LEADING UNIVERSITY

Department Of computer Science and Engineering

DigitalSpark CRM

Course Code : CSE-4801

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Approval

The project **“DigitalSpark CRM”** submitted by Chinmoy Datta Priom, Saurov Karmokar and Shahariar Masud Manna respectively to the department of Computer Science and Engineering, Leading University,Has been accepted as satisfactory in fulfillment for the requirement of project-II.

Approved By:

Syeda Tamanna Alam Monisha

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Certificate of Acceptance of the Project

The project entitled "DigitalSpark CRM" submitted by the students

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on 4th march, 2024

Is,hereby, accepted as the fulfillment of the requirements for the award of their Bachelor Degrees.

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Grateful for the chance from the Almighty, we completed our first Web Development project with thanks to our parents for their support. Special appreciation to our dedicated teachers for overcoming initial challenges, and heartfelt gratitude to our supervisor, Syeda Tamanna Alam Monisha, for her excellent guidance. Lastly, thanks to friends and supporters for their ongoing guidance and understanding.

ABSTRACT

The "DigitalSpark CRM" project is a comprehensive web-based platform designed to streamline and enhance the communication and project management processes within an organization. The system features a user-friendly index page with distinct panels for Admin, Manager, Client, and Developer roles, each serving specific functions in the project life cycle. The Admin panel holds overarching control, overseeing all aspects of the platform. Managers are responsible for coordinating developers and managing projects, acting as intermediaries between clients and the development team. Clients initiate project requests through the Admin panel, and Admin assigns Managers and Developers based on project requirements. Crucially, there is a strict communication hierarchy. Only Admin can communicate with clients, ensuring a centralized and controlled interaction. After project completion, Developers submit their work to Managers, who then forward it to Admin for final review and delivery to the client. Access to the platform is restricted, requiring login credentials for all four panels. Clients and Developers must first register before logging in. Real-time chat functionality facilitates seamless communication within the platform, promoting efficient collaboration and project progression. The DigitalSpark CRM project is poised to revolutionize project management by optimizing communication channels, ensuring accountability, and providing a user-friendly interface for all stakeholders involved. Furthermore, the platform's robust security measures guarantee the confidentiality of sensitive project information. Role-based access controls ensure that each user has appropriate permissions, maintaining data integrity and preventing unauthorized access.

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CHAPTER 1

Introduction

1.1 **Background**

The Digital Spark CRM project emerged from the necessity to streamline communication and collaboration within our web-based company, Digital Spark CRM. In response to the challenges of managing client relationships, project development, and team coordination, we envisioned a comprehensive web platform. This platform aims to enhance efficiency by establishing clear lines of communication among clients, administrators, project managers, and developers.

Digital Spark CRM serves as a centralized hub for client-admin interactions, enabling seamless communication between project managers and developers. Admins oversee the entire process, assigning dedicated project managers to facilitate effective collaboration and ensure project success. The platform's architecture is designed to optimize task allocation, project tracking, and progress reporting.

By creating this CRM solution, we aim to enhance project management, foster effective communication, and elevate client satisfaction. The project reflects our commitment to innovation and efficiency, addressing the dynamic needs of our web-based company while providing a user-friendly interface for all stakeholders involved in the project life cycle.

1.2 **Motivation**

Our motivation was to make a website for our company, creating a unified platform where our company's activities, client communications, and project management could seamlessly unfold in the digital space. In an era dominated by digital advancements, we recognized the importance of consolidating our operations into a singular online hub. The impetus behind this initiative was the realization that our days are inherently digital, and it was our aspiration to align our company's operations with the contemporary landscape. In doing so, we aimed to transcend the limitations of physical platforms and embrace the limitless possibilities offered by the digital realm. This strategic move not only aimed to enhance internal efficiency but also sought to provide our clients, project managers, and developers with a user-friendly interface for more effective communication. By leveraging the power of the web, we sought to revolutionize the way we conduct business, emphasizing agility, accessibility, and responsiveness. This motivation reflects our commitment to staying at the forefront of technological innovation while catering to the evolving needs of our clients.

1.3 Project Objectives

Our project, Digital Spark CRM, aims to revolutionize the way we conduct business in a digital age. Serving as a comprehensive platform for our web-based company, it facilitates seamless client interactions, effective project management, and streamlined communication.

- **Enhanced Communication:** Improve communication flow between clients, administrators, project managers, and developers for efficient collaboration.
- **Efficient Project Management:** Streamline project management by optimizing task allocation, progress tracking, and reporting for timely completion.
- **Client-Centrist Interaction:** Provide a user-friendly interface for clients, ensuring effective communication, feedback mechanisms, and efficient client relationship management.
- **Task Optimization:** Enhance task allocation to developers based on expertise and workload, with real-time tracking for transparency and accountability.
- **User-Friendly Interface:** Design an intuitive platform for all stakeholders, promoting ease of use and adoption to boost overall efficiency and productivity in our digital workspace.
- **Centralized Hub:** Create a central online space where everyone involved, like clients, managers, and developers, can easily access and share information.

- **Boost Efficiency:** Make company processes simpler and more efficient in the digital world.
- **Happy Clients:** Keep clients satisfied with clear communication and project updates.
- Project Success: Ensure projects succeed by managing them effectively and tracking progress.
- Go Digital: Embrace modern trends with an easy-to-use online interface for a smooth transition

The scope of the Digital Spark CRM project is to create a user-friendly platform that consolidates company activities, facilitates smooth communication with clients, and simplifies project management. It aims to save time by providing a centralized hub for information, making project handling more efficient and fostering collaborative efforts among team members. The project's scope extends to ensuring a seamless and productive workflow within our web-based company, addressing the dynamic challenges of our industry.

CHAPTER 2

Background Study

Nowadays an online platform for any company is important. It becomes necessary when the company is based on web related work. So, to fulfill this necessity we started to build a web application where we can handle everything through a single platform. In this web application we have four types of accessing modes. These are Admins, Developers, Managers & Clients.

Admins are the heads of the system, their job is to communicate with the clients, book the project, appoint suitable managers as per the requirements of clients.

Managers are responsible for appointing suitable developers for a project and looking after the whole project from start to end.

Developers job is to work on project as per the direction of managers.

Clients get access to select their desired project, talk with admin and pay as requirements.

It was our aim to develop such site to handle all the end through a single platform and we end up by building this web application.

2.1 Related Works

Living in the digital age has significantly eased the management of company systems, thanks to the advanced internet infrastructure. Our platform embraces this era by providing a secure and transparent system, making project progress visible to those responsible. This not only enhances security but also saves valuable time for everyone involved.

Our aim is to simplify the client experience, allowing them to effortlessly share their thoughts and requirements. The payment process is designed to be straightforward, ensuring a hassle-free transaction. Ultimately, our focus is on client satisfaction, aiming to meet their needs seamlessly.

In addition to providing an efficient client experience, our platform also creates an environment that fosters developer excellence. Developers can showcase their skills and work in a relaxed yet productive setting. By combining user-friendly features and a conducive work atmosphere, our project seeks to bring about a holistic and fulfilling experience for both clients and developers alike.

2.2 Review Of Previous System

In the previous days the company relied on more paperwork. It was a desk-to-desk system. Nowadays it has changed, work is visible, and reports are being eyed online. It becomes a time saver. And it makes decision taking on project faster than before as the progress of the project is seen to all who are responsible. We could not ensure the safety of paper and documents in our previous system. And handling a lot of papers was not that easy compared to the recent system. Besides, finding the right document at the right time was a blessing to the previous system. But recently as everything is computerized, it becomes easy. Now clients can share their thoughts to admin easily. Developers can contact managers without finding any difficulties. These things took days in the previous system. now it can be done withing a second. As well as no money is spent through the recent system.

CHAPTER 3

Methodology

The methodology employed in the implementation and execution of the "DigitalSpark CRM" project involves a systematic and phased approach to ensure efficient development and successful deployment. The key steps include:

Admin Panel : He handles managers, clients, and developers. Additionally, an admin can approve a project request from the client side and assign a particular manager and three developers. The admin can also suspend or permanently ban a developer or client from this website

Manager Panel : The main work of a manager is to handle project status and guide his developers, providing instructions on how to work and fulfill the project requirements. Finally, he hands over the project files to the admin.

Developer Panel : The developer's work involves following the instructions of the project manager and fulfilling the project requirements. Finally, the developer hands over the project files to the manager.

Client Panel : This website is designed for clients. Here, clients can view our projects and place orders for specific projects according to their needs. They can communicate with the admin regarding the project or directly place an order by sending an approval request through the admin panel. Once the request is approved, the client can proceed to pay for the project using the CRM wallet.

Requirement Analysis: Conduct a thorough analysis of the project requirements, identifying the specific needs and functionalities for each user panel (Admin, Manager, Client, and Developer).
Define the scope of the project, outlining features such as project assignment, communication protocols, user registration, and real-time chat.

System Design: Develop a detailed system architecture, encompassing the user-friendly index page with distinct panels for each role.

Define the roles and responsibilities of Admin, Manager, Client, and Developer, specifying their interactions and limitations.
Design the real-time chat feature to facilitate seamless communication within the platform.

User Authentication and Registration: Implement a secure user authentication system requiring login credentials for all four panels.
Develop a user registration process, ensuring that Clients and Developers register before gaining access to the platform.

Communication Hierarchy: Establish a strict communication hierarchy where only the Admin has the authority to communicate with clients.
Implement communication channels that allow Admin to assign Managers and Developers based on project requirements.

Project Management Workflow: Define the workflow for project management, specifying how clients initiate requests, how projects are assigned to Managers and Developers, and the process for project completion.
Incorporate a systematic review process where Developers submit completed work to Managers, Managers forward it to Admin, and Admin delivers the final project to the client.

Real-time Chat Implementation: Integrate a real-time chat functionality, enabling seamless communication within the platform for efficient collaboration.

Payment System Integration: Implement a secure payment system using the personalized wallet, "CRM Wallet," for streamlined and convenient financial transactions within the platform.

Testing and Quality Assurance: Conduct rigorous testing at each development stage to identify and rectify bugs, ensuring a robust and error-free system.
Perform user acceptance testing to validate the functionality and user experience.

3.1 Requirements and Technologies Used

System Requirement

Hardware Requirement

- **Processor :** Intel corei3 or Higher
- **RAM :** 500 MB or Higher
- **Hard Disc Space :** 500 MB or Higher

Software Requirement

- This software is platform independent
- **Web Browser :** Microsoft Internet Explorer, Mozilla, Google
- Chrome or later
- **Operating System :** Windows7 or late, Mac, Linux.

Functional Requirement

To develop our project, we need some specialized compiler to support our required object-oriented language. For the site, we used the following kinds of languages, tools, methods and software's.

- HTML
- CSS
- Bootstrap
- JavaScript
- SQL
- PHP

CHAPTER 5

Structural Design

Use Case Diagram

A use case diagram is a type of Unified Modeling Language (UML) diagram that represents a system's functionality and the ways users (or external systems) interact with that system. It provides a high-level view of the system's behavior and illustrates the various use cases and actors involved. Use case diagrams are widely used in software development and systems engineering to capture and communicate the functional requirements of a system.

Figure : 5.2 shows Use Case diagram of the developed our web-application.

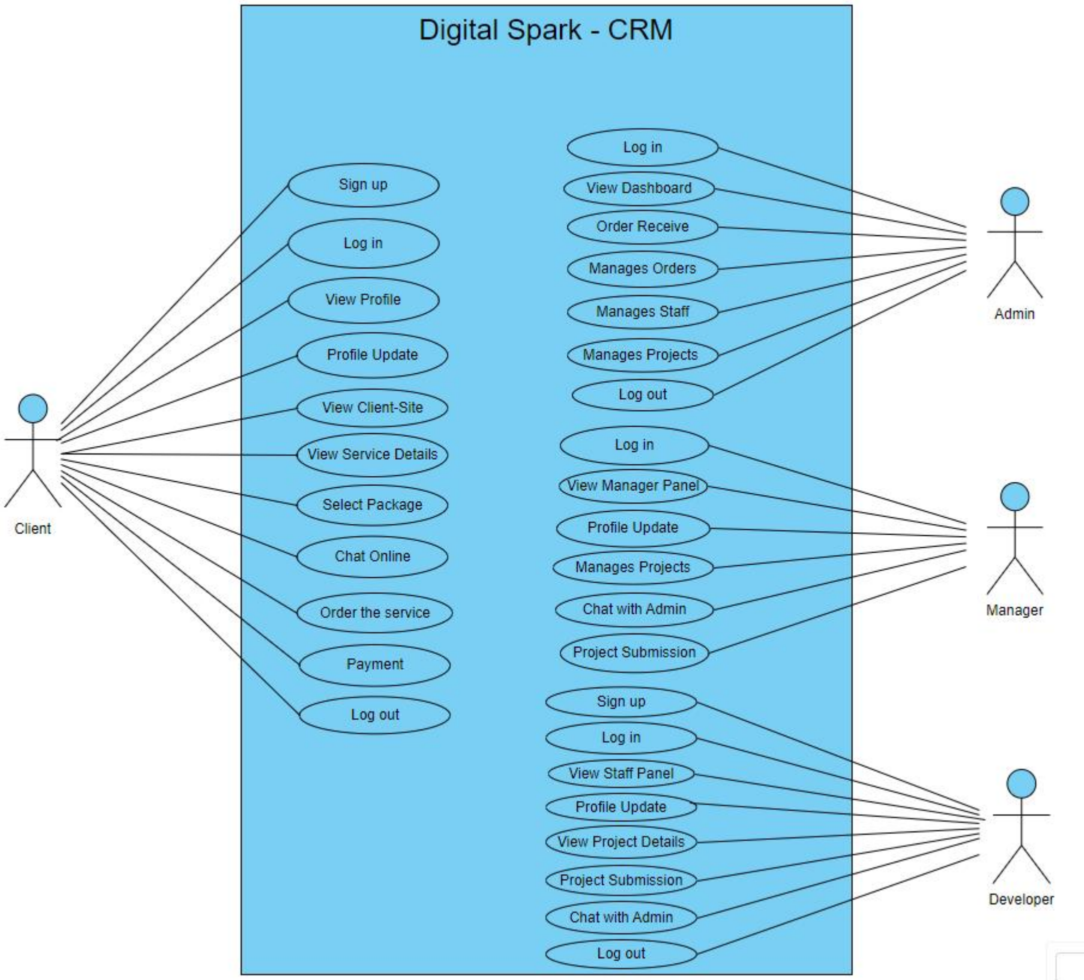

Figure : 5.1 (Use Case Diagram)

ER Diagram

An Entity-Relationship (ER) diagram is a visual representation of the data model that describes the structure of a database. It is a popular tool used by database designers to depict the entities within a system and the relationships between them. The main components of an ER diagram include entities, attributes, and relationships. The following **figure : 5.1 shows ER diagram of the developed our web-application**.

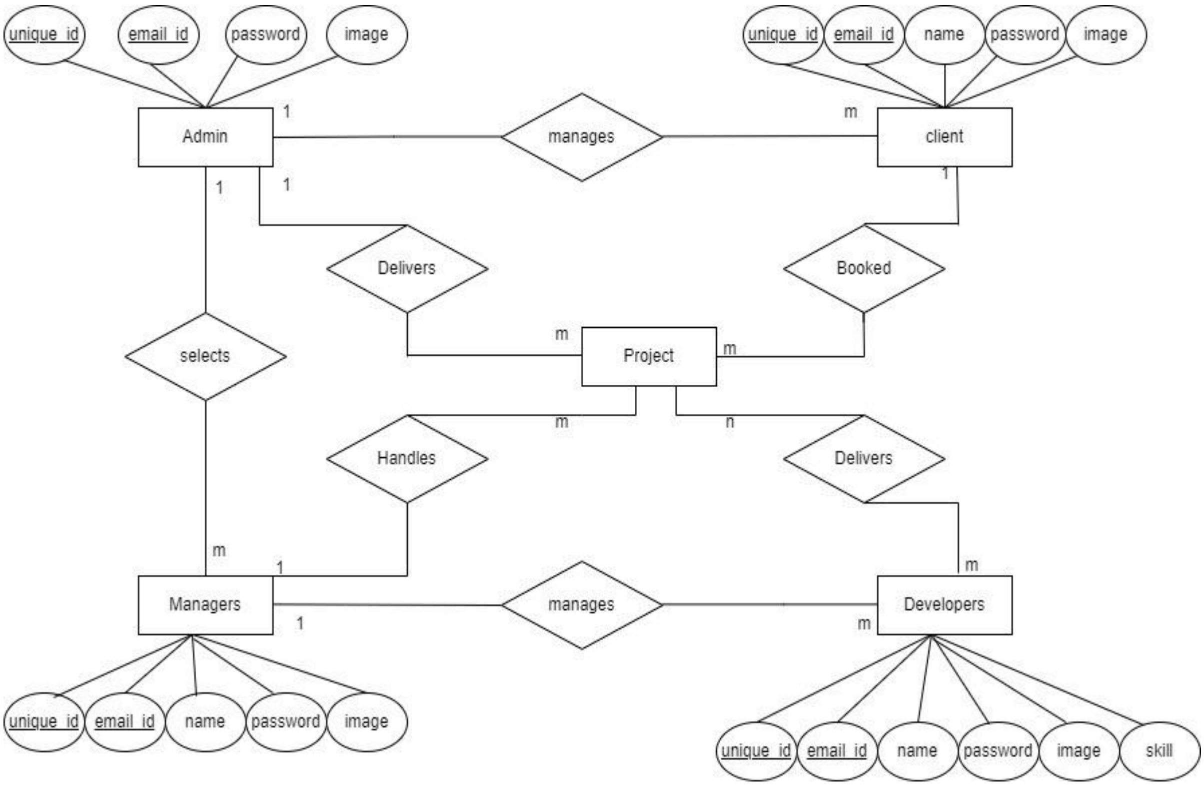

Figure : 5.2 (ER Diagram)

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Data Flow Diagram (DFD)

A Data Flow Diagram (DFD) is a visual representation that depicts the flow of data within a system and how it is processed. It is a powerful tool used in system analysis and design to model the data movement, processing, and storage in a structured manner. DFDs provide a clear and concise way to illustrate the data flow and transformations that occur within a system.

Figure: 5.3.1 and 5.3.2 shows Data Flow Diagram of the developed our website.

Level 0 DFD :

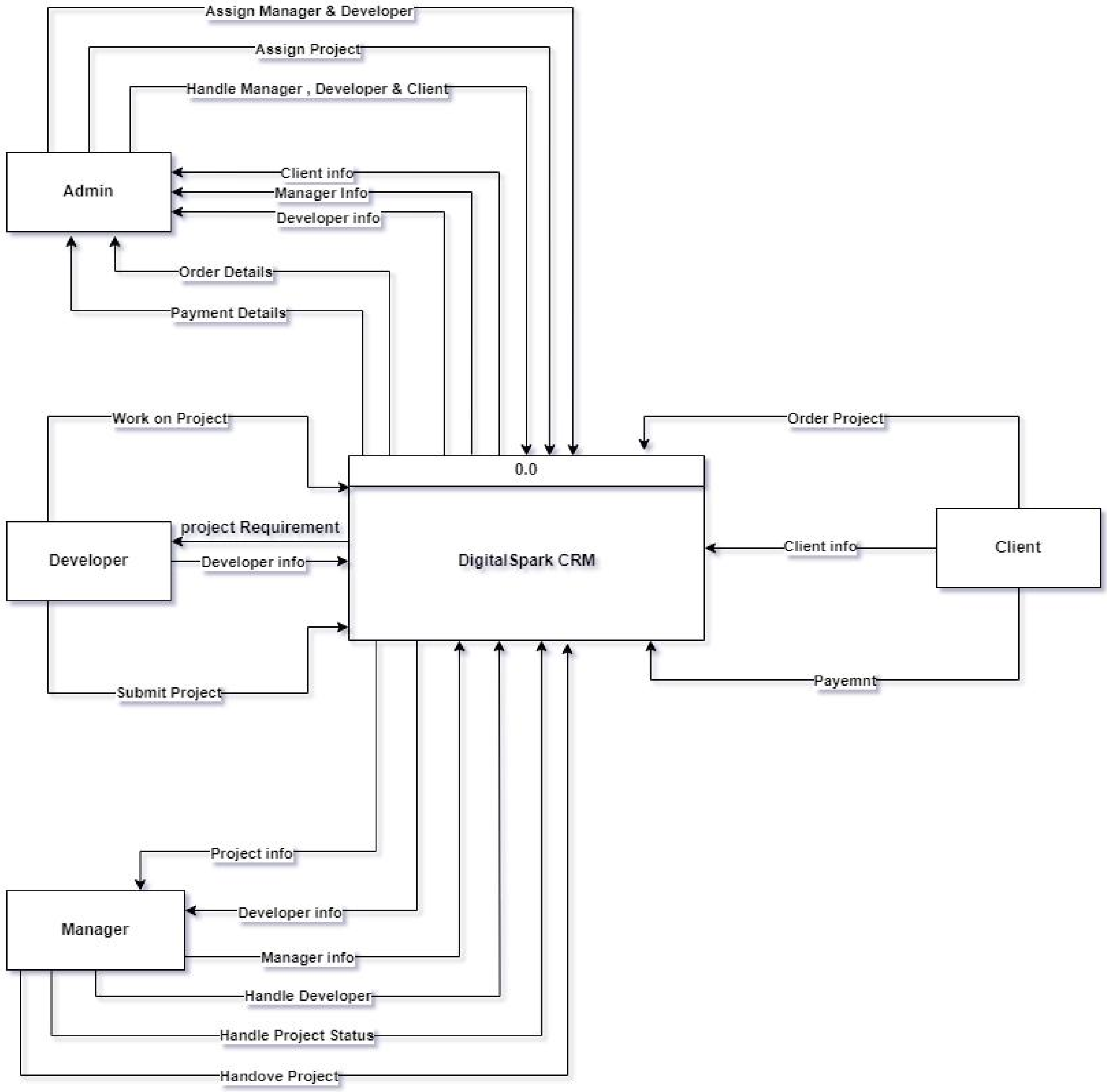


Figure : 5.3 (Level 0 DFD)

Level 1 DFD :

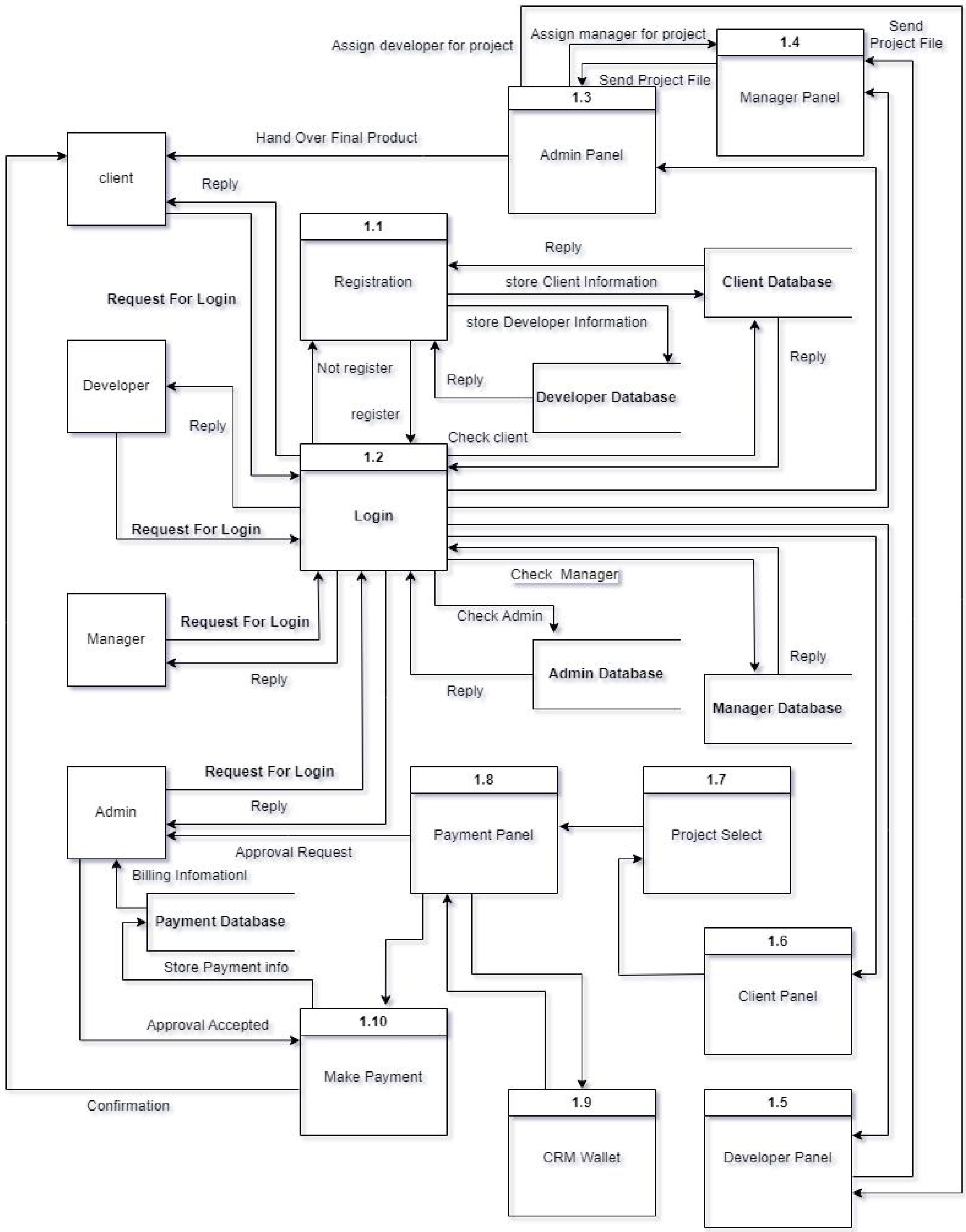


Figure : 5.4 (Level 1 DFD)

CHAPTER 6

Project Outcome

6.1 User Interface

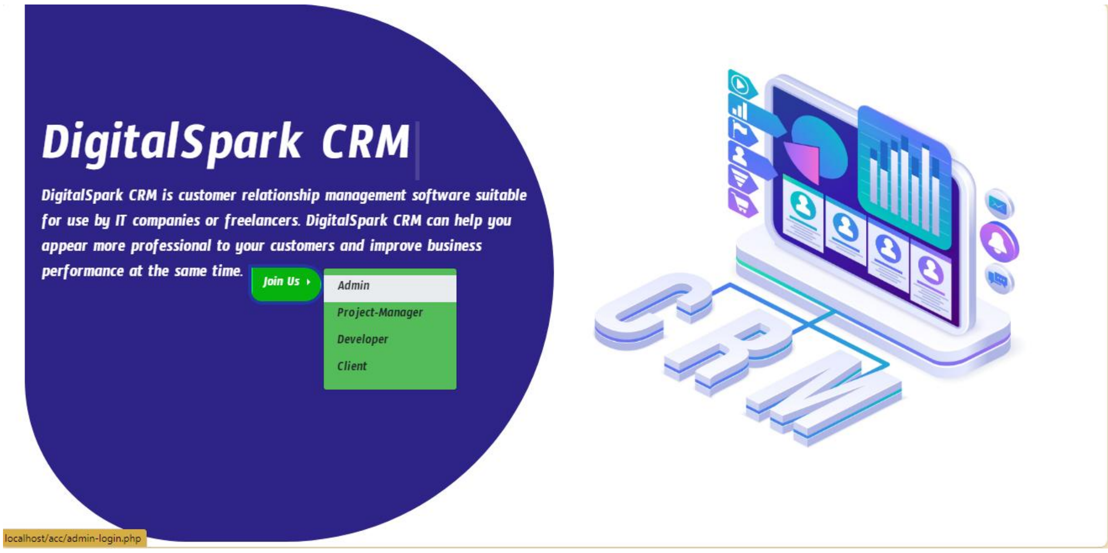


Figure: 6.1.1 (Home-page)

Our index page serves as a gateway to a comprehensive user experience. With four distinct options, users can effortlessly navigate to meet their specific requirements. The "Admin & Project Manager" choices are strategically placed for seamless access to the admin panel, where admins and managers can securely log in using company-provided passwords.

For newcomers, be it developers or clients, the registration process is a crucial step. It involves mandatory registration, incorporating an additional layer of security through OTP verification. This stringent verification ensures the integrity and safety of the user experience. Once successfully registered, clients gain access to explore our diverse projects and initiate orders, while developers seamlessly integrate into the project workflow, adhering to instructions and contributing to the successful fulfillment of project requirements.

Our website is designed to cater to the unique needs of both clients and developers, ensuring a smooth and secure journey from registration to project completion.

6.2 Admin Panel

After logging in, you will be directed to the admin panel's dashboard. This section provides a concise overview of clients, developers, and projects details. It serves as a central hub for administrators and manage various aspects of the website efficiently.

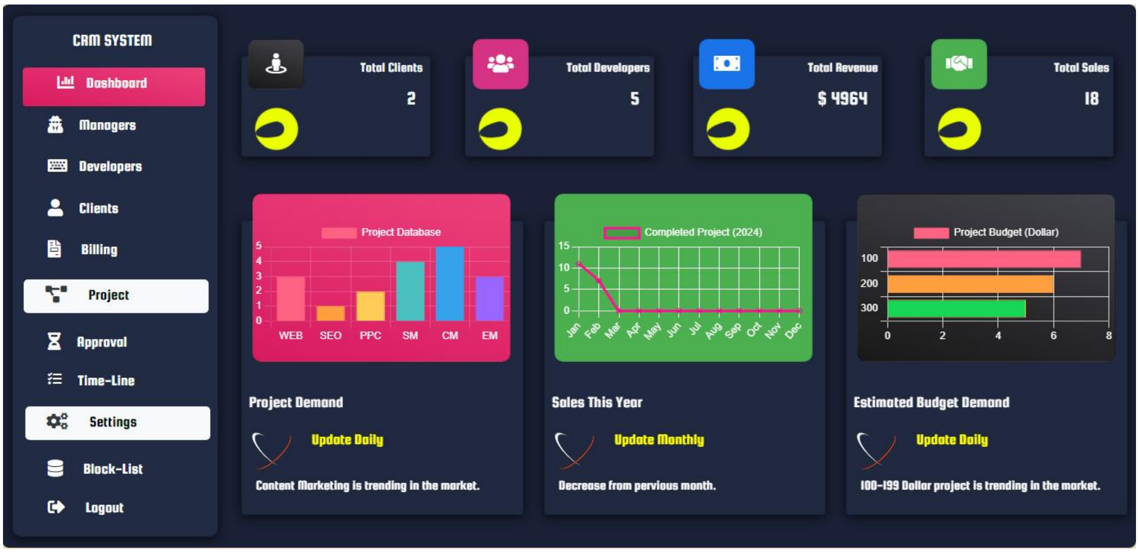


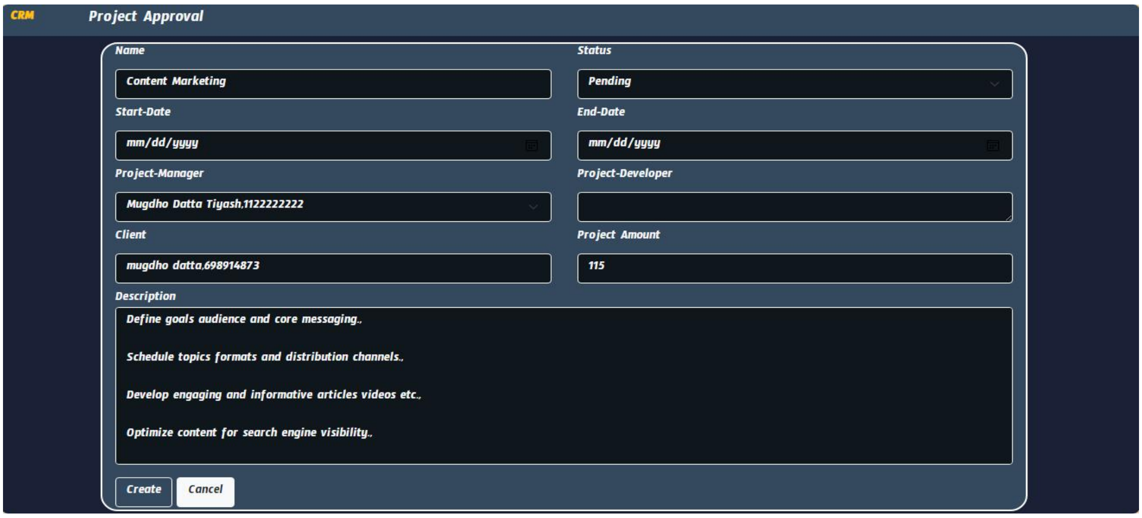
Figure : 6.2.1 (Admin Dashboard)

Project Approval Table:

When a client want to buy a project he send a approval request from client panel .

Approval List Table

In our system, administrators assign a project manager and three developers to each project. After accepting the approval request, clients can proceed with the payment for the project. Once payment is confirmed, developers initiate work on the assigned project.

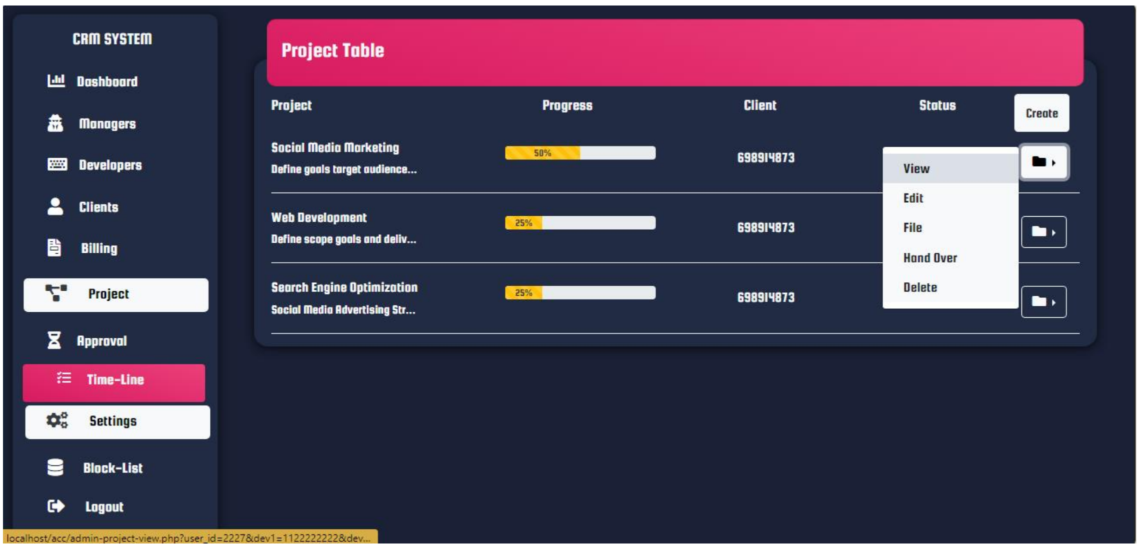


Approval Project (Assigning Manager & Developers)

Figure : 6.2.2 (Approval Table)

Project Table:

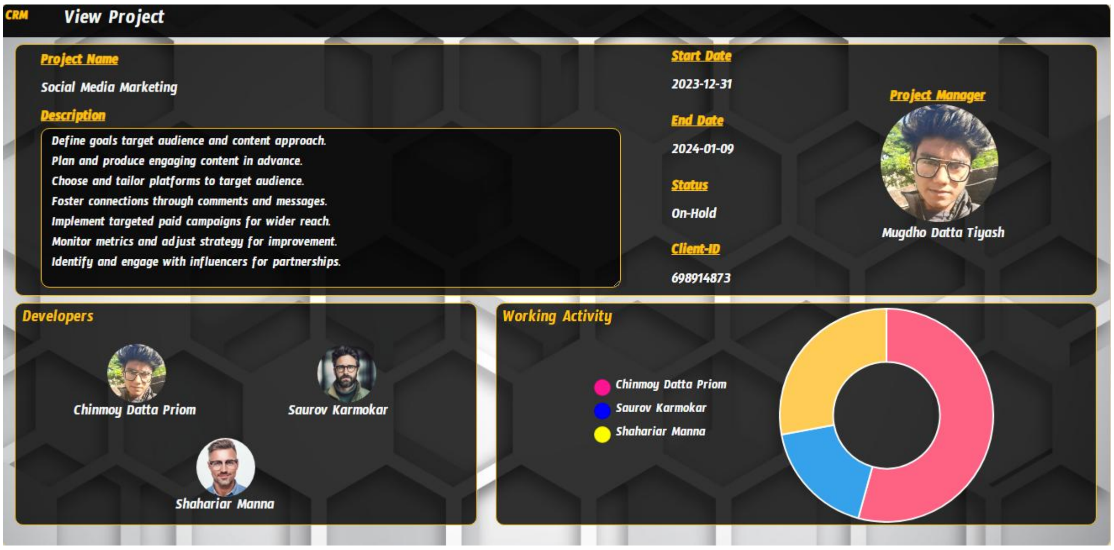
From here we control all project functionality. Here we can create a project, view the project details, can edit price and change the developer of an project by edit option, we can delete a project.Here we can send the project file to client by hand-over and Also can receive the project file from manager panel by file.



Project Table

View Project:

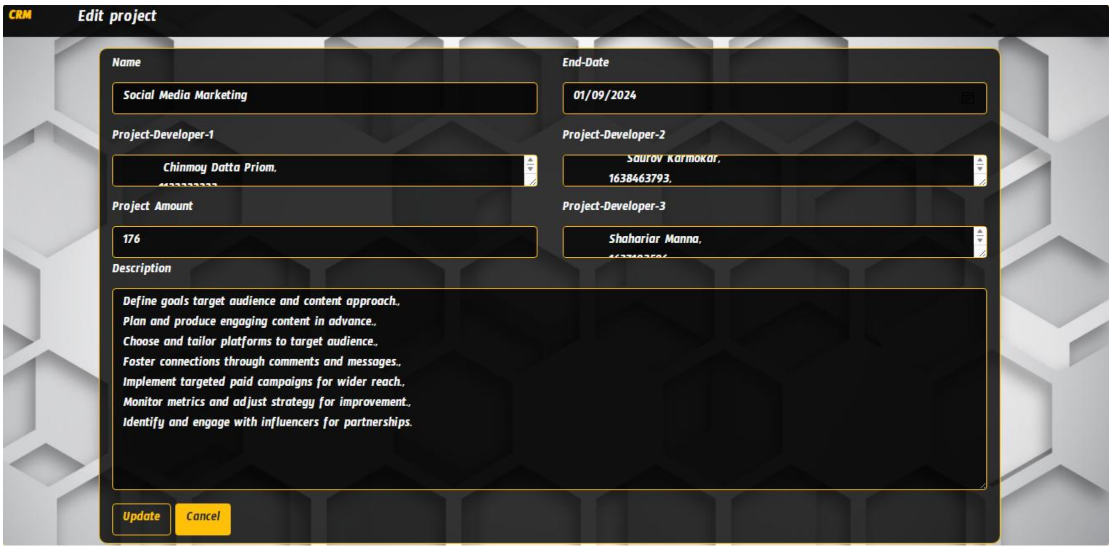
Here admin can see the project details and by clicking name and id admin can able to communicate with managers, developers and clients.



View Project

Edit Project:

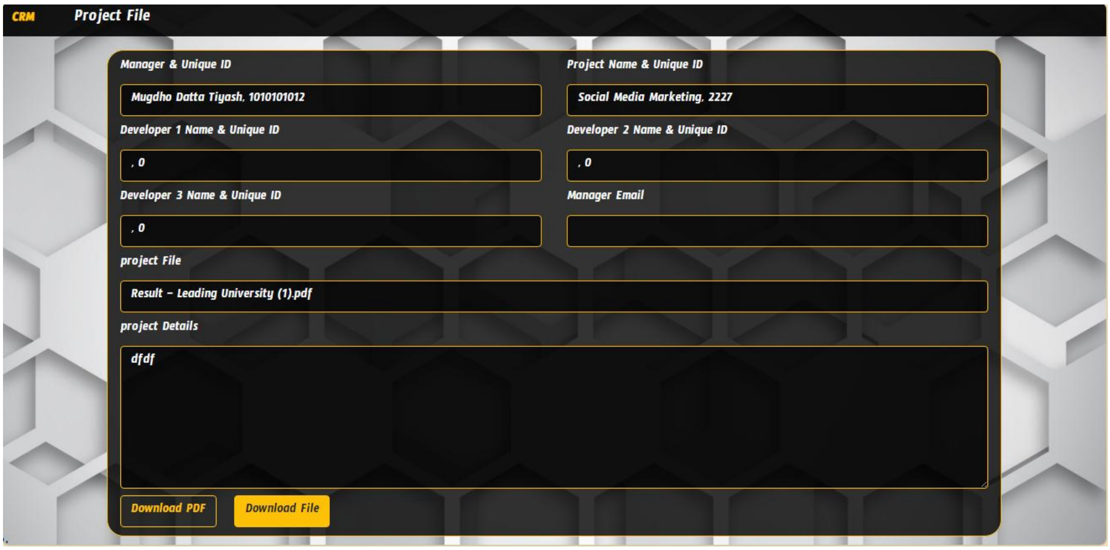
Here admin can edit developers, can change the project requirements and price.



Edit Project

Project File:

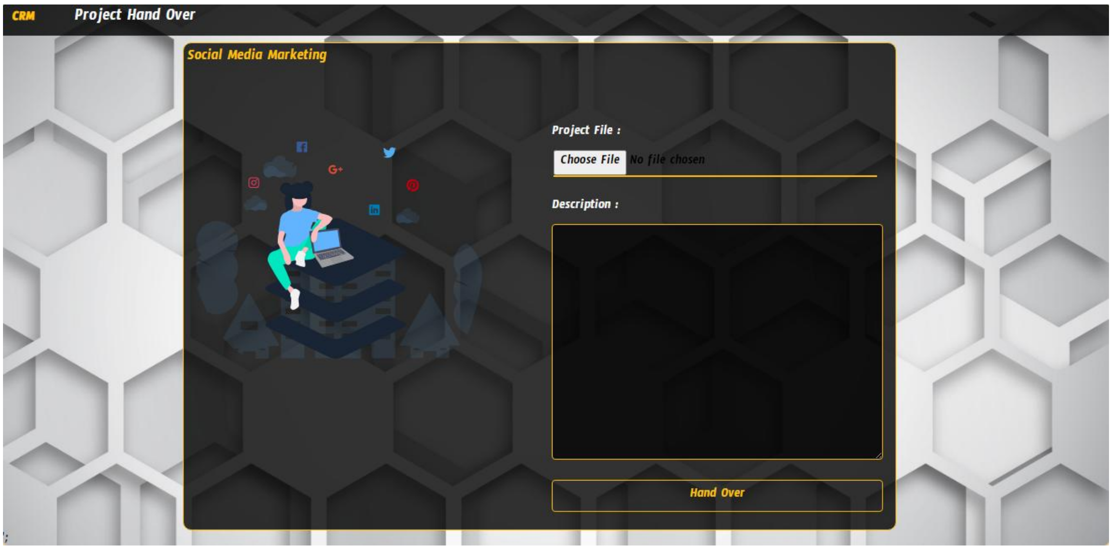
When project manager submit the project file, here admin can download this file for further work. Here admin can download the file and also can download a PDF where all details will include about this submission.



Project File

Project Hand-Over:

After download the final project file the admin hand-over this file to client and also send a email.



Project Hand-Over

Figure : 6.2.3 (Project Table)

6.3 Manager Panel

Manager Dashboard : Here, the manager can track how many developers he is handling and the number of projects that are currently in progress, along with the respective project statuses.

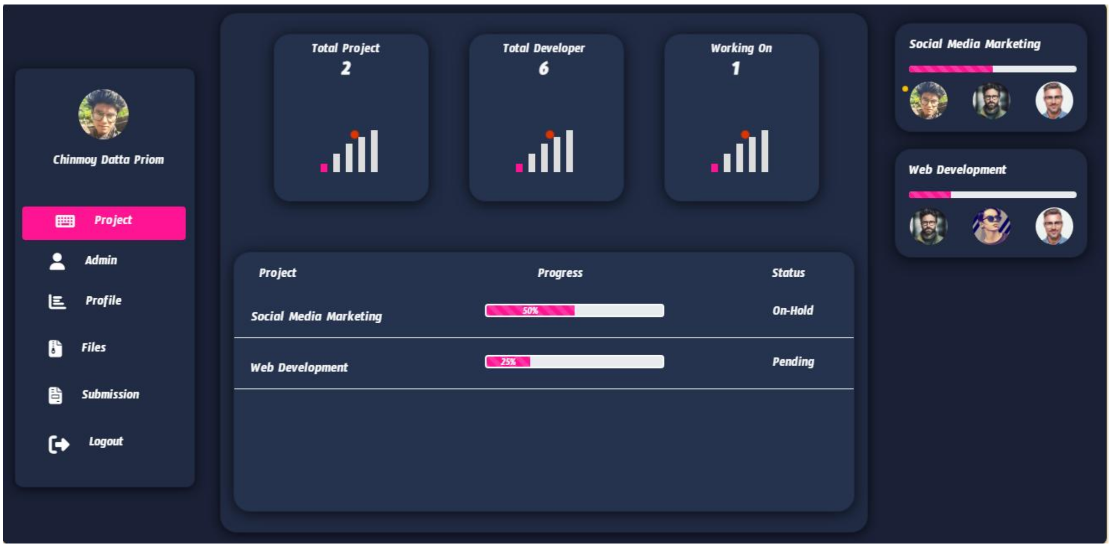


Figure : 6.3.1 (Manager Dashboard)

The manager can access project details, assign project status, and monitor the working activities of developers. By clicking on the image on the right side, the manager can communicate with the developer, while the left sidebar enables communication with the admin via chat. The chat functionality remains consistent across all panels.

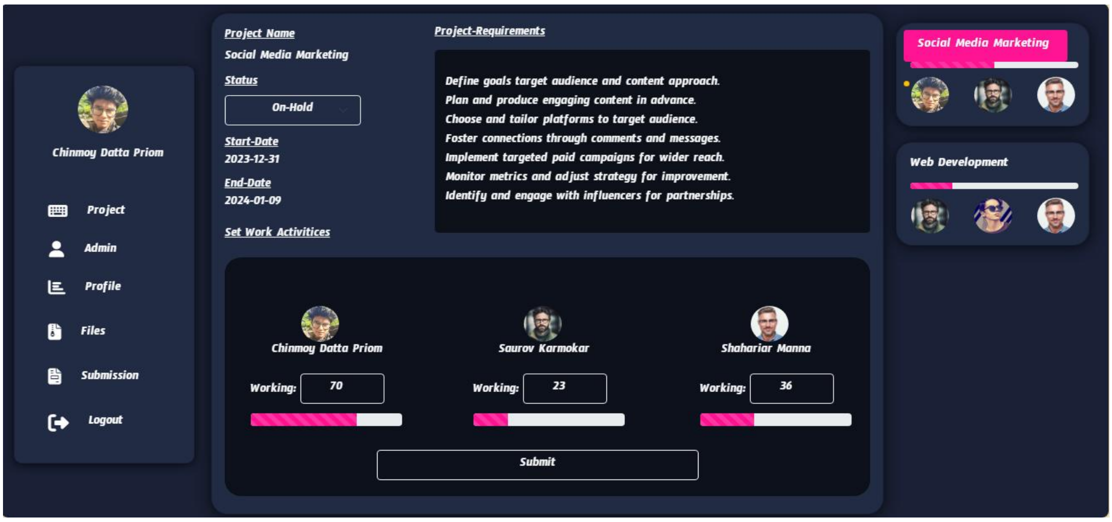


Figure : 6.3.2 (Manager Project Details)

Files :

This is the list of developer who are working on project and after complete their work the submit the project file from developer panel and the manager just simple download the project by clicking download.

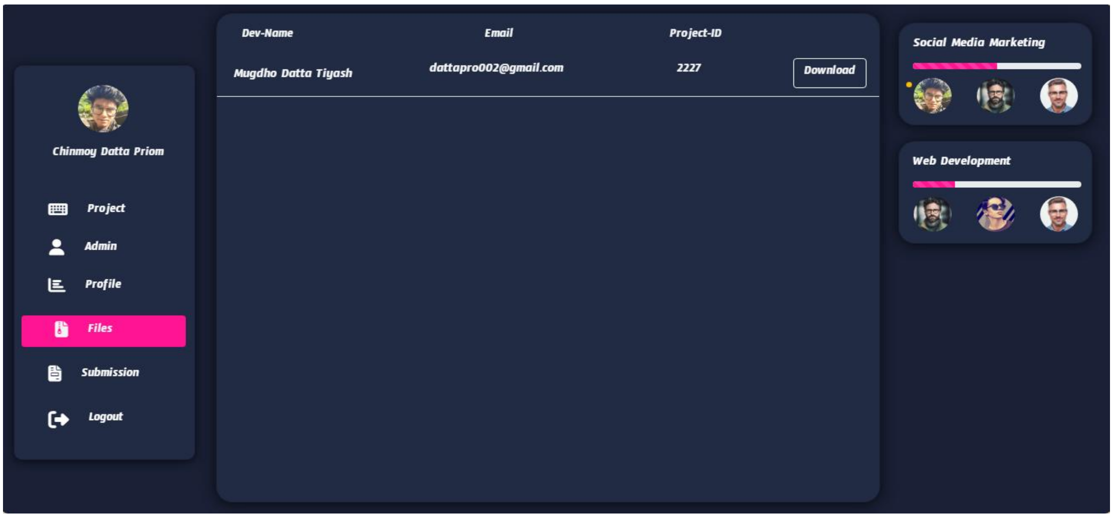


Figure : 6.3.3 (project File Download From Developer)

Submission:

After getting the file from developer the manager check the file and send it to the admin panel.

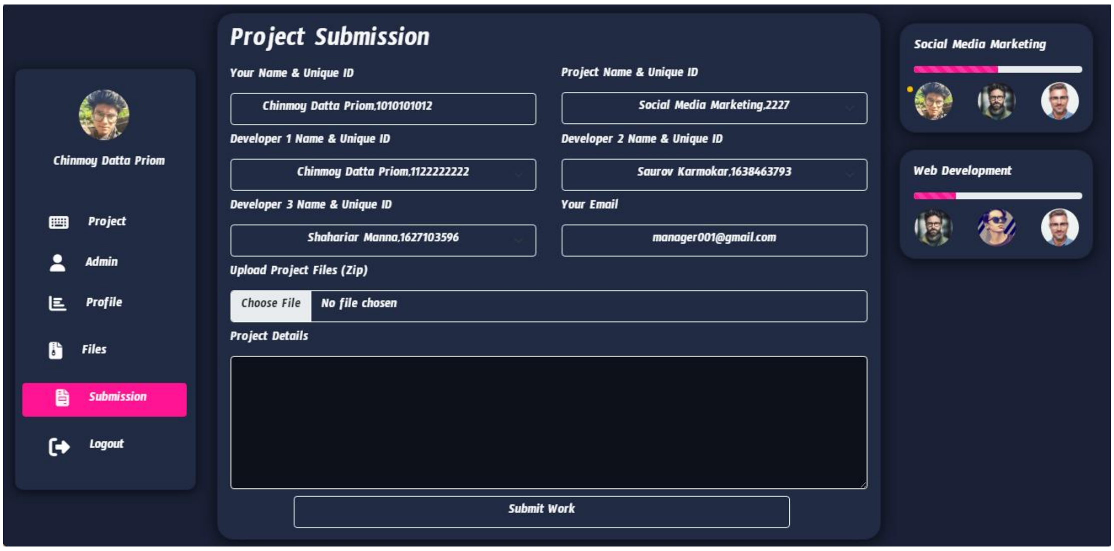


Figure : 6.3.4 (Project File Submit to Admin)

6.4 Developer Panel

Developer Dashboard : Here, developers are able to see the projects to which they are assigned, along with information about their project managers and the current project status. By clicking the manager's name, developers can communicate with the manager via chat. Additionally, developers can also initiate communication with the admin panel from the navigation bar.

Figure: 6.4.1 (Developer Dashboard)

Submission:

After completing the project work, the developer sends the file to the manager panel along with details and information about their work.

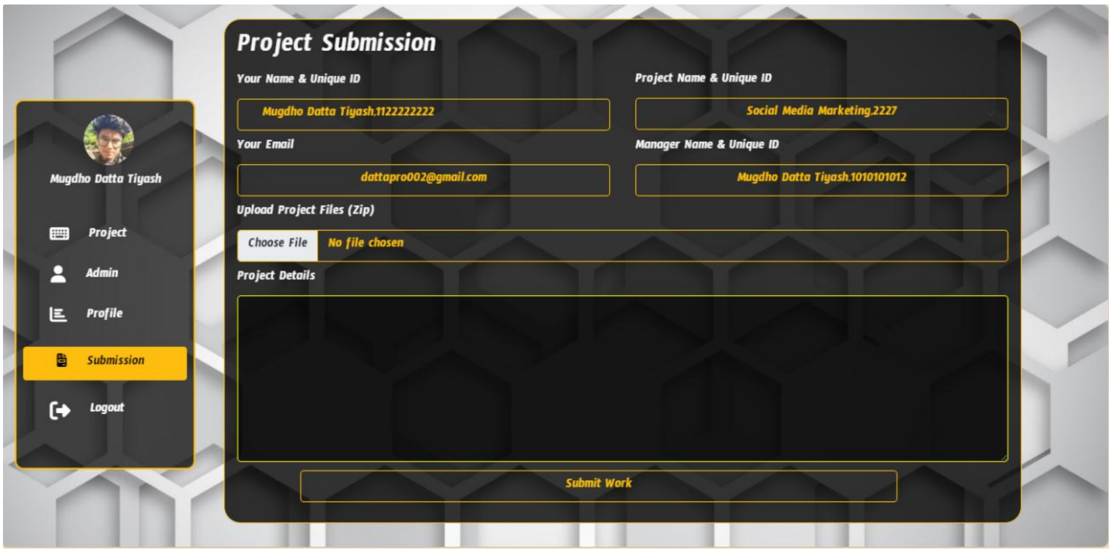


Figure: 6.4.2 (Project Submission)

6.5 Client Panel

This is our client home page featuring a brief introduction about our project. By clicking on the profile image, the client can edit their profile, view their orders, and log out..

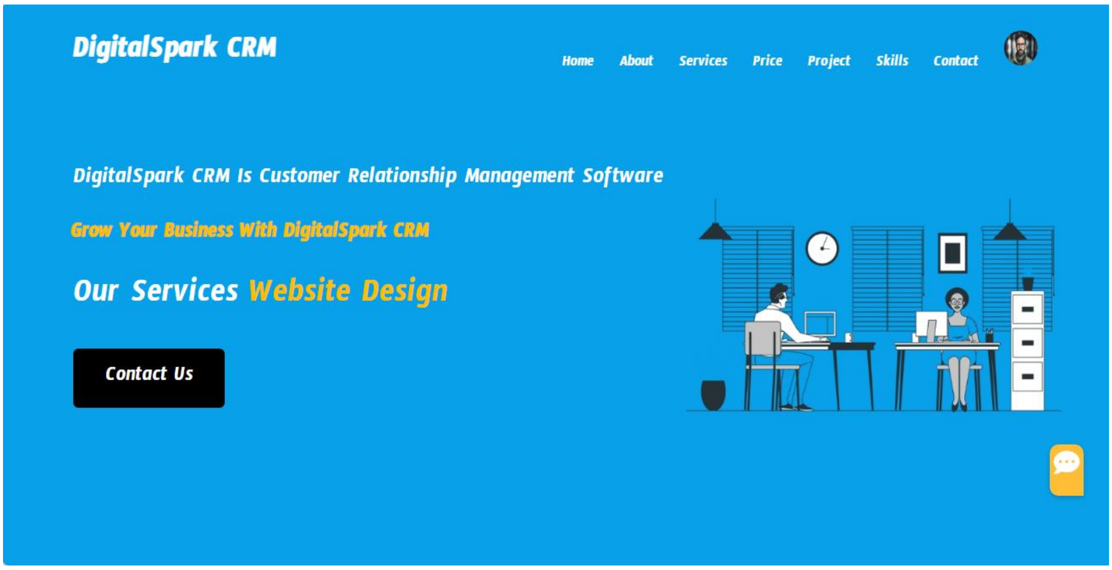


Figure : 6.5.1(Client Home Page)

Here, featuring brief instructions to help clients understand the range of services we offer.

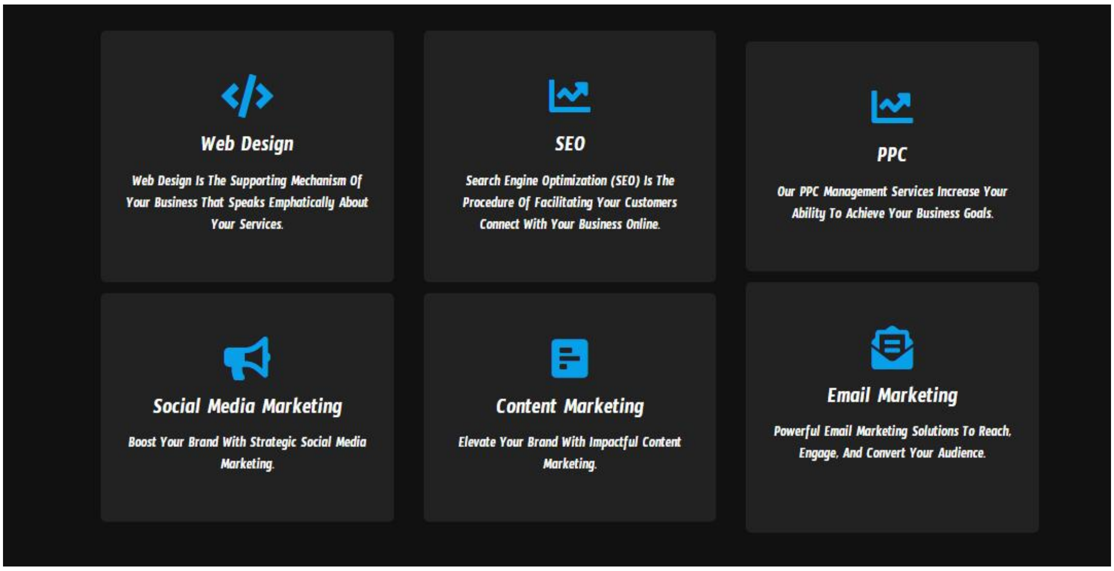


Figure : 6.5.2 (Services)

Additionally, our pricing model is designed to offer flexibility to clients, allowing them to tailor project costs according to their unique needs. Clients have the freedom to customize both the scope of the project and its corresponding budget, ensuring a personalized and transparent pricing structure.

We believe in providing a transparent and client-centric approach, empowering our users to align our services with their specific project demands. This flexibility not only fosters a more collaborative partnership but also ensures that clients receive a tailored solution that precisely meets their expectations and budgetary considerations. At our core, we are committed to delivering a seamless and customizable experience for every client engaging with our platform.

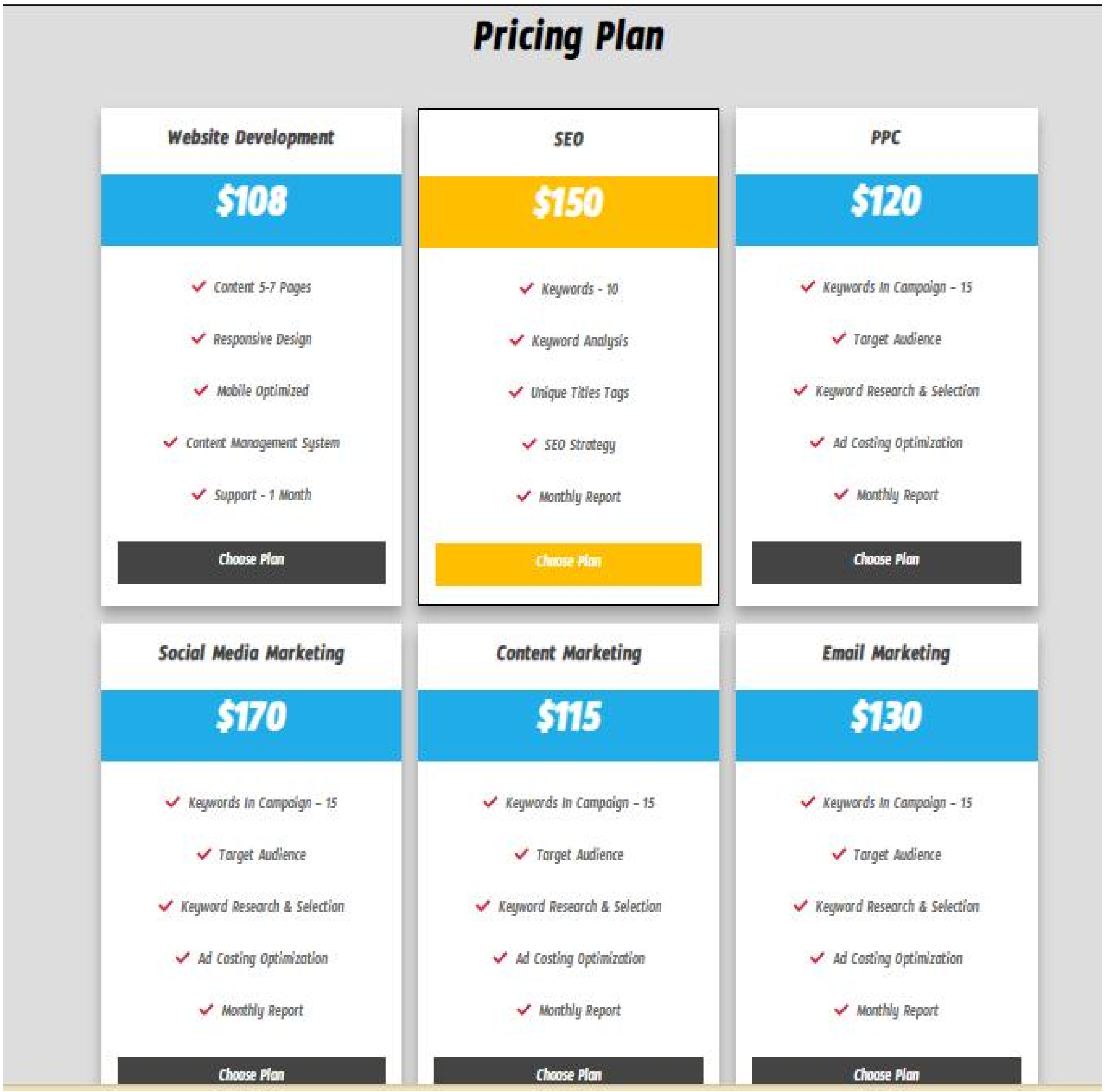
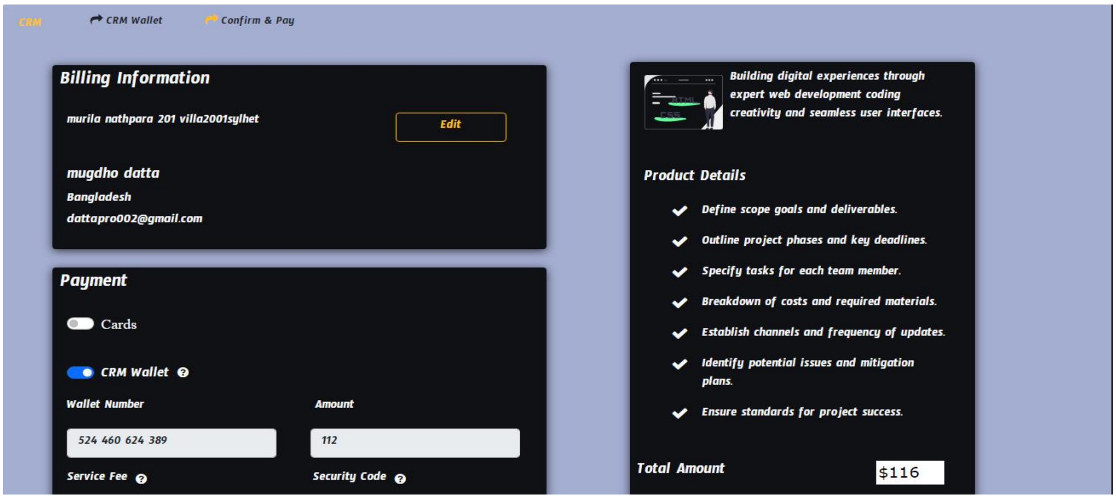


Figure : 6.5.3 (Service Price)

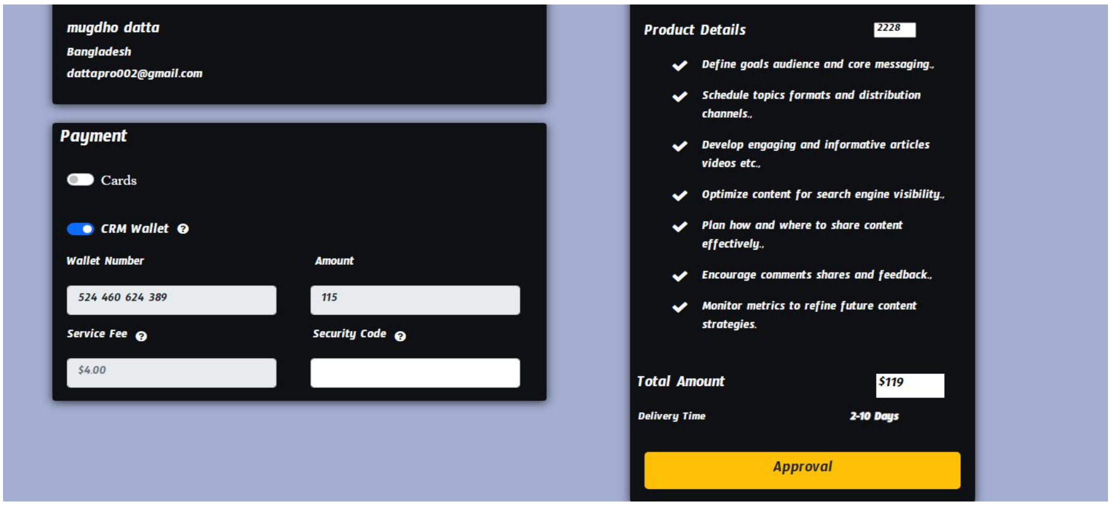
Payment :

For each service, the client can access an interface containing information about related services. From this interface, they can either engage in a chat with the admin panel or proceed directly to the payment section. However, if the client opts to go to payment directly, they are required to send an approval request to the admin panel. Once the request is approved, the client can make the payment; otherwise, the payment option will not be available.



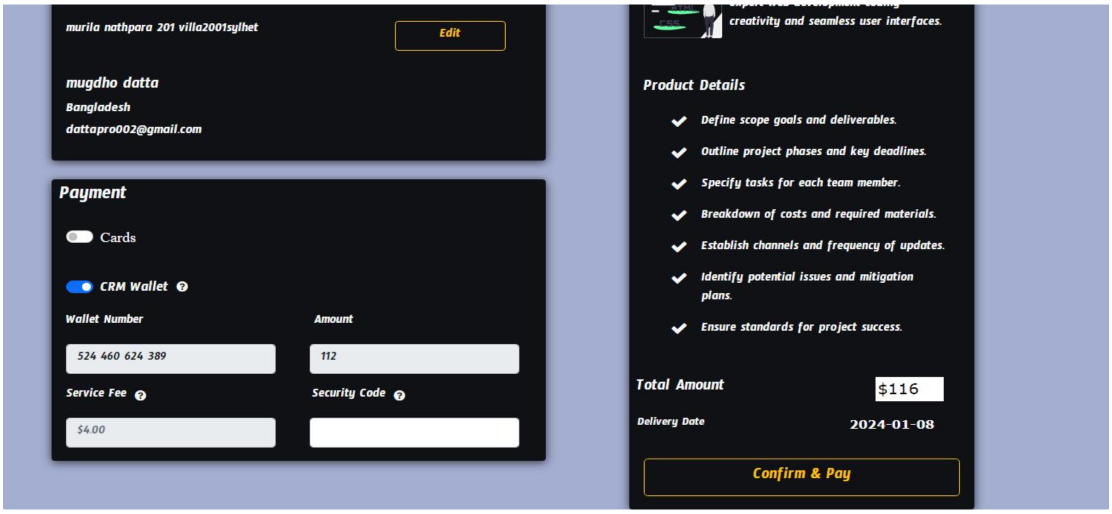
Payment details

Here, clients are required to send an approval request to order a project. This approval request can be submitted when the client wishes to directly order a predefined service with a set requirement and price, without the need to contact the admin for further clarification or discussion.



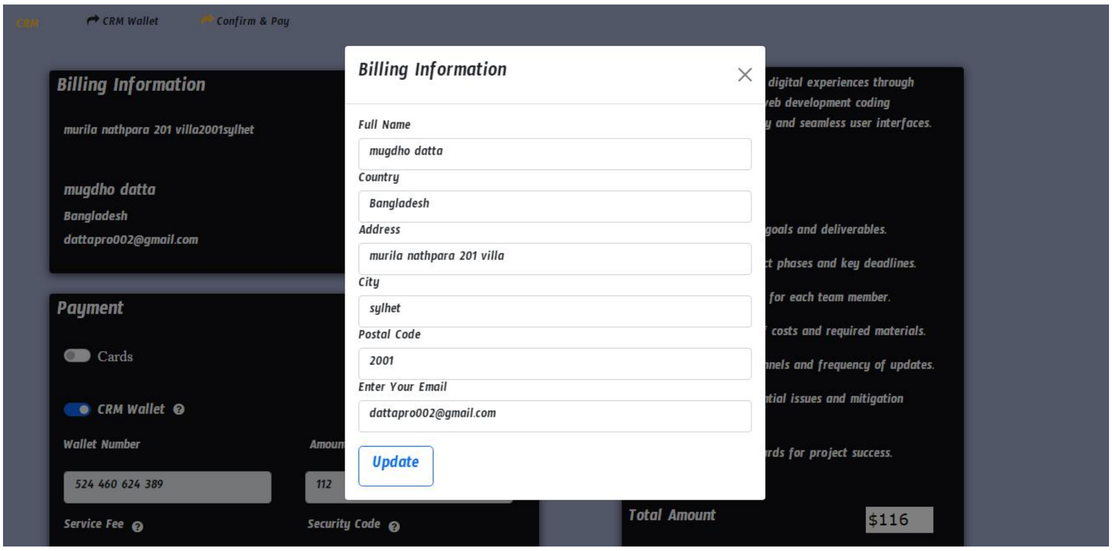
Send approval request

Upon approval of the request from the admin panel, the client can confirm and proceed with the payment for their order. In case the client contacts the admin after sending the approval request, the admin has the authority to modify the requirements and pricing according to the client's preferences. This ensures flexibility and a tailored approach to meet the client's specific needs.



Confirm & make payment

For the initial payment, the client is required to provide their billing information. If desired, the client can modify this information by clicking on the "edit" button.

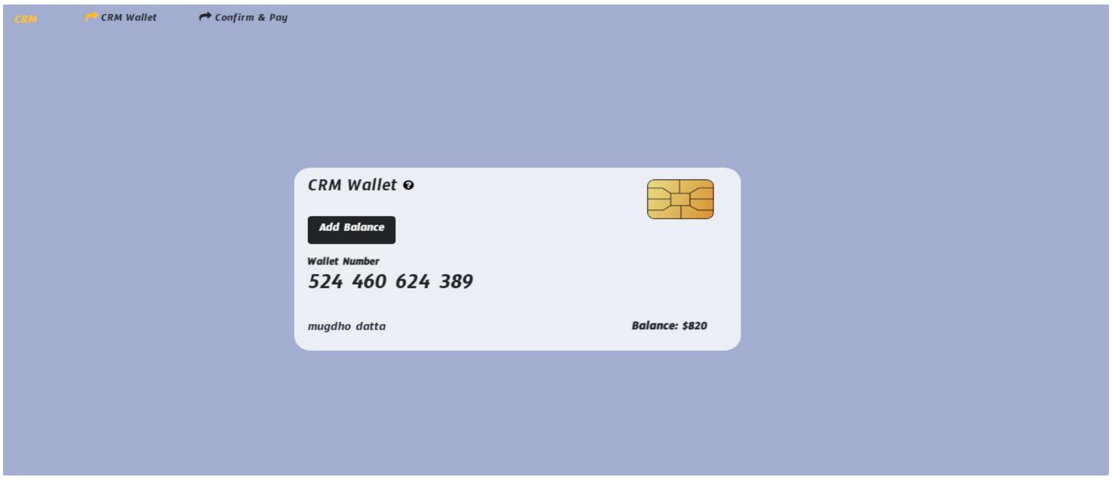


Set billing information

Figure : 6.5.4 (Payment)

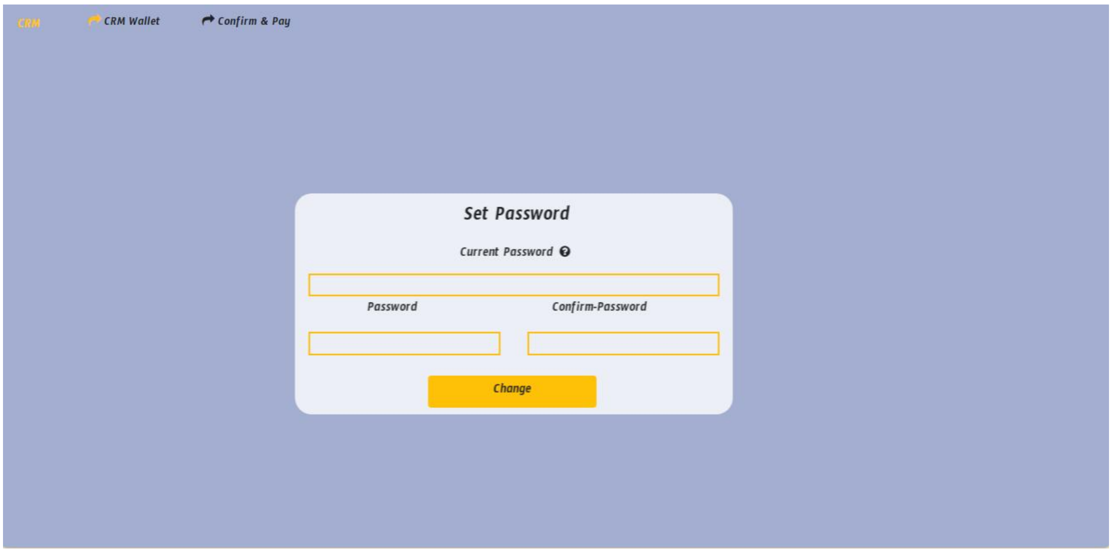
CRM Wallet:

This is our personal wallet on our website every client will have a personal and unic number(one) of wallet when they registered to our website. In this wallet they can add money from their card or any online transaction. Can make payment form our website product. It is save and easy to make payment which save time to our client. He can also change the password of wallet .



Wallet

On the back side of the card, users can change their password. However, since we initially send a default password to the client's email address upon account creation, they must use the default password for the first password change on the CRM card.



Set wallet password

Figure : 6.5.5 (CRM Wallet)

6.6 Chat Functionality

In our platform, administrators, managers, developers, and clients have the ability to engage in communication through a user-friendly chat interface. The exclusivity of profile access to managers and admins ensures a smooth flow of communication. This allows stakeholders to delve into discussions on issues, project specifics, and any required information conveniently using the chat feature.

Nevertheless, it's crucial to highlight that the current chat functionality lacks support for file or document sharing. Recognizing the significance of this capability, our team is actively engaged in improving this feature. We are committed to integrating a file-sharing option, thus enabling stakeholders to exchange project-related files seamlessly. This enhancement aims to elevate the overall communication experience, fostering a more collaborative and efficient environment for all users on our platform.

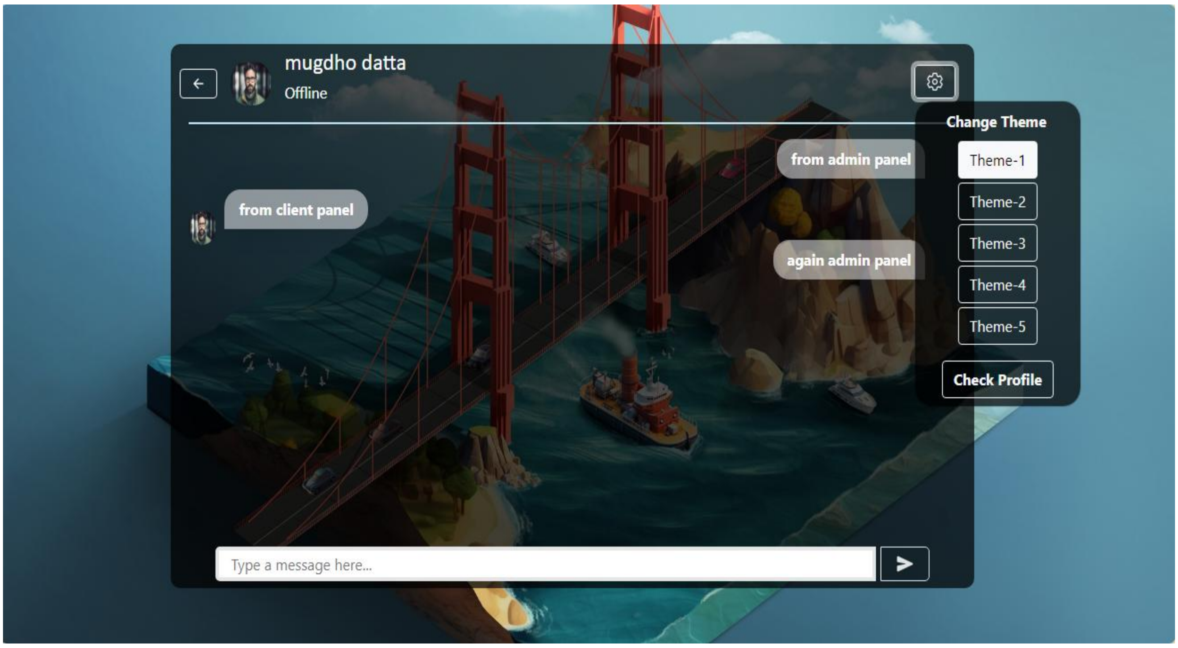


Figure: 6.6 (Chat Functionality)

CHAPTER 7

Limitations & Future Scope

Limitations:

We developed our website with all the required features, but it still requires additional testing and the addition of more features. There are some current limitations are:

1. Clients can place orders for one project at a time. Once a project is delivered, they can proceed to order additional projects.

2. The current system may be optimized for specific project types (e.g., Web Development, SEO, PPC, SM, CM, EM), potentially limiting its applicability to a broader range of projects.

3. This website is only available for English language.

4. User can only sign in with email and password but not with other services like Gmail or Facebook.

5. In chat option user can’t send any image or files.

6. Online payment via visa card or other services not available at this time .

7. It might have bugs that can only be identified by testing it more.

Future Scope:

While the current iteration of the DigitalSpark CRM project marks a significant milestone, there are several avenues for future enhancements and expansion:

Feature Enrichment:

Continuously evolve the platform by incorporating additional features such as document sharing, task tracking, and analytic for deeper insights into project performance.

User Experience Optimization:

Gather user feedback and conduct usability studies to refine the user interface and enhance the overall user experience, ensuring continued satisfaction among all stakeholders.

Mobile Application Development:

Consider developing a mobile application to extend the accessibility of the DigitalSpark CRM platform, allowing users to manage projects and communicate on the go.

Globalization and Multi-language Support:

Expand the platform's reach by introducing multi-language support, catering to a diverse user base and facilitating global collaboration.

Continuous Security Audits:

Implement regular security audits to identify and address potential vulnerabilities, ensuring that the platform remains resilient against emerging threats.

CHAPTER 8

Conclusion

The "DigitalSpark CRM" project has successfully delivered a comprehensive and efficient solution for project management within organizations. The implemented methodology has resulted in a user-friendly platform, offering distinct panels for Admin, Manager, Client, and Developer roles, each contributing to a seamless project life cycle.

The project's strict communication hierarchy ensures centralized interactions, with Admin acting as the sole liaison between clients and the development team. Real-time chat functionality enhances collaboration, while the deployment of the "CRM Wallet" streamlines financial transactions.

This accomplishment is not the terminus but a launchpad for future advancements. Continuous feature enrichment, user experience optimization.
In essence, the project signifies a commitment to innovation and adaptability, providing organizations with a trans formative tool to elevate project management capabilities. As the DigitalSpark CRM becomes an integral part of organizational workflows, it is poised to drive efficiency, transparency, and success in managing projects across diverse industries.

REFERENCES

[5]. Software requirements specification, available at

<< Software requirements specification - Wikipedia >>,last accessed on February 05, 2024.

[6]. Software system, available at

<Software system - Wikipedia>, last accessed on February 10, 2024.

[7]. Writing effective use case diagram, available at

<< How to Write Effective Use Cases? (visual-paradigm.com)>>, last accessed on February 10, 2024.