculator using HTML, including buttons for numeric digits, arithmetic operators, and a display area for inputs and results.
    - **CSS Styling:** Apply CSS styles to enhance the visual presentation of the calculator, ensuring consistency in typography, colors, spacing, and responsive design for various screen sizes.
    - **JavaScript Functionality:** Implement JavaScript for the calculator's logic, including functions to handle arithmetic operations (addition, subtraction, multiplication, division).

4. **Testing:**
    - **Functionality Testing:** Test each arithmetic operation (addition, subtraction, multiplication, division) to ensure accurate results under various scenarios and edge cases.
    - **User Interface Testing:** Validate the user interface for responsiveness, accessibility, and usability across different devices and screen sizes

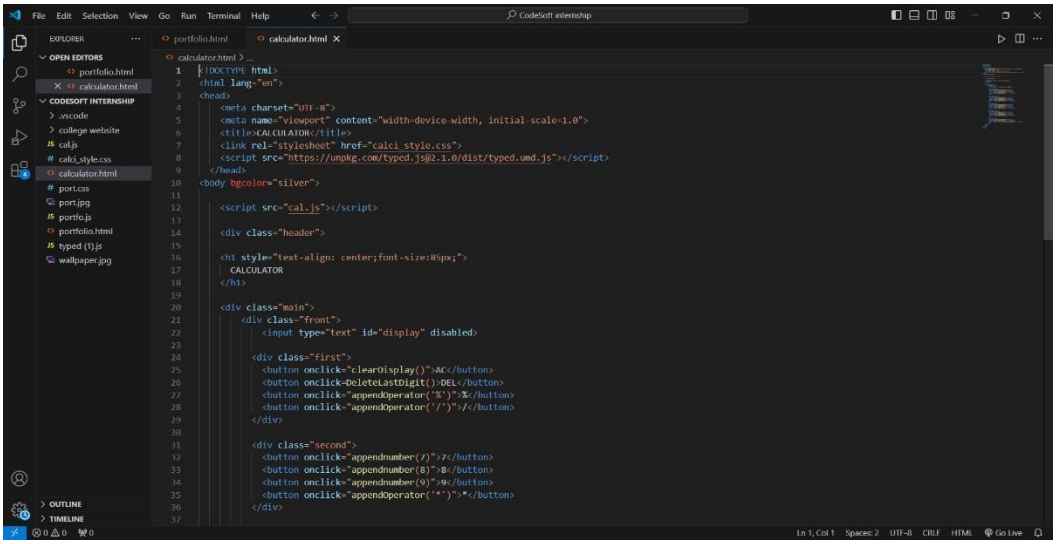

Fig7.3 Calculator

OUTPUT:

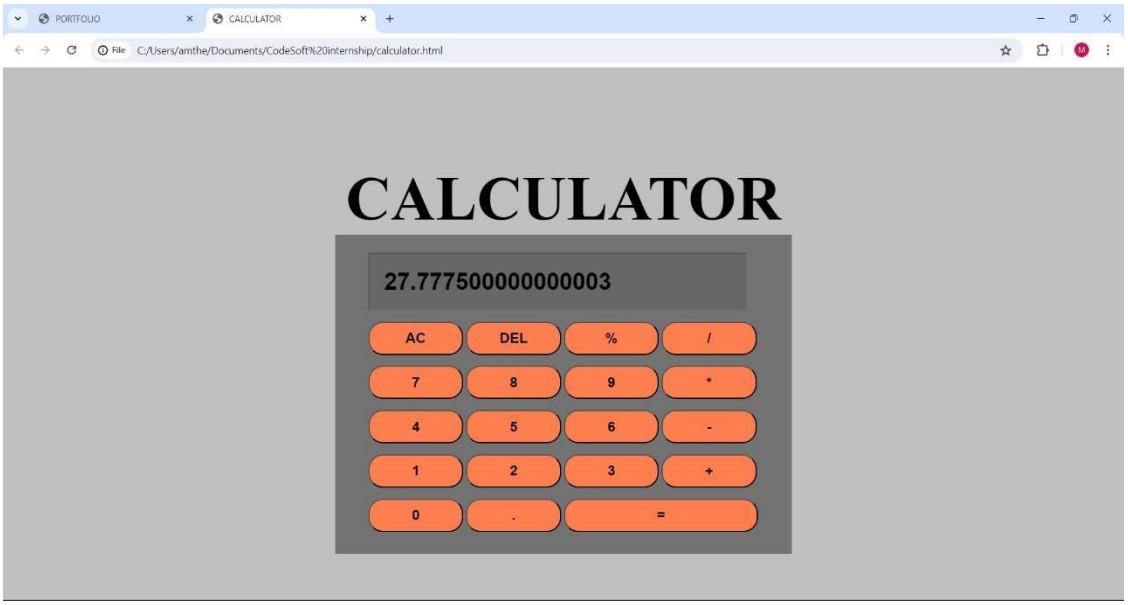

Fig7.4 Calculator

3.Landing Page

1. **Requirement Gathering and Analysis:**
    - **Define Purpose:** Clarify the primary goal of the landing page (e.g., promote a product/service, capture leads, encourage sign-ups).
    - **Target Audience:** Identify the audience demographics and their specific needs or pain points the landing page should address.
    - **Content Planning:** Gather compelling content including headlines, value propositions, images, and call-to-action (CTA) buttons.

2. **Design Phase:**
    - **Wireframing:** Create wireframes to outline the layout, structure, and key elements of the landing page. Sketch out sections such as hero/header, features/benefits, testimonials, and CTA.
    - **Mockups:** Develop visual mockups using design tools (e.g., Figma, Adobe XD) to visualize the final look and feel of the landing page. Iterate based on feedback to achieve an appealing design.

3. **Development:**
    - **Setting Up Environment:** Set up a development environment with a text editor and version control system (e.g., Git).

    -

- **HTML Structure:** Build the basic structure of the landing page using semantic HTML5 tags, including sections for headers, images, text content, forms, and CTAs. o **CSS Styling:** Apply CSS styles to enhance the visual presentation of the landing page, focusing on typography, color scheme, layout responsiveness, and ensuring compatibility across different devices.
- **JavaScript Functionality:** Implement JavaScript for interactive elements such as sliders, modal pop-ups, form validations, and animations to improve user engagement and interaction.

4. **Testing:**
   - **Cross-browser Testing:** Test the landing page across different browsers (Chrome, Firefox, Safari, Edge) to ensure consistent behavior and appearance. o **Usability Testing:** Conduct usability tests to evaluate navigation flow, readability, and effectiveness of CTAs. Gather feedback to optimize user experience and conversion rates.
   - **Performance Testing:** Monitor and optimize loading times, image sizes, and script execution to ensure fast page load speeds and a smooth user experience.
5. **Deployment:**
   - **Domain and Hosting:** Register a domain name (if necessary) and choose a reliable web hosting provider to deploy the landing page.

     SSL Certification: Secure the landing page with HTTPS encryption using SSL/TLS certificates to protect user data and enhance trustworthiness.

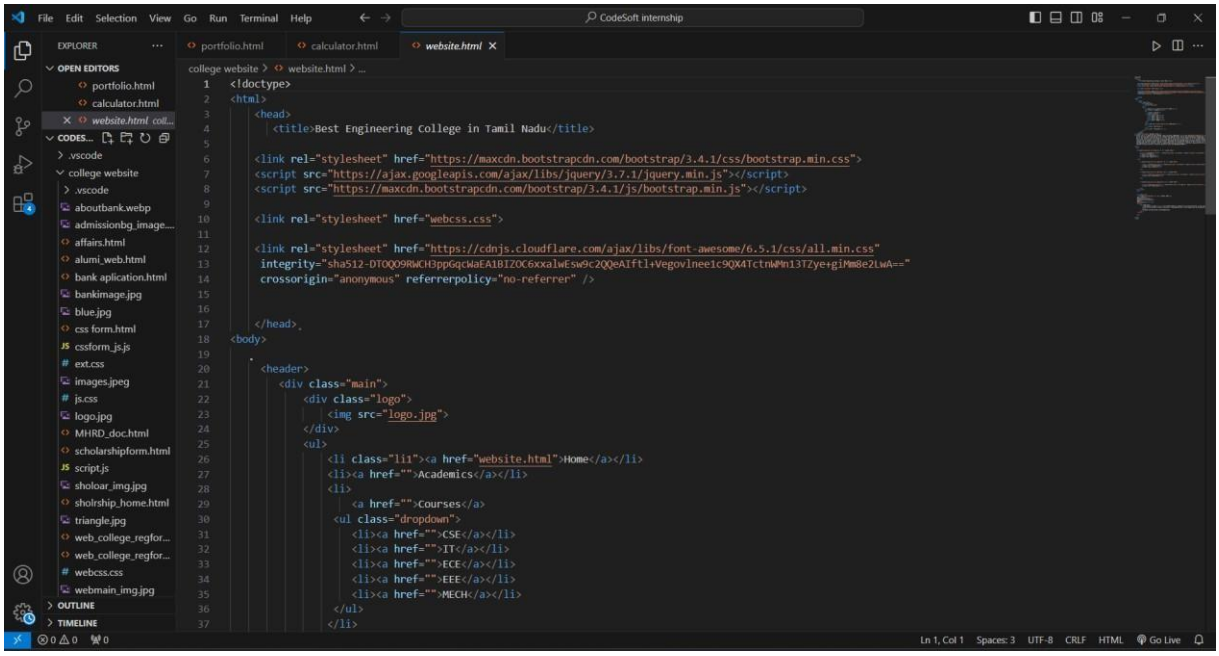

Fig7.5 Code

OUTPUT:

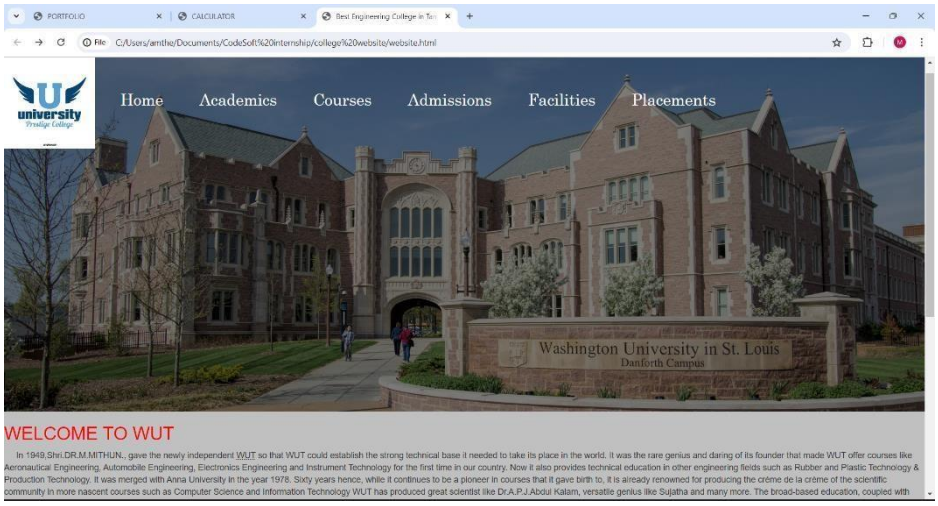

Fig7.6 Landing Page

8.TECHNOLOGIES USED

Tech Stack Used:

1. **Portfolio:**
    - **HTML5:** Used for creating the structure and semantic markup of the portfolio website, ensuring accessibility and SEO best practices.
    - **CSS3:** Styled the portfolio with CSS for layout, typography, colors, and responsive design across different devices.
    - **JavaScript (ES6+):** Implemented interactive features such as animations, form validations, and modal windows to enhance user experience and engagement. o **Frameworks/Libraries:** CSS Grid/Flexbox for responsive design utilities and grid system management.

2. **Calculator:**
    - **HTML5:** Structured the calculator interface with HTML, including buttons for numeric digits, arithmetic operators, and display areas for inputs and results.
    - **CSS3:** Styled the calculator layout and design for visual appeal, ensuring clarity and usability of the user interface.
    - **JavaScript (ES6+):** Implemented logic for arithmetic operations (addition, subtraction, multiplication, division), input handling, error management, and display of results dynamically.

3. **Landing Page:**
    - **HTML5:** Created the landing page structure using HTML, including sections for headers, images, text content, forms, and call-to-action buttons.
    - **CSS3:** Styled the landing page for aesthetic appeal, focusing on typography, color scheme, layout responsiveness, and cross-browser compatibility.
    - **JavaScript (ES6+):** Implemented interactive elements like sliders, modal popups, form validations, and animations to enhance user engagement and interaction.
    - **Frameworks/Libraries:** For responsive design features CSS Grid/Flexbox for layout management is utilized.

4. **Development Tools:**
    - **Text Editors:** Used tools like Visual Studio Code, Sublime Text, or Atom for coding and editing HTML, CSS, and JavaScript files.

      Version Control: Managed codebase with Git for version control, allowing collaboration, tracking changes, and maintaining project integrity.

    -

9.CERTIFICATE

10.CONCLUSION

During my internship at Codsoft, I undertook the challenge of developing three key projects: a personal portfolio, a functional calculator, and an engaging landing page. Each project provided invaluable opportunities to deepen my knowledge and skills in web development technologies—HTML, CSS, and JavaScript—while also exploring advanced concepts in JavaScript programming.

Overall, my internship experience at Codsoft was transformative, equipping me with not only technical skills but also valuable insights into collaborative development processes and industry best practices. I am grateful for the guidance and mentorship received, which enabled me to grow professionally and contribute meaningfully to real-world projects.

These projects have solidified my passion for web development and prepared me to tackle future challenges in the dynamic field of technology. I look forward to applying my learnings and continuing to evolve as a developer in pursuit of innovative solutions.

PO&PSO ATTAINMENT

PO 1	**Engineering knowledge**	Yes	identified and defined project requirements, ensuring clear objectives and constraints were established for effective solution development.
PO 2	**Problem analysis**	Yes	Identified user needs and functional requirements for each project to ensure solutions met specific objectives.
PO 3	**Design/Development of solutions**	Yes	Implemented creative and technically sound solutions using HTML, CSS, and JavaScript to address project requirements effectively.
PO 4	**Conduct investigations of complex problems**	No	Researched and resolved challenges such as responsive design, complex algorithms, and user engagement metrics to optimize project outcomes.
PO 5	**Modern Tool usage**	Yes	Leveraged tools like Bootstrap, jQuery, and analytics platforms to enhance development efficiency, user experience, and project performance.
PO 6	**Engineering and society**	No	Designed projects with accessibility features, ethical data handling, and user-centric interfaces to align with societal values and regulatory standards.
PO 7	**Environment and Sustainability**	No	Incorporated efficient coding practices and optimized web performance to reduce resource consumption and promote sustainable development.

PO.No	Graduate Attribute	Attained	Justification

PO 8	**Ethics**	Yes	Upheld ethical standards in data privacy, marketing transparency, and accurate representation of products/services throughout project implementation.
PO 9	**Individual and team work**	Yes	Collaborated effectively within teams and independently managed tasks to achieve project goals while adapting to stakeholder feedback.
PO.No	**Graduate Attribute**	**Attained**	**Justification**
PO 10	**Communication**	Yes	Effectively communicated project objectives, design concepts, and technical details to stakeholders and team members throughout the project lifecycle.
PO 11	**Project management and finance**	Yes	Managed project timelines, resources, and budgets effectively to deliver quality outcomes on schedule and within allocated resources.
PO 12	**Life-long learning**	Yes	Demonstrated continuous learning and skill development in HTML, CSS, JavaScript, and project management practices throughout the internship.

PSO 2	To create innovative ideas and solutions for real time problems in Manufacturing sector by adapting the automation tools and technologies.	**Yes**	Automation tools optimize production processes, reduce errors, and enhance product quality, ensuring competitiveness and sustainability in the global market.

PSO.No	Graduate Attribute	Attained	Justification
PSO 1	To analyze, design and develop solutions by applying the concepts of Robotics for societal and industrial needs.	**Yes**	Robotics improves efficiency, safety, and precision across industries like healthcare, disaster response, and agriculture, enhancing societal well-being and technological advancement.