

Practical Implementation of Web Development and Design: Internship Experience at HRsoftBD

by

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Internship report (CSE4099-A) submitted in partial fulfillment of the requirements for the degree of

Bachelor of Science in Computer Science and Engineering

Under the supervision of

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DECLARATION

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I declare that this internship report entitled *Practical Implementation of Web Development and Design: Internship Experience at HRsoftBD* is the result of my own work except as cited in the references. The internship report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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CERTIFICATE

This is to certify that the internship report entitled **Practical Implementation of Web Development and Design: Internship Experience at HRsoftBD**, submitted by **Chayonika Das** (Student ID: 212014031) is a undergraduate student of the **Department of Computer Science and Engineering** has been examined. Upon recommendation by the examination committee, we hereby accord our approval of it as the presented work and submitted report fulfill the requirements for its acceptance in partial fulfillment for the degree of *Bachelor of Science in Computer Science and Engineering*.

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Dedicated to
my Father

– *Chayonika Das*

EXECUTIVE SUMMARY

My internship was done at HRSoftBD which is a software company located in Dhaka. I aimed at putting my study into practice in an actual web development setup. As the Junior Web Developer of the development team, I assisted in designing and creating friendly and responsive web applications. Among my major tasks was to work on the web-based management systems of the company whereby I assisted in developing dynamic interface and general system performance to enhance user experience. In the internship, I had to work on front-end and back-end development, such as developing interactive UI components, and integrating APIs. The internship enabled me to develop user-friendly and appealing UI/UX of different applications. I created wireframes, mockups and user interface designs that were usability-centered, accessibility-centered and responsive. I also got to know about how design tools could be practically applied, as well as workflows applied in workplaces in real environment. I also assisted in enhancing the current systems by reorganization of code, bugging and cross-browsing. These jobs demanded technical expertise in technologies like HTML, CSS, JavaScript, and PHP. My professional experience provided me with real-life practice in teamwork, version control, debugging, and agile practices of the development process. I have learned to work with designers and other developers successfully, project schedules, and adjust to requirements. This experience enhanced my knowledge of the entire web development cycle, including planning and development, testing and deployment. The internship had its challenges too with issues of balancing performance, security and usability being a challenge. My knowledge has been solidified in UI/UX design and front-end development which will allow me to work in the future in this field. All in all, this experience had a great impact on my technical and professional development, enabling me to have a successful career in web development.

Keywords: Web development, UI/UX design, PHP, HTML, CSS, JavaScript, Interface Design, Responsive Design, Team Collaboration

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Chapter 1

Introduction

1.1 Introduction

Internships can be defined as a critical transition between theory and practice, wherein students put theoretical knowledge into practical settings. Throughout my internship with HRSoftBD as a web Developer, I was exposed to projects that were based on desktop application development and this has played a major role on my technical as well as my professional development. Mostly, I worked on front-end development and UI/UX design projects, which played a crucial role in my professional and technical development. I was to design complete UI/UX mockups of a number of applications on the mobile and web platform and integrate responsive user interfaces as a login and signup page in HTML, CSS and JavaScript. I also helped to enhance the functionality of the systems by fixing the minor problems in the back-end with the help of PHP and providing adequate input validation to provide a better user experience and security. These assignments allowed me to practice and implement the design principles and problem-solving skills that I have learned during my academic course work and obtain the practical experience related to the modern web technologies and design tools such as figma and Canva. The experience of this internship gave me a great deal of understanding of the practice of development in the real world, reinforced my sense of user-centered design, and taught me to work effectively and visually presently in a working environment to provide efficient and pleasing solutions to users through web delivery.

1.2 Objective of the internship report

The primary aim of this internship report is to record and cogitate on the acquired practical knowledge and technical skills within the three months of my internship as a Web Developer within HR Soft BD. This report is intended to provide a concise outline of my learning experience, contributions, and professional development during the process of working on the projects. The main objective was to put theoretical principles of web development studied in academics in practice. Moreover, this report will also aim at highlighting how I was able to have practical experience in learning how to translate a design into working code as well as working with the development team to ensure a smooth frontend to backend integration. It will also be used to show my development in solving problems, attention to detail, and following the modern code practice in a workplace setting. This report is about what I learned during my internship. It shows the skills I got better at how I solved problems and what I learned about being a professional. The report wants to show how this internship helped me get ready for jobs in software development.

Chapter 2

Background

HRSoftBD is a company that works with technology started on 01 January 2012 in Dhaka, Bangladesh. The company has a history of the last 14 years of offering the world-class services in the IT field, with a heavy emphasis on the software development, web solutions, and digital transformation. Engr is its founder and leader. A.H.M. Rokmunur Zaman Rony as Founder & Chief Executive Officer [HR Soft BD \(2026a\)](#). The corporate office of HR Soft BD is situated in P-7, Nurjahan road, Mohammadpur, Dhaka-1207 and registered office is situated in 48, Kazi Nazrul Islam Avenue, Karwan Bazar, Dhaka-1215. The company has a staff of 25-35 experienced specialists and is affiliated with a number of leading industry associations, such as BASIS (Bangladesh Association of Software and Information Services), DCCI, BCS and BCC. It has an official motto of Technology for Next [HR Soft BD \(2026b\)](#). The company's Mission is "We will offer the best services to our clients with our creativity, honesty, responsibility and hard work with 100% quality and with support". It's Vision is to "Deliver IT/Software solution Globally and be a Leading IT/Software Company in the World" [HR Soft BD \(2026c\)](#). HR Soft BD is in the Information Technology (IT) and Software Development sector of Bangladesh under the sub-sector of IT Services and Custom Software Solutions. The company is a full service digital solution provider and has a complete line of products and services, including:

Website design and development (static and dynamic), Integration of e-commerce solutions and payment gateway, Development of Android and iOS mobile applications, software development and ERP systems, HR & Payroll solutions, Digital marketing such as SEO, mass SMS, voice call and email marketing, Niche applications such as OMR (Optical Mark Recognition), ballot/vote counting packages,

fingerprint attendance, image/video processing and AI-based services, and Domain registration and web hosting [HR Soft BD \(2026a\)](#).

This brings the company into the fast developing ICT (Information and Communication Technology) industry of Bangladesh, a government focus area through the program Smart Bangladesh. The HR Soft BD is mostly B2B, serving a wide range of customers such as businesses, educational establishments, non-governmental organizations, clubs, associations, media houses (online news portals), and other organizations interested in professional yet low-cost digital solutions. The company boasts of having been able to render service to over 500 clients and having been able to complete over 5,000 projects within the country and internationally [HR Soft BD \(2026a\)](#). With a high competitive environment with small and medium-sized IT companies, HR Soft BD will position itself as one of the trusted software companies in Bangladesh focusing on creativity, technical quality, innovation, security, and high-quality customer support.

The main goal of the three months internship period at HR Soft BD as a Web Developer was to fill the gap between theoretical and practical knowledge in the sphere of software development. HR Soft BD is a full service IT solution provider, which deals with web design and development, e-commerce solutions, dynamic web portal and online news portal. My key roles encompassed: Helping the senior web developers to design and create responsive websites with HTML, CSS, JavaScript, and backend technologies, Creating UI/UX designs and turning it into functional web pages that are responsive in various devices, Design sign up and login pages, Resolving functionality issues, Providing services related to e-commerce Web site development such as product pages, Testing and other minor improvements on the existing client websites. Beyond development tasks, I also designed more than 200 poster for digital marketing contents. One thing I did during the internship was learn about technologies for the frontend like Tailwind CSS. I learned how to make websites that're easy to use and look good on different devices. I also tried to get better at solving problems writing clean code paying attention to details and working with a team.

Overall this internship was a chance to try out what I learned in school on a real project. I got to improve my skills in making websites that work well on devices and learned about user interface design. This will help me become a web developer in the future.

Chapter 3

Scope of Work

The different projects I worked on during the internship were, about technology and design. During my internship at HRSoftBD enabled me to put into practice what I have learned in academic environment. The following The different projects I worked on during the internship were, about technology and design.is what I did:

- I created entire UI/UX mockups of a food delivery app (FOODCORT), Grocery Management System, and Salon Management System in both mobile and web versions. I also designed UI/UX based Garage Management System for Dhaka Bar Association. These designs were aimed at designing user-friendly interfaces that were easy to use and general user experience.
- I created reactive front-end interfaces such as the login and signup pages with HTML, CSS and JavaScript. This made the experience on various devices and browsers even and seamless.
- I was involved in the improvement of already existing user interfaces through the improvement of layout structure, flow of navigation, and hierarchy of the visuals to make the applications easier and more efficient to the users.
- I helped to combine front-end elements with the functionality of the back-end, make sure the data flows are correct, and users can interact with the system smoothly.
- I also completed simple backend operations with the help of PHP like input validation and solving of minor functional problems to enhance system reliability.

- I also used design tools like Canva and Figma to design wireframes and prototypes that assisted me in visualizing and refining application designs before coding.
- I also had my hand in a practical organizational activity where I designed a sample ballot paper of a voting system that would be in use in a real-life event and was able to have real time experience with the use of a system.
- I had to work with team members in a professional setting where I adhered to formal development practices and enhanced my skills in communication, problem-solving, and teamwork.
- I completed a demo project which was a small scale e-commerce site (a gadget shop), during which I used both the front-end and the basic concepts of the back end to create a functional online shopping interface.

Chapter 4

Internship Activities

4.1 Introduction of the Organization/Institution

HRSoftBD is a software development company that builds digital products for over 13 years and is a certified Information Technology Company, Registered by Government of Bangladesh with more than 13000 clients. The company is based in Dhaka and has been operating since 2012. It identifies itself as one stop solution to all your IT needs and has a team of highly qualified specialists who have the dedication to offer state of the art software solutions that satisfy client requirements. The organization has been able to attend to over 500 clients and has been able to undertake over 5,000 projects worldwide. It focuses on trusted delivery of solutions with regard to speed, scale, complexity, security and innovation. The main philosophy of HRsoftBD is customer-based development: Hello, World: We care our customers; That is why, our software are one of the best in Bangladesh. According to the company, whatever we do, our final goal is to meet the needs of our customers in the best way possible. We are offering our services with a single thing in mind and that is, they cannot be less than perfect and must surpass all the expectations.

The HRsoftBD provides extensive IT and digital services, such as:

- **Website Design and Development** - The company boasts that they are among the top-most web design and development companies in Bangladesh but they do not just design websites: Good web design and development is not just about good-looking colours, smooth layout and fancy elements. It is an art and we want to deliver the experience.

- **Dynamic Websites** - Complete functionality sites which are integrated with the business systems and provide customers with personalized experiences.
- **E-Commerce Development**- Solutions that help companies become successful on the internet with the help of technology that is geared towards growth and efficiency.
- **Mobile App Development**- Custom mobile applications for various platforms
- **Desktop Application Development**- Including Java-based desktop solutions.
- **SMS Marketing**- Bulk SMS services for businesses.
- **Email Marketing**- Comprehensive email marketing solutions.
- **Digital Marketing**- Complete digital marketing strategies.
- **Voice Call Services**- Voice communication solutions.
- **OMR Solutions**- Optical Mark Recognition technology.
- **Ballot Counting Software**- Electronic voting and counting systems.
- **E-commerce Development**- Online shopping platform development.
- **Online Newspaper Design**- Digital publishing solutions.
- **Domain Hosting Services**- Web hosting and domain registration.
- **Complex Web Application Development**- For enterprise-level solutions.

HRsoftBD has a wide range of clients such as businesses, clubs, associations, non-governmental organizations, unions and membership organizations in Bangladesh and abroad. To conclude, HRsoftBD is an imaginative, sincere, and outcome-oriented IT partner with a high quality delivery and international project experience. It continues to aim at surpassing the expectations of its clients with innovative and high quality software and digital solutions. All the introductory data is taken on the official home page of the company since there is no specific section on the company-profile page or an About Us section on the official site. The company is

a certified Information Technology Company, Registered by the Government of Bangladesh, ensuring compliance with local regulations and standards in the IT sector. We are committed to your project and can't wait to see that look of joy on your face as your idea takes shape, reflecting the company's client-centric approach and dedication to project success.

4.2 Work Accomplishment

Week 1 - UI/UX design of Garage Management System: In the first part of the internship, the organizational workflow, tools, and development environment were presented to me. I was able to see the way development teams work and run projects within professional environment. I had been familiar with available systems and had acquired a fundamental knowledge of the applications. The first week of my internship was devoted to the design of a UI/UX of a garage management system for Dhaka Bar Association. I designed organized templates and user interfaces in handling records of vehicles, services and customer data. The design focused on easy organization of data and flow of operations to achieve operational efficiency.

Learning: I learned how to create interfaces to service-oriented systems where the priority is on functionality, clarity, and efficiency of the workflow rather than on the visual complexity. This week has made me relate my theoretical knowledge to the real world practice especially in the expectations of UI/UX design.

Week 2 - Admin Panel Design: During the second week, I planned and developed an interface of an admin panel of a project titled Dr. Jahid's Portal to manage photo frames. The interface contained organized input fields, uploading files, and structured parts of the interface to have an efficient data entry and management. I made sure that the layout was easy to use and understand by administrative users. Completed the testing by uploading data into the portal.

Learning: I have learned that it is essential to design user-friendly and clean administration interfaces that will make managing complex data easier.

Week 3 - Data upload and UI/UX design Salon Management System: This week,

I was working on the data upload functionality to the portal, making sure it has adequate input validation and data organization. Also, I created UI/UX mockups of a salon management system which included appointment scheduling, service listing, and user interaction flows.

Learning: I learned that data validation enhances the reliability of a system, and that UI/UX design should be flexible to various business needs and user actions.

Week 4 - UI/UX Design FOODCORT (Mobile Application): This week I began creating entire UI/UX mockups to design the new project FOODCORT- A food delivery App. I was engaged in creating entire UI/UX mockups of the mobile application . I used the principles of user-centered design to develop user-friendly layouts.To improve the customer experience, I paid much attention to the development of intuitive navigation, the visual hierarchy, and user-friendly layouts. I did the technical Audit for an existing software (HRsoftBD Tracker). Identified the issues in the current version of the software, provided suggestions regarding the issues and made a report on this.

Learning: I have learned how to create mobile-first interfaces which are more focused on usability, accessibility, and easy user interaction.

Week 5 - UI/UX Design FOODCORT (Web Application): Added some new features (Tracking Order) and re-designed UI/UX mockups of the mobile application.Then I applied the same UI/UX layout of the FOODCORT to the web interface and polished the general layout. I was also able to maintain consistency of mobile and web versions and enhance design features like spacing, alignment, and navigation.

Learning: I got to know the necessity of cross-platform design consistency and the need to implement improvements through iterations taking into account the usability factors.

Week 6 - Front-End (Front-end implementation of the login page): During this week, I had an opportunity to use the HTML, CSS, and JavaScript to develop the login page of the web application, the FOODCORT. I made sure that responsive

design and alignment of UI components towards varying screen sizes was done. I found and fixed minor background problems with PHP such as formatting problems with session and adding validation to profile image uploads in HRsoftBD Tracker .

Learning: I acquired the skill of converting the UI/UX design into a functioning web interface and got exposed to the real-life aspect of responsive front-end development.

Week 7 - Front-End Development (Signup Page and Validation): I created the signup page and enhanced the current UI elements of the web app. I also tested backend validation in the form of PHP, such as allowing only valid image formats to be uploaded, and processing user input safely.

Learning: I got to know about the interaction of frontend and back-end systems to provide usability and security in web applications.

Week 8 - Real-World Task Ballot Paper Design: This week I engaged in a real-life organizational practice of designing a sample ballot paper of a voting system to be used in an official event. The design had to be accurate, clear and appropriately aligned in order to be used. I also re-designed the login page of HRMS software.

Learning: I got to know how the design work is used in the real-life context and what attention to detail and usefulness is paid to in the professional work.

Week 9 - E-commerce Website Development (UI and Front-End) of Gadget Shop: I started working on a small scale e-commerce site (gadget shop). I started by creating the logo for the gadget shop website. I created the UI design, such as home page, product listing page and product details. I used HTML, CSS and JavaScript to implement responsive front-end components.

Learning: The assignment allowed me to use my design and development experience independently and learn how the user interaction flows in the online shopping systems are in the real world.

Week 10 - Web Development (E-commerce) (Gadget Shop Backend Integration):

This week was the one I continued working on the e-commerce site, adding the PHP and MySQL backend functionality to it. I worked on product data, provided correct database connectivity, and enhanced system interaction via testing and refinement. The user data is inserted, after password hashing, in a prepared statement in the table users. Created the full Product Page with product listing and specifications, detailed view, image gallery, pricing and related products. Developed the add to cart feature using real time cart updates, quantity control and session cart control. Applied the entire Checkout Page with payment methods, order summary and confirmation of the order. Developed and implemented the Logout Page with secure termination of a session and redirecting to a user. Completed the completed core shopping process, browsing to checkout.

Learning: I was taught to combine front and back end systems to create a full-fledged web application and acquired some hands-on data handling knowledge. Also I learned, how to create a smooth end-to-end e-commerce customer experience, why state management can matter in cart and checkout systems, how to handle secure sessions to authenticate and logout, and what best practices to follow to create responsive, user-friendly product and checkout interfaces in real-world web applications.

Week 11 - Final Review, Test, and Documentation: During the last week, I created Mobile and Web application UI/UX mockups for Grocery Management System and I went through all the work done and made sure that all the projects were properly functioning, responsive, and of consistent design. I conducted testing to detect and resolve problems and recorded my results and work.

Learning: I have learned the need to test, debug, document and present work in a real world development environment in a professional manner.

This experience helped me understand how real-life development works. It showed me why user-centered design, responsiveness and continuous improvement are important. It also helped me apply what I learned in theory to real-life practice.

4.3 Challenges Faced

- **UI/UX Coherence in Multiple Systems:** It was difficult to design interfaces of various applications like food delivery, grocery, garage, salon, and e-commerce systems and use the same design language. Both systems had diverse users needs and had to be closely customised in terms of layouts, color scheme and patterns of navigation.
- **Complexity in Frontend-Backend Integration:** It was difficult to integrate front-end design with the backend functionality with PHP and MySQL, particularly dealing with form submission, file uploading and data validation. It entailed knowledge on the flow of data between the interface and the server.
- **Input validation and error handling:** The appropriate validation of user inputs (e.g. limiting the type of files accepted and appropriate data format) was not a very simple task and needed to be carefully coded to avoid errors in the system and enhance its reliability.
- **Time Management and Multi-Tasking:** The multi-tasking to handle several projects at the same time, such as, FOODCORT, admin panel design, salon system and the e-commerce site, meant that time management and prioritization was necessary to meet deadlines.
- **Theory-Practice Disjuncture:** Although theoretical knowledge was a solid base, practical development demanded additional emphasis on usability, performance, and user feedback. It was not easy in the beginning to adapt to these practical requirements.
- **Debugging and Continuous Testing:** UI bugs, browser compatibility and functional errors were required that had to be discovered and fixed through continuous testing and improvements, which was time consuming but needed.
- **Overcoming Challenges:** I have overcome these challenges through the use of browser developer tools to debug the pages and techniques of responsive design, researching solutions through documentation and online resources, practicing modular coding techniques, and team member feedback to improve the design and functionality.

Chapter 5

Methodology

During my internship, I followed an agile and iterative approach to software development, combining research-driven development with practical implementation. I approached each project through a systematic process that included requirement analysis, technology research, prototype development, testing, and refinement based on stakeholder feedback. I followed a work process which included requirement analysis, UI/UX design, front-end development, testing, and ongoing refinement with references to team members and project requirements. In all the tasks assigned to me, I started with requirement analysis and research. This encompassed user needs, analysis of the similar applications, and a review of current trends in the field of UI/UX design. The applications that I studied through design research included FOODCORT platform and my small-scale e-commerce site (gadget shop), with an emphasis on usability, accessibility, and responsive design principles. I also read about front-end technologies and best practices to facilitate an efficient implementation. I used an agile development cycle with iterative design and development cycle. Both features were originally created via wireframes and mockups with the help of such tools as Canva and then implemented in the front-end with the help of HTML, CSS, and JavaScript. I used prototyping style whereby the design was continuously improved by testing and feedback to ensure that the design was within the expectations of the users and the requirements of the system.

My data collection involved both primary and secondary data collection. The primary data were collected with the help of feedback provided by the supervisors and team members and the usability observations during the development. Secondary data consisted of web based documents, design principles, system analysis

that was done, and documentation of other web based applications. This aided in making informed decisions on design and development. I used HTML, CSS and JavaScript as the main front-end development technologies, and PHP and MySQL as the simple back-end development. Visual Studio Code was used to develop it and version control practices were practiced to maintain the codes. UI/UX design and prototyping were done using Canva and Figma.

In order to provide quality, I utilized testing techniques such as interface testing, cross-browser compatibility testing, and device responsiveness testing. I also engaged in debugging and validation especially on the user inputs and interactions with the back end. Design Code quality was ensured by designing in a modular way, with appropriate structuring, and through iterative enhancement.

I used a systematic work process where I planned tasks, provided regular progress reports, and coordinated with members of the team. The interaction with the supervisors and colleagues assisted in optimizing designs and fixing problems. This way of working allowed me to successfully implement theoretical knowledge in real-world situations without sacrificing usability, performance and design criteria in my work.

Chapter 6

Analysis and Findings

6.1 Results/Findings

Through my internship at HRSoftBD, I was able to successfully complete several UI/UX design and web development projects that reflected real-life implementations of front-end technologies and user-centered design concepts. The UI/UX of the application, the FOODCORT, was created in mobile and web format with full mock-ups and working login and Signup screens. These implementations ensured responsive design, improved navigation, and enhanced overall user experience across devices.

Moreover, I created UI/UX solutions to a few other systems such as a grocery shop, garage management system, and salon management system. The design strategies had to be adjusted to meet the various requirements of the users on each project like service management, product browsing and workflow operations. These designs focused on usefulness, organized patterns, and effective interaction patterns.

The photo frame management panel interface was created and built with structured input forms, file upload feature as well as a clean design. This enhanced the efficiency of the administration and made data management easier. Moreover, I have created a small-sized e-commerce site (gadget shop) with product display capabilities and simple integration of the back-end with PHP and MySQL, showing the capability to create a full-scale and operational web application.

The main technical lessons of this internship are that a more practical web development needs to be more responsive, cross-browsing, and user-friendly than an academic project. I have noted that user interaction and system efficiency are

heavily dependent on the design and that a slight change can greatly affect usability. Also, frontend-backend integration put an emphasis on the need to validate data appropriately and allow data flow between system components to be uninterrupted. The experiences were helpful to understand the industry level development practice and emphasize the necessity of ongoing testing, refinements, and flexibility in the real-world projects.

6.2 Learning and Development

HRSoftBD internship gave me a lot of learning opportunities which helped in my technical and professional growth. An important lesson that I have had is understanding how to apply the principles of UI/UX design in practice. I also learned more about the direct relationship between the user-centered design, visual hierarchy and usability and the user experience in the real world. My experience on front-end development has assisted me to advance my understanding of HTML, CSS and JavaScript and more so in designing responsive and interactive user interfaces. I was also able to have a simple knowledge of the backend technologies such as PHP and MySQL that made me have a basic knowledge of how the front end components interact with the server-side systems. The experience enhanced my skill in creating complete functional web applications. I got to know that it is crucial to develop iteratively and continuously improve. In contrast to academic projects, real-world applications need to be frequently updated, tested and refined according to feedback. This taught me the importance of flexibility, bug fixing and performance tuning in software development. My problem-solving abilities were also built up during the internship as I needed to address the problems of the consistency of the UI, its responsiveness, and functionality. The problems I have solved helped me to develop an analytical skill and details. Moreover, I was able to get exposed to using design and development tools like Canva, Figma, and Visual Studio Code and learning about the practice of version control. Professionally, I gained skills of teamwork, communication and time management working in a team. I was taught to organize team work, deadline, and to be effective when handling tasks given to them. Being exposed to real-life projects also enabled me to know the expectations of the industry and workplace dynamics. On the whole, the internship was instrumental in helping to bridge the disconnect between theory and practice,

improving my technical skills, as well as, equipping me with a professional career in front-end development and UI/UX design. Communication and presentation skills were enhanced through regular stake holder meetings, project presentations, and technical discussions with team members. I learned to translate technical concepts into business language for nontechnical stakeholders.

6.3 Tools and Technology

- **UI/UX Design and Prototyping:** Canva and Figma was utilized a lot in designing UI/UX mockups, wireframes, and visual layouts of various applications like the FOODCORT and the e-commerce site. It has assisted in designing user-friendly solutions and mapping out how applications will be structured to be implemented.
- **Web Development and Interface Design:** I used the current design concepts, including responsive design, mobile-first design, and cross-browser compatibility. CSS tricks and JavaScript functionality were employed in order to support the user interaction, the consistency of layout and the user experience.
- **Database Management:** The application data, especially in the e-commerce site project was stored and manipulated using MySQL. The database was communicated with through the PHP and CRUD operations were performed and data properly handled and validated.
- **Development Environment:** Visual Studio code was utilized as the primary development environment to code and debug. It offered crucial tools and extensions that facilitated effective front-end and backend development processes.
- **Testing and Debugging Tools:** Debugging, inspecting of the UI components, testing of responsiveness and testing of cross-browser compatibility were performed using Google Chrome Developer Tools. Frequent tests were done to spot and correct bugs and enhance performance.

- **Version Control and Collaboration:** Git was deployed to provide version control to handle the changes in the code and assist in its collaborative development. It assisted in ensuring the code integrity and monitoring the project progress.
- **Hardware and System Requirements:** The development and testing was done in a Windows based system using a standard hardware configuration, which would allow smooth execution of development tools and programs. Research, testing and collaboration could not have been done without internet connectivity.
- **Other Tools:** Learning and Troubleshooting was done using different online tools and documentation. There was also the use of basic design and editing tools to aid in the development of the UI and the preparation of the contents.

6.4 User Guideline

The applications created will have a simple, intuitive and user-friendly interface. The guidelines that will help the user to navigate and use the system will be as follows. To find and use the system features, the following guidelines will help:

- **Accessing the Application:** The web application is accessible via a normal web browser like Google Chrome. Stable internet connection is advisable to achieve maximum performance.
- **User Registration (Signup):** The new users are expected to create an account by providing pertinent information such as name, email, and password. All the inputs must be valid and only the allowed formats (picture files to post profiles) are allowed. Once successfully registered, users will be able to log into the system.
- **User Login:** Users are allowed to log in with their credentials. The system checks the input by the user to secure the system and avoid unauthorized access. Where there is wrong type of credentials, proper error messages are shown.

- **Navigation and Interface Usage:** Its interface is user-friendly and responsive. The application has a well-labeled menu and buttons that allow users to access various parts of the application. The design is adaptive to the different sizes of the screen and can be used on many devices such as desktops, tablets and mobile phones
- **Food Delivery Application (FOODCORT):** Thanks to the optimized UI/UX design, users can navigate through the available items, see their description, and interact with the interface without issues. The system provides transparent display of information and is easy to understand and use.
- **Using E-commerce Website (Gadget Shop):** One can navigate through product details, different sections and browse products easily. The system will be structured to offer an easy shopping experience through structured display of products and easy navigation.
- **Checks on input and error handling:** The system incorporates the validation mechanisms that will guarantee that the users input the right and acceptable information. An error is clearly shown in the form of error messages to help users rectify errors.
- **Performance and Compatibility:** The application is performance optimized and can be used with multiple browsers. Users are also encouraged to use the most recent browsers to enjoy an ultimate experience.
- **General Guidelines:** Users are expected to be honest in the information they give at registration and be guided by instructions on the screen. To troubleshoot, a page refresh or input recheck should fix most problems.

6.5 Impact of the Internship

The HRSoftBD internship helped the organization by assisting with the current projects in terms of the design of the UIs and front-end development. The process of creating entire UI/UX mockups in the application called the *FOODCORT* contributed to the creation of the visual framework and usability of the mobile and web interfaces, making the system more approachable and oriented towards

the current design trends. The enhancements led to increased user engagement and efficiency of the application. The responsive nature of the log-in and sign up pages was developed to provide a more secure and easier user experience. My efforts to eliminate possible user errors and enhance system reliability through the proper validation and enhancing interface consistency were successful. My efforts towards improving the current elements of UI also contributed to the objective of the organization to provide the best and user-oriented software solutions. Also, the experience of me working on solving minor backend problems, and helping with integrating the front and backends helped to enhance the functionality of a system and its performance. The small-scale e-commerce site (gadget shop) that I designed showed that web technologies could be practically applied to it and could be used as a reference point in similar future projects in the organization. Another way my involvement with the organization helped in operational activities was in the designing of a ballot paper in a real-life voting system, which also helped the organization conduct the events efficiently and accurately. This project was a first hand experience of applying the design skills in the real world organization. Overall, my work as an intern helped the organization to achieve its goals, as it was involved in simplifying the application, improving the efficiency of the system, and constantly evolving it. It further demonstrated the importance of the UI/UX design and front-end development in giving effective and conveniently available digital solutions. The successful completion of multiple concurrent projects demonstrated effective project management capabilities and contributed to improved client confidence in HR Soft BD's ability to deliver complex software solutions within specified timelines. Overall, my internship work directly supported HR Soft BD's mission of providing comprehensive IT solutions by expanding their service capabilities, improving existing products, and establishing foundations for future growth in specialized market segments.

Chapter 7

Conclusions and Recommendations

7.1 Conclusion

My 11-week internship was a life-changing experience as I was able to test my theoretical knowledge in a professional setting. Throughout this internship, I managed to work on various projects across many areas such as the garage management system, photo frame administration panel, salon management system, FOODCORT food delivery application, a voting ballot design, and a complete e-commerce web site using a full stack gadget store. I started my journey in UI/UX design, where I worked on making user-friendly interfaces with particular business requirements. I shifted to front-end development with HTML, CSS and JavaScript as the weeks went by and was later involved in some of the fundamental back-end operations with PHP and MySQL. The challenges posed in each of the projects were different - it was necessary to guarantee responsive design and accessibility in the FOODCORT application or to provide secure data validation and structured data processing in diverse systems. The practicality of creating a full e-commerce site on my own was a rewarding experience, in that I was able to combine both design and development expertise to create a working system. In addition to technical development, this internship enhanced my knowledge on the practice of software development in the real-life world. I got to know the significance of iterative design, detail focus, consistency of design in any given platform and the significance user experience in defining the success of any application. Timely work on a task and involvement into an official project in an organization also contributed to the development of my skills in working under pressure and producing quality results. This experience has played a major role in closing the industry expectations and academic learning.

My expertise and confidence in UI/UX design, front-end development and basic full-stack implementation has increased. Also, I have enriched problem-solving skills, proper time management and documentation skills. I gained high-level technical competence directly relevant to a professional software development job, and learned that effective software development is not only about writing code, but also about empathising with users, creating a user-friendly interface, ensuring robust error handling, extensive testing, and creating detailed documentation. It not only gave me valuable insights into challenges and opportunities in the IT industry of Bangladesh, especially in the development of solutions to local market needs, but also taught me how to manage my time efficiently, prioritize my projects, and agile developmental strategies which will act as a guiding principle in my future career in the field of software engineering.

7.2 Limitations

Although the internship was an informative learning experience in terms of practical experience in the field of UI/UX design and web development, there were a number of constraints that were experienced throughout the 11-week internship. To begin with, the internship was rather brief, which limited the implementation in some of the projects. The majority of activities were related to front-end development and simple back-end integration. Advanced database optimization, secure user authentication (with appropriate encryption), integration of payment gateway (in the case of the FOODCORT and e-commerce projects), and comprehensive testing, which are complex features, could not be implemented fully due to time constraints. Secondly, the projects were created in a simulated or controlled environment as opposed to live production systems. This restricted the ability to respond to real-life issues like user traffic, server scalability, security weaknesses during real usage and performance issues during load. Third, since the internship was predominantly working on an individual basis, the majority of my projects were small-scale applications. It had little exposure to large team-based development patterns, version control processes (including Git), agile, or team-based collaboration tools typical of professional software development experiences. I was new to production level software development, so there was a learning curve that influenced early phases of the project. This was necessitated by the need to understand the requirements of

the organization, stakeholder expectations, and professional development practices, which necessitated some adjustment time that would have been used in developing more features. Some projects had their scope limited by the current system architectures and compatibility needs. This occasionally precluded the use of more modern or efficient techniques which could have enhanced the overall system performance and maintainability. There were also projects that were not at full implementation but were at the mockup or half implementation stage. As an example, the photo frame salon management system, garage management system and the photo frame admin panel were mostly designed with a strong emphasis on UI/UX, and little to no backend development. The FOODCORT web application was not fully built (only a basic validation of the login and signup pages), and the e-commerce site, although more comprehensive, had only a basic CRUD functionality. Lastly, resource limitations like access to advanced design tools, high quality libraries, or high quality development environments sometimes influenced the quality and speed of some deliverables. Irrespective of these weaknesses, the internship would have been a great introduction to the application development in practice and the discovery of areas, which need future focus and education.

7.3 Recommendations

My time at HRsoftBD as an intern provided me with useful experiences in the dynamic nature of the firm and its orientation towards providing various types of IT solutions to clients, including web applications, e-commerce solutions, management systems and specialized software like the ballot counting software. I also noted that the organization has some more to reinforce its processes in some aspects in order to improve efficiency and further growth. As an illustration, offering better onboarding and documentation of the interns might allow the new members of the team to grasp the projects being performed faster and get involved in the work more efficiently during the first weeks. Also, one can observe the evident skill gap among the development team, which is mostly due to a lack of technical training and knowledge-sharing opportunities, limiting the use of modern frameworks and innovative solutions. Also, it could be beneficial to allow interns to attend more often client requirement gathering meetings and entire project life cycle meetings to gain a better insight into the reality of project management and communication

with stakeholders. An advantage would also be to develop a centralized body of knowledge or components library of common features (authentication systems, administration panels, responsive layouts). This may accelerate the growth of other similar projects such as food delivery, salon management, garage systems, and e-commerce applications. Moreover, holding internal skill-sharing seminars or tech talks between the team members might promote the constant learning process and aid in the distribution of the best practice in current trends in UI/UX, optimization of the backend, and new technologies. I think that these small improvements would further enrich the internship experience and enable the company to get the most out of the interns and stay at its high standards in terms of software development and delivery of clients.

Chapter 8

Acknowledgments

I really appreciate my supervisor Prof. Muhammad Golam Kibria, PhD, SMIEEE for being so supportive. He always encouraged me. Gave me useful tips to help me with my work. His guidance was a help because it allowed me to balance my internship work with my academic goals. This balance was important for me to get the most out of my learning experience. My academic objectives and internship work were both important to me. Prof. Muhammad Golam Kibria helped me to manage them well. My sincere gratitude to my industry supervisor, Md. Atiqur Rahman To his assistance, support, and helpful insights throughout the internship. His encouragement and good reviews helped me to struggle all the challenges and build my expertise in web development and UI/UX design. I would also like to acknowledge the whole development team of HRSoftBD as it was very cooperative, shared knowledge and a working environment that offered me a productive and enjoyable internship experience. I also owe my faculty members and mentors in the university the support and recommendation that helped me to be able to have this internship. Lastly, I wish to express my utmost gratitude to my family and friends who have stood by me in this journey through their love, support, and moral support. The internship has been a milestone in my career advancement and without the concerted effort and direction of all the people mentioned above it would have been nonexistent.

Appendix

UI/UX Design screenshots:

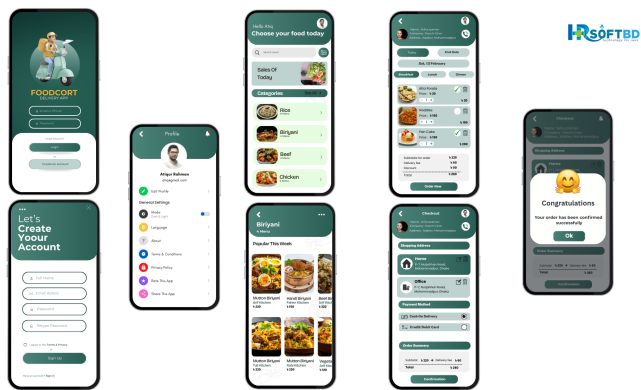


Figure 8.1: Food Delivery Mobile Application - FOODCORT

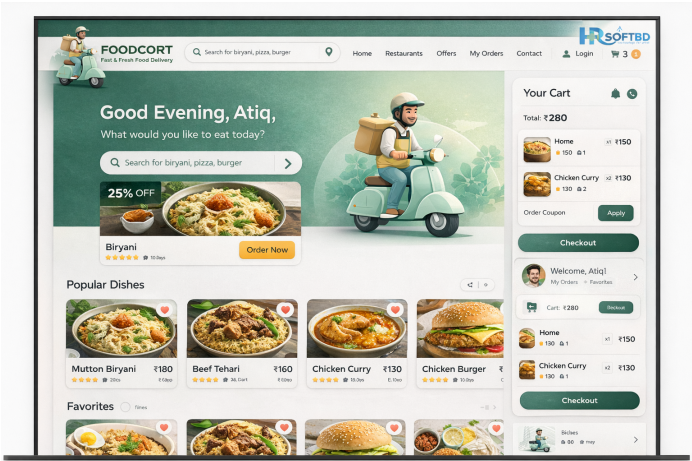


Figure 8.2: Food Delivery Web Application - FOODCORT

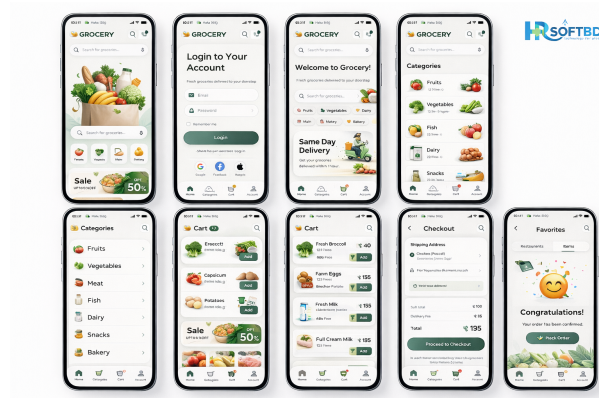


Figure 8.3: Grocery Management System Mobile Application

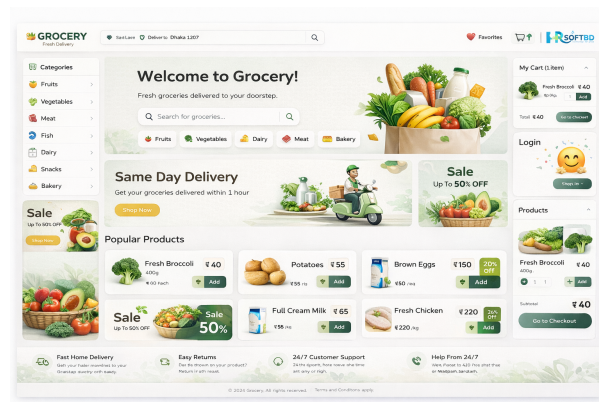


Figure 8.4: Grocery Management System Web Application

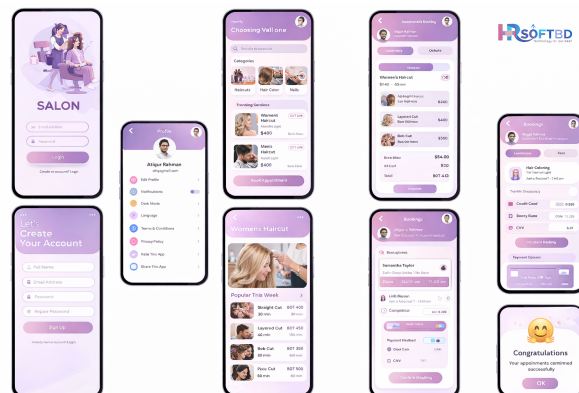


Figure 8.5: Salon Management System Mobile Application

Signup and Login page screenshots:

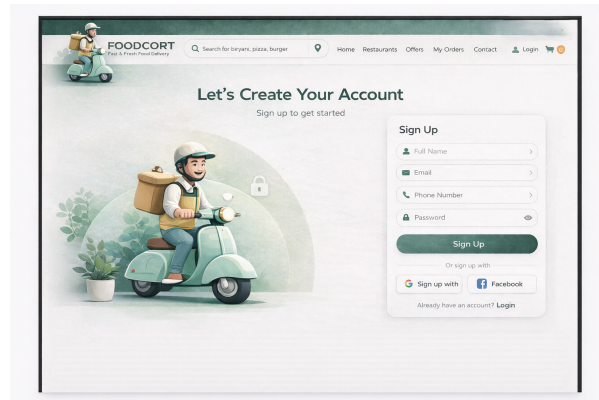


Figure 8.9: Signup page for FOODCORT web application

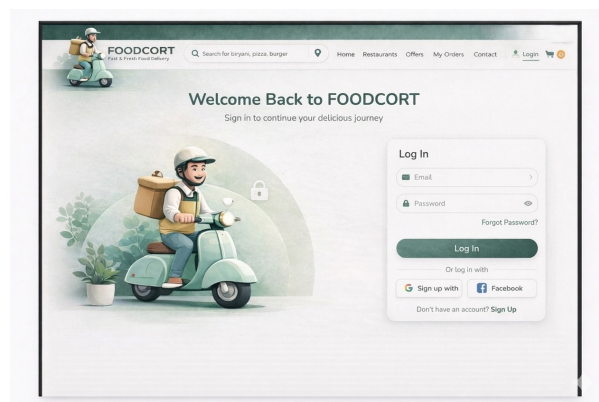


Figure 8.10: Login page for FOODCORT web application

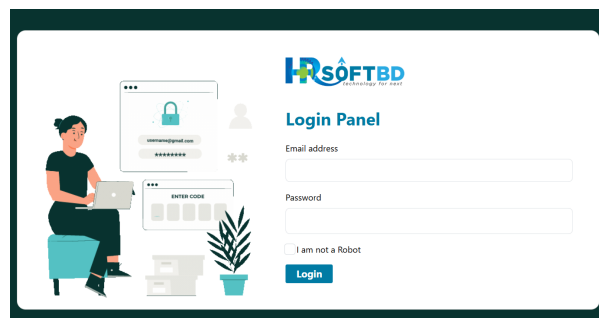
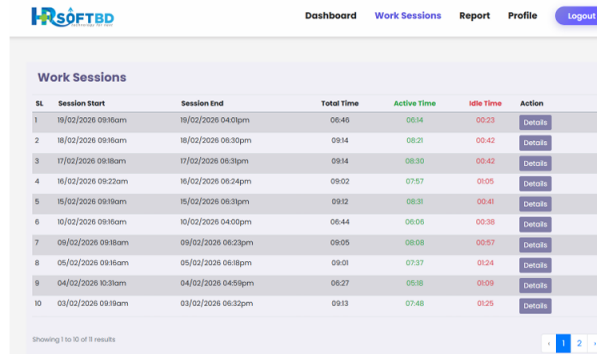


Figure 8.11: Login page for HRMS

HRsoftBd Tracker Application and Management Portal APP



SL	Session Start	Session End	Total Time	Active Time	Idle Time	Action
1	18/02/2026 09:16am	18/02/2026 04:01pm	06:45	06:14	00:23	Details
2	18/02/2026 09:16am	18/02/2026 06:30pm	09:14	08:21	00:42	Details
3	17/02/2026 09:18am	17/02/2026 06:31pm	09:14	08:30	00:42	Details
4	16/02/2026 09:22am	16/02/2026 06:24pm	09:02	07:57	01:05	Details
5	15/02/2026 09:19am	15/02/2026 06:31pm	09:12	08:31	00:41	Details
6	10/02/2026 09:16am	10/02/2026 04:00pm	06:44	06:06	00:38	Details
7	09/02/2026 09:18am	09/02/2026 06:23pm	09:05	08:08	00:57	Details
8	05/02/2026 09:18am	05/02/2026 06:18pm	09:01	07:37	01:24	Details
9	04/02/2026 10:31am	04/02/2026 04:59pm	06:27	05:18	01:09	Details
10	03/02/2026 09:18am	03/02/2026 06:33pm	09:13	07:48	01:25	Details

Figure 8.12: Work Sessions page of Tracker Application with fixed timing issues

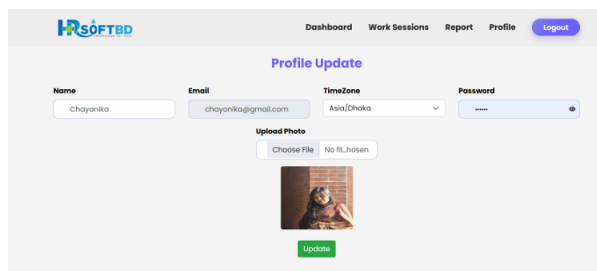


Figure 8.13: Profile Update page of Tracker Application with image-only photo upload

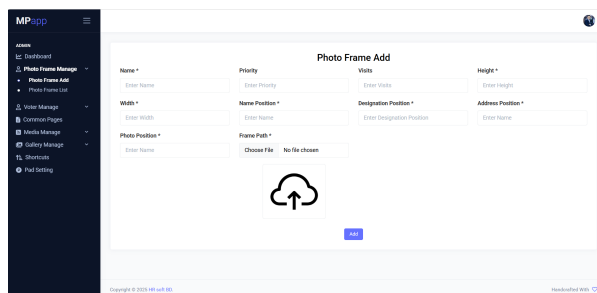


Figure 8.14: Photo Frame Add page at Dr.Jahid's portal

Assigned Project- Gadget Shop

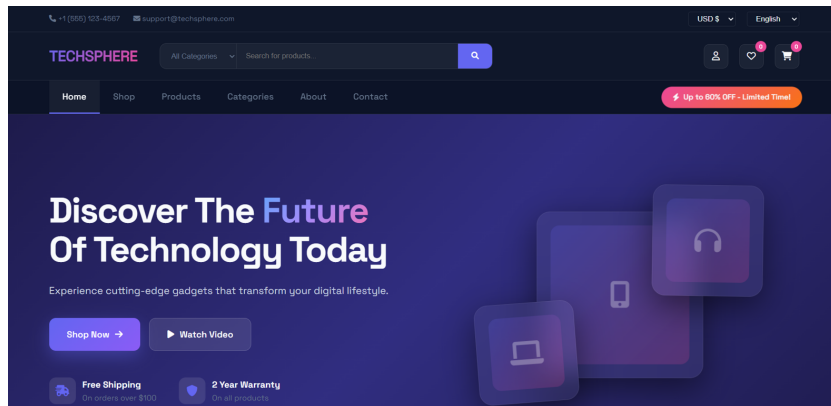


Figure 8.15: Home Page

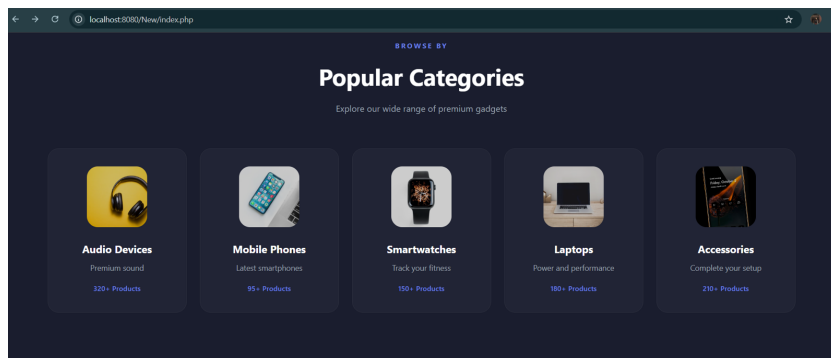


Figure 8.16: Product Category Page

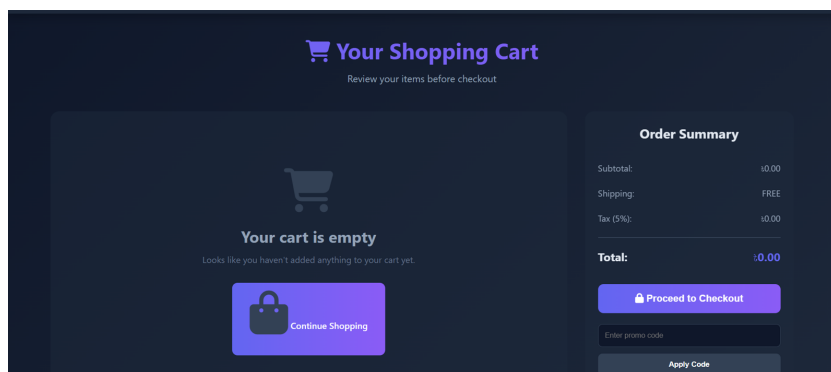


Figure 8.17: Cart Page

Offer Letter:



Figure 8.18: Offer Letter

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