



An Undergraduate Internship Report on HypeDesk, a client support ticketing system

By

Tasnova Binty Hamid

Student ID: **1730583**

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Supervisor:

MD. Abu Sayed

lecturer

Department of Computer Science & Engineering

Independent University, Bangladesh

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Dissertation submitted in partial fulfillment for the degree of Bachelor of
Science in Computer Science

Department of Computer Science & Engineering

Independent University, Bangladesh

Attestation

This is to certify that I, Tasnova Binty Hamid (ID:1730583), have completed the report on the client support ticketing system, "HypeDesk," and submitted it in partial fulfillment of the requirement for the Degree of Computer Science and Engineering from Independent University, Bangladesh (IUB). It was completed under the supervision of Md. Abu Sayed. I also attest that all of my work is genuine and is based on what I have learned and implemented during my internship. All information sources used in this project and report have been also properly acknowledged. I also assert that neither this project nor any part of it has been submitted elsewhere for any degree of recognition.

Signature

Date

Tasnova Binty Hamid

Name

Acknowledgement

The internship I did with HypeScout Ltd. was an amazing opportunity for me to learn and grow professionally. As a result, I consider myself really fortunate to have been given the opportunity to be a part of it. I'm also glad for the opportunity to meet so many amazing people and professionals who guided me through my internship and helped me complete this report.

At the very beginning, I'd like to thank Almighty Allah for all of His blessings, which enabled me to deliver all the hard work and patience to successfully complete this report.

Then I would like to convey my gratefulness to Md. Abu Sayed, Lecturer, Department of Computer Science Engineering, Independent University, Bangladesh, for his valuable guidance and support, compassion, time, insightful comments, and thoughtful advice on various aspects of my internship and the preparation of this report. I've chosen this moment to gratefully acknowledge his contribution.

Keeping in mind the foregoing, I'd like to take this opportunity to express my gratitude and special thanks to the CTO and Director of HypeScout Ltd, Mushfiqur Rahman Chowdhury, who, despite being extremely busy with his duties, took time out to hear, guide, and keep me on the right track, allowing me to carry out my project at their esteemed organization and extending during the training.

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Finally, I would like to express my deepest gratitude to my family for supporting me through this crucial period of my internship and always staying by my side.

In terms of my professional development, this internship experience I gathered is a huge step forward. The best way for me to attain career goals is to make the most effective use of the skills and knowledge I've earned, and I'll continue to enhance them.

Letter of Transmittal

September 10, 2021

Md. Abu Sayed

Lecturer

Department of Computer Science and Engineering,
Independent University, Bangladesh

Subject: Submission of final Internship Report, Summer 2021.

Dear Sir,

I am submitting my Internship Report, which is part of my Bachelor of Science in Computer Science degree, with the utmost admiration and respect towards you. Working under your close supervision is indeed a huge accomplishment. This report is based on a client support ticketing system called “HypeDesk” Which I was assigned to develop during my internship.

I was fortunate to get an opportunity to work in HypeScout as an intern for the IT Department under the supervision of Mr. Mushfiqur Rahman Chowdhury, CTO of HypeScout. This project provided me both academic as well as practical experience. My internship provided me with a wealth of new experiences because it was my first time working in a real business setting and under the supervision of a team.

I'd like to express my heartfelt gratitude for all of your advice and assistance. I hope and pray that this report meets all of your requirements and exceeds your expectations. If you would be so kind as to get this report and share your valuable opinion, I would be extremely grateful to you.

Sincerely,

Tasnova Binty Hamid

ID: 1730583

Evaluation Committee

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Supervisor

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Abstract

I have worked as an intern web developer in the IT sector at HypeScout limited. During my internship I was assigned with a client support ticketing system project. So, in this report, I have thoroughly explained the structure and configurations of the “HypeDesk” Client support ticketing system. “HypeDesk” is an online client support ticketing system made for managing the customer queries of the company HypeScout. This system is made for existing users so that their queries can be differentiated from the non-registered users and answered timely. In order to explain my work, I discussed the project’s goals, its scope, as well as the details of the project management plan in building the website and deploying it. After that I’ve described the methodology I used to complete the website, from planning to requirement gathering, building, testing, and deployment. Before starting a project, it is necessary to analyze the outcome, draw graphical explanations of the website, consider the results, and finally obtain the analysis from the website. So I have discussed the detailed work description, system design, analysis, product features, input, and output in the body of the project. Then I have discussed the result and analysis based on those test results. Aside from explaining the project, I elaborated on my internship experience at HypeScout, the problems I have faced during this internship, and the solutions to those problems.

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Chapter 1

Introduction

1.1 Overview/Background of the Work

Almost every business has shifted its service to the online sector because of the ongoing COVID situation. Though HypeScout, the company I have worked in is already an online business platform, it often requires face-to-face meetings with the clients to discuss deals and solve any queries they have. But because of the current situations of the country and frequent lockdowns, it has become difficult to manage the client queries. For any queries from the clients towards the company, currently, there is a “contact us” section on the main website that can be accessed by both the existing registered and non-registered users. If anyone submits any kind of query using the contact us section that directly goes to the email of the company. Which is sometimes troublesome to manage because lots of emails regarding different issues are already there. Sometimes important queries can remain unchecked that later can create client dissatisfaction. These small problems can later lead to bigger issues such as losing clients and then eventually experience financial losses and canceled deals. Also sometimes clients may face problems while using features of the website. If they give their review and feedback it will help the company to improve their system. My company supervisor assigned me to design and develop a “Client support system” for their website. To overcome the drawbacks of the existing system, the proposed system has been planned to develop.

“HypeDesk” is a client support system that will assist the company in managing customer service requests and interacting with customers to resolve support problems. This system will be made for the existing users. So that their queries can be differentiated and answered timely. And will be controlled and managed by the admin. Users can log into the system with their email and password, they can post any queries they have.

1.2 Objectives

The main goal of my work during the internship is to develop such a system that will terminate the hassle of interaction between the clients and the companies over emails to solve their queries. The objectives are as follows:

- Users of this system will be able to post queries in the form of tickets.
- Admins will receive user queries as tickets and will be able to categorize them by status.
- When the admin replies to a ticket, the users will be able to see the response as a comment. Users will be able to comment multiple times if necessary.
- When a query is solved, admins can close that ticket to mark it as done.
- Both the user and admins will have a separate dashboard.
- The system will be authentic and secured.

1.3 Scopes

This project is a creation for managing the customer queries of an existing website of the company. This will be a web-based system. The user interface will be designed as a part of the project which will be minimal and easy to understand for the users. There will be a separate user interface for the customers and admins, where they can manage the queries, their priorities, the responses, and also profile settings. The system will be made responsive so that it can be operated from both smartphone and desktop view. Some of the features of this system are:

- In the user dashboard there will be sections like- Create new Ticket, View Tickets, log out, etc.
- Admins will receive the queries in the form of tickets and they can set status on the tickets.
- Admins will be able to start a conversation when they reply to a ticket.
- After the query is solved, the admin will be able to close the ticket and no responses to that query will be recorded after that.
- All the information of the clients will be stored in the system database.

Chapter 2

Literature Review

2.1 Relationship with Undergraduate Studies

The undergraduate CSE program of our university is designed in such a way so that we, the students can learn the theory and implement what we have understood from the courses. Most of our core courses have both theory and labs. In the lab classes, we are given some projects relevant to the theoretical topics. As a student of CSE major, these course projects have made me able to implement the basics of coding skills that I learned from the courses and gradually improve them. My project for the internship is to develop a “Client support system”. Developing this system includes front-end designing and back-end coding and database integration and managing the project all of which I have learned from the core courses of my major.

Some courses which are directly related to my project are, Database Management (CSE303), System Analysis and Design (CSE307), Web Application and Internet (CSE309), Software Engineering (CSE451), and Project Management (CSE457).

- In the Database Management (CSE303) course, I have learned how to do six-element analysis, constructing Rich pictures, ER diagrams, BPMN diagrams, doing normalization, and SQL operations. Also, at the end of this course, I have delivered a project related to the topics I learned.
- In the System Analysis and Design (CSE307) course, I have learned how to do Data Flow diagrams, UML diagrams, Functional and Non-functional requirement analysis, and how to do prototyping of a project.
- The Web Application and Internet (CSE309) course really helped me to do this project because in this course I have learned HTML, CSS, Bootstrap, Javascript, JSON, and PHP. Also after learning each of the frameworks/languages, there were several assignments where we had to implement the knowledge and develop something functional, which really helped me a lot to improve my skills.

- The Software Engineering (CSE451) course was mainly focused on the software development life cycles, cross-functional process diagrams, functional and non-functional requirement tables, and software testing methods which are helping me a lot in the internship.
- I have taken the Project Management (CSE457) course along with the internship. I found this course to be very helpful and relevant. Here I am getting to know more about project management, the role of a project manager, how to develop a project plan, etc.

2.2 Related works

My project “HypeDesk” is a web-based client support system that will assist the company in managing customer service requests and interacting with customers to resolve support problems. It is a ticketing-based support system will with will reduce the hassle of managing client queries. Before starting my work I had to go through some journals, research papers, and articles available online. Currently, there are some existing customer support softwares that are being used in different businesses. These softwares are mostly paid and not free. The research papers I found regarding IT helpdesks were quite interesting and informative. These helped me to gain more ideas about the features and usabilities of client support systems.

In the research paper, “Analysis, Design, and Implementation of a Helpdesk Management system- Case Study on Albanian Radio Television” the authors F. Ismaili, A. Bulku, B.A. Kaushi has stated that the designing and implementation process of a ticketing system not only offers a centrally organized way of collecting necessary information about the IT-related problems of the organization but will also offer a better way to deal with those problems. It will help to organize the work of the sector and help other employees to understand the problem and report the problem to the relevant sector of the company. It will also provide a way to do easy work distribution among the staff members according to their problem-solving skills[1].

In the research paper, “Ticketing System” the authors Florika Gohil, Mr. Vikash Kumar have stated that All clients who are connected with one or more companies remotely/within the infrastructure can use the ticketing tool. New users in an IT company frequently want assistance in understanding the new system that has been implemented. The ticketing system can assist them in this situation by accepting the inquiry requests and processing them to provide the appropriate solutions. As a result, the ticketing system can serve as a helpline for all people seeking answers to their questions, potentially saving the organization from a financial crisis [2].

Roel P. Masongsong and Maria Amelia E. Damian have said in their research paper

about Help Desk Management System that, After conducting the implementation, According to their result table, help desks offer a variety of online tools and resources for their clients to employ in order to handle IT-related issues. Self-help technologies can successfully extend the hours of availability of the help desk, allowing clients to receive answers to their questions even when the help desk is unstaffed. Even during normal business hours, self-service tools can eliminate the need for direct interaction with help desk professionals while maintaining excellent service availability and quality[3].

Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

A work breakdown structure (WBS) is a deconstruction of a project that is visible, hierarchical, and focused on deliverables. It is a useful diagram for managing projects because it helps with working backward from a project's end product to identify all of the actions required to complete the project successfully. The organizational chart of a work breakdown structure outlines all of a project's processes, making it a crucial project management tool for planning and scheduling. The final deliverable sits atop the diagram, while the levels below it split the project scope by indicating the phases, deliverables, and tasks required to fulfill it. There are two types of WBS, one is Deliverable based and the other is Phase-based. For this project, phase-based WBS is used.

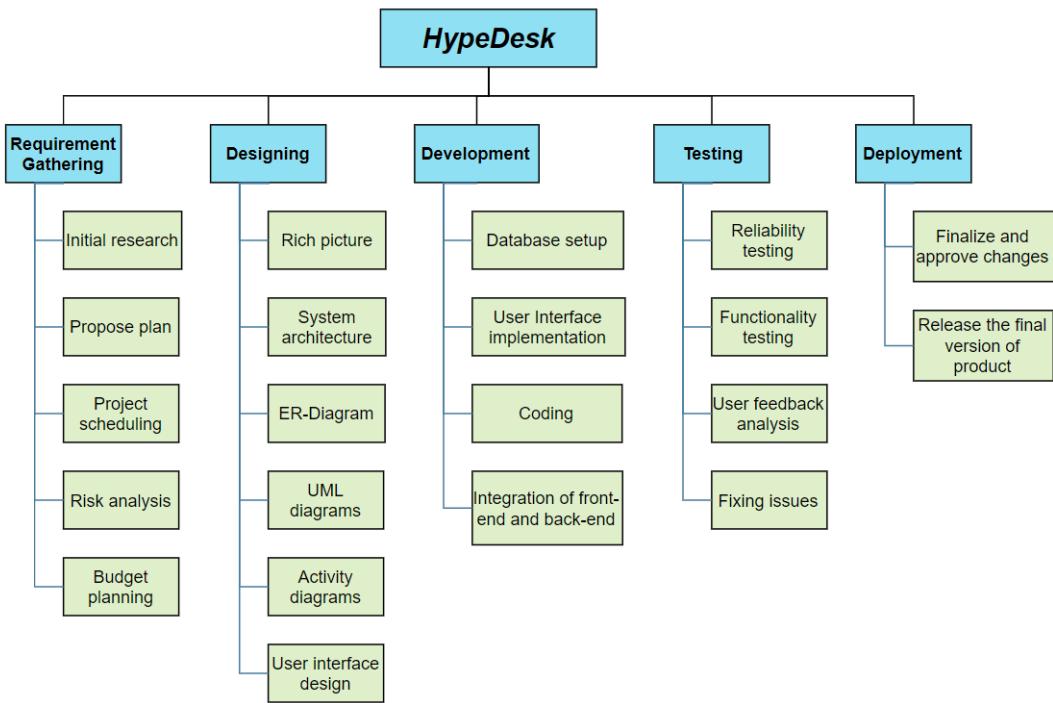


Figure 3.1: Work Breakdown Structure of HypeDesk

In the above WBS, there are five elements in Level 1. Each of these Elements represents a typical project phase. The Level 2 Elements are the phase-specific deliverables. Here the main phases of the project are Requirement gathering, Designing, Development, Testing, and Deployment. Under them, there are specific unique tasks that are to be completed in order to complete the current phase and go to the next. Cost estimating, resource allocation, and risk assessment are all critical project management procedures that benefit from a well-designed WBS. A WBS also aids in the avoidance of frequent project challenges such as missed deadlines, scope creep, and cost overrun, to name a few. When constructed as comprehensively as possible, the WBS serves as a blueprint to help you achieve what appears to be a challenging task. When the project is split down with a WBS, however, it becomes much more feasible.

3.2 Process/Activity wise Time Distribution

It is very important to distribute the total time required to complete the project based on activities to be done. It is an important part of managing a project that requires abilities such as planning, goal-setting, and prioritization in order to get better results. The critical path is the longest series of actions that must be done to successfully complete a project from start to finish in project management. Critical activities are tasks that are on the critical path because if they are delayed, the entire project will be delayed. Here in the table below the critical path method is applied to determine the

time distribution of HypeDesk.

Node	Activity			Predecessor	Duration (Days)
A	Requirement Analysis			-	6
B	Product Design and Prototype			A	9
C	Infrastructure Setup			A, B	6
D	Database Setup			C	10
E	Integration of Front-end and Back-end			B, D	22
F	Feedback and Testing			E	8
G	Report finalization and Deployment			F	7

Table 3.2: Activity wise Time Distribution of HypeDesk

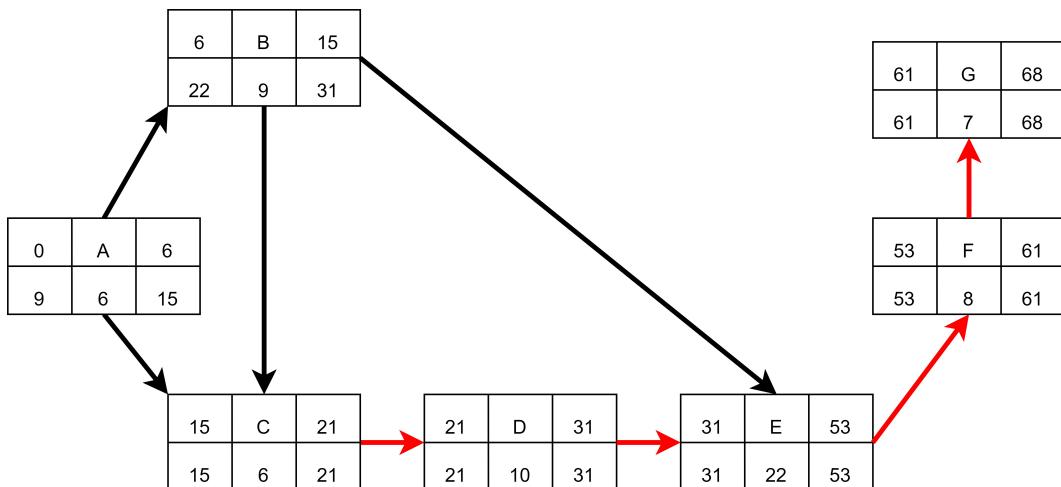


Figure 3.2: Activity wise Time Distribution of HypeDesk

From the above table, we can see that the red arrows indicate the critical path of this project which is calculated by Critical Path Method.

3.3 Gantt Chart

A Gantt chart, which is often used in project management, is one of the most popular and useful ways to depict activities (tasks or events) against time. A list of the activities is on the left side of the chart, and a suitable time scale can be found along the top. Each action is represented by a bar, whose location and length indicate the activity's start, duration, and end dates. A Gantt chart is necessary for managing a project because it can help to easily visualize the timeline of the project. Here a Gantt chart, based on the project activities and their distributed time is plotted below.

3.4. PROCESS/ACTIVITY WISE RESOURCE ALLOCATION & FINANCING

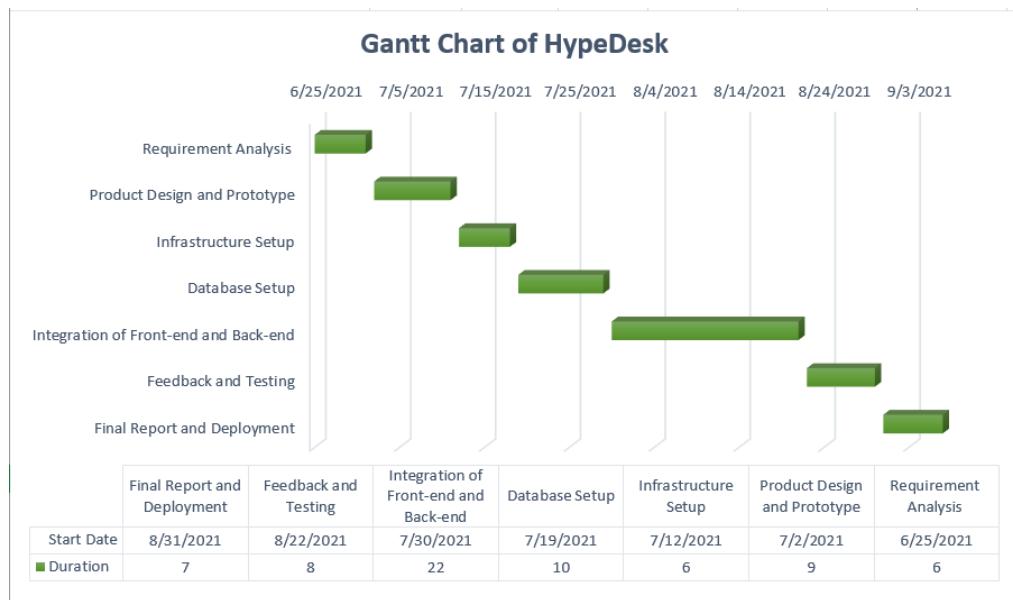


Figure 3.3: Gantt Chart of HypeDesk

3.4 Process/Activity wise Resource Allocation

Resource allocation is the process of allocating and scheduling resources to specific project tasks. Resources are the backbone of managing projects. The main resources of project development are the time and percentage of work effort given by the people. These resources are used to finish the project from the starting to the deployment of the final product. The activity-wise resource allocation of HypeDesk is explained below:

Activity	Days	Work Percentage
Requirement Analysis	6	9
Product Design and Prototype	9	13
Infrastructure Setup	6	9
Database Setup	10	15
Integration of Front-end and Back-end	22	32
Feedback and Testing	8	12
Report Finalization and Deployment	7	10
Total	68	100

Table 3.1: Activity-wise Resource allocation

- Requirement Gathering:** The tasks of requirements analysis include determining the needs or conditions to meet the new or altered product or project, taking into account the possibly conflicting requirements of various stakeholders, analyzing,

documenting, validating, and managing software or system requirements, and analyzing, documenting, validating, and managing software or system requirements. The success or failure of a systems or software project is determined by the requirements analysis. For HypeDesk, requirement analysis took about 6 days and 9 percent of the total work effort.

2. **Design:** During the design phase, the detailed software architecture that meets specific project requirements is created. During this phase, the project's entire structure is developed, including the final prototype and mockups that will be utilized in subsequent phases of the software development process. For the prototyping of HypeDesk, Figma is used to illustrate the web design layout. The design phase required 9 days which is 13 percent of the total work effort.
3. **Development:** Within the software development process, the development phase entails producing code and translating design documentation into actual software. This stage of the software development cycle is usually the longest because it is the backbone of the entire process and contains a number of important considerations. If the requirements for the software project were properly met during the earlier stages of software development, the ready-to-use software is certain to match them. The development phase of Hypedesk took the most time and effort in this case which includes Integration of Front-end and Back-end (32 percent) and Database setup(15 percent). It took about 32 days and 47 percent of the total work effort.
4. **Feedback and Testing:** Testing is the process of evaluating the functionality of a software program with the goal of determining whether the generated software matched the defined requirements and identifying errors in order to deliver a quality product. In this phase, the Reliability test and Functionality test have been done. Also, some users' gave feedback by using the demo version which helped in improving the features and fix the bugs. The testing Phase of HypeDesk took about 8 days and 12 percent of the total work effort.
5. **Deployment:** This is the stage in which the prepared final product is actually deployed. It is carried out in a step-by-step manner in accordance with the implementation strategy. The newly developed and tested web application is transferred to production, including data and component transfers, with only the particular changes being released in subsequent releases. After Fixing the issues based on user feedback in the testing phase, Final changes will be implemented. After that, the final version of HypeDesk will be released. The Deployment phase of HypeDesk took about 7 days and 10 percent of the total work effort.

3.5 Estimated Costing

One of the most important aspects of project management and planning is cost estimation. This is due to the fact that a project is determined by at least three essential constraints: scope, budget, and time. Cost estimates, of course, address the budget limitation. As a result, they are extremely important for project management. The cost was determined based on the system's functionality that the company required. Pre-designed themes, UI design costs, Logo design costs, domain and hosting costs, and so forth are all included.

Work Description	Estimated cost in Taka
Cloud Hosting	5,000/-
Web-based system design and development	12,400/-
Testing and Feedback	7,500/-
Miscellaneous	4,500/-
Total	29,400/-

Table 3.2: Work description-wise Estimated Costing

Chapter 4

Methodology

A methodology is a set of approaches, practices, processes, techniques, procedures, and norms that are used to solve a problem. They're well-defined methods that show us exactly what steps to take next, why each step is important, and how a project stage should be completed.

For this project, I have used the Agile development methodology. There are various reasons that made me choose to work with agile. In this chapter, I will describe each phase of the Agile development model and describe the importance of deployment using this model. An agile methodology is a form of project management technique that is primarily used in software development. Agile approaches divide work down into small chunks with minimal planning and avoid long-term planning entirely. Iterations are brief periods of time that run anywhere from one to four weeks. Each iteration entails a team going through the entire software development cycle, which includes planning, requirements analysis, design, coding, unit testing, and acceptance testing once a working product has been demonstrated to stakeholders[4].

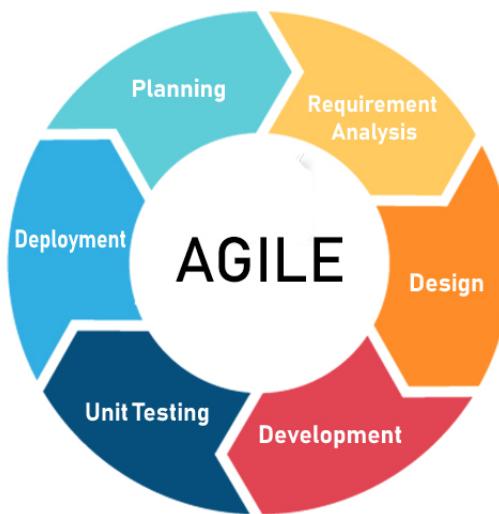


Figure 4.1: Agile Software Development Methodology Model

How I have utilized each step of Agile development methodology are stated below:

- In the “Requirements gathering” phase, I have done brief research on the topic so that I can have enough reference material to work on with. For this step, I have gathered relevant research papers, analyzed feature requirements of the company, validated them, and documented all material for future work.
- In the “Design” phase, the detailed software architecture is created. For this step, I took help from the gathered materials from the previous step. That helped me to come up with the UI design of HypeDesk. Then for the prototyping of HypeDesk, Figma is used to illustrate the web design layout.
- The “Development” phase of the software development cycle took the longest time to complete because it is the backbone of the entire process and contains a number of important considerations. The results of the previous stage’s analysis and design are put into action in this stage. The system is then developed with the user’s needs in mind, and the user interface is meant to meet their needs for easy navigation.
- After the development of the whole website, then comes the ”Testing” phase. In this phase, the Reliability test and Functionality test have been done. Also, taking some users feedback from the demo version helped in improving the features and fix the bugs.
- In the “Implementation” phase, the bugs and errors identified from the testing phase were solved. And after solving all the issues the final product will be deployed for users.
- The “Feedback/Review” phase in the agile methodology has helped to identify the lackings of the system from a client’s perspective after the user feedback.

From the above discussion of utilization each step of Agile methodology, we can see that Agile approaches reduces overall risk and helps the project to respond swiftly to changes, can quickly and easily adapt to any given changes, can achieve transparency and total alignment in the development and testing phases, delivers overall higher quality products and creates customer satisfaction. And because of these reasons, I have chosen the Agile development methodology for my project.

Chapter 5

Body of the Project

5.1 Work Description

“HypeDesk” is an online client support ticketing system made for managing the customer queries of the company HypeScout. This system will be made for the existing users. So that their queries can be differentiated from the non-registered users and answered timely. This system will be controlled and managed by the admin assigned by the company. Users can log into the system with their email and password and can post any queries they have. There will be a user dashboard where they can keep track of the sent queries. Admins will receive the queries in the form of tickets and they can set priorities on the tickets. They can start a conversation when they reply to a ticket. After the problem is solved, the admin will be able to close the ticket. This system will be developed using HTML5, CSS, Bootstrap, PHP, and MySQL. My objective as an intern was to design and develop the front-end and the back-end while working under the supervision of the company’s senior developer.

5.2 System Analysis

5.2.1 Six Element Analysis

Process	System Roles					
	Human	Non-computing Hardware	Computing Hardware	Software	Database	Communication & Network
Registration	User	N/A	Laptop/ Desktop Computer	XAMPP, VScode, Chrome Browser	HypeDesk Database on MySQL	Wifi or Mobile data for the internet connectivity
Login	User or Admin	N/A	Laptop/ Desktop Computer	XAMPP, VScode, Chrome Browser	HypeDesk Database on MySQL	Wifi or Mobile data for the internet connectivity
Create new ticket	User	N/A	Laptop/ Desktop Computer	XAMPP, VScode, Chrome Browser	HypeDesk Database on MySQL	Wifi or Mobile data for the internet connectivity
View ticket history	User or Admin	N/A	Laptop/ Desktop Computer	XAMPP, VScode, Chrome Browser	HypeDesk Database on MySQL	Wifi or Mobile data for the internet connectivity
View/Add reply to tickets	User or Admin	N/A	Laptop/ Desktop Computer	XAMPP, VScode, Chrome Browser	HypeDesk Database on MySQL	Wifi or Mobile data for the internet connectivity
Sort ticket based on priority	Admin	N/A	Laptop/ Desktop Computer	XAMPP, VScode, Chrome Browser	HypeDesk Database on MySQL	Wifi or Mobile data for the internet connectivity
Close/Delete tickets	Admin	N/A	Laptop/ Desktop Computer	XAMPP, VScode, Chrome Browser	HypeDesk Database on MySQL	Wifi or Mobile data for the internet connectivity

Table 5.2.1: Six Element analysis of HypeDesk.

5.2.2 Feasibility Analysis

Before actually developing the project “HypeDesk”, we first need to analyze how feasible is it going to be. As the name implies, a feasibility study is a measurement of a software product in terms of how useful product development will be for the business from a practical standpoint. Feasibility studies are conducted for a variety of reasons, including determining whether a software product is appropriate in terms of development, implementation, and project value to the organization. The feasibility study of “HypeDesk” is primarily focused on five areas that are, Technical feasibility, Operational feasibility, Legal feasibility, Financial feasibility, and Schedule feasibility. The most significant aspect of the feasibility analysis is the economic feasibility study, while the legal feasibility study is less crucial[5].

1. **Technical feasibility:** As “HypeDesk” is a web-based system, it will require technological resources like HTML, CSS, PHP, JS, and tools like XAMPP, VScode, Figma, etc. As all of these resources are free for users and the required hardware such as PC or laptop is available so it can be determined that, this project is technically possible since all of the necessary hardware, software, and other technical requirements are available.
2. **Operational feasibility:** The current pandemic situation makes a web-based customer support system particularly practicable, as clients visiting the business directly are currently very unsafe. Users will no longer have to wait in suspense for their queries to be seen or answered, thanks to this support system. They will be able to trace their inquiries using this web-based system. It will also help the company to track and manage the queries of their client, after the deployment of their very own customer support. So the project is operationally feasible.
3. **Legal feasibility:** The purpose of a legal feasibility study is to determine whether or not a proposed project complies with legal and ethical standards. “HypeDesk” is the customer support system proposed by the company HypeScout as an online help desk for managing their clients. As it will be integrated with their main existing website, checking the legal implementation of the project, privacy law acts or social media legislation, project certificate, license, and copyright was critical for the company. As the project met all the related laws and regulations, it is legally feasible.
4. **Financial feasibility:** The project’s cost and benefit are examined in a financial feasibility study. That is, a detailed examination of the project’s development costs is carried out as part of this feasibility study, which includes all required costs for final development, such as hardware and software resources, plan and development

costs, and operational costs, among other things. After examining all the related areas it is determined that the project is financially stable.

5. **Schedule feasibility:** In a Schedule Feasibility Study, the proposed project's timelines/deadlines are assessed, which includes the estimated time taken to complete the final product, which has a significant impact on the organization because the project's goal may be lost if it is not completed on time. As per the detailed project management plan described in Chapter 3, it can be finalized that the project's schedule is feasible.

5.2.3 Problem Solution Analysis

There were some problems that I faced while developing this client support system which were eventually solved effectively. Some of those problems and their solutions are discussed below:

- **Issue with inserting special character:** If there was any special character such as “&”, “%”, “#” were given as input in the description or subject field of the ticket, it showed an error. Later the reason for this problem was identified that it happened because, before inserting a string in SQL escape command will have to be used which I did not do before the post request. This problem was solved after executing the post request correctly.
- **Image attachment issue:** There is an option of inserting an image or screenshot in the ticket while submitting a query. But it is not mandatory that every user will have to attach an image. But even if a user submits a ticket without an image, it was taking the image input and showing a blank image on the screen. This happened because even if the user is sending a query without an image the initial path of the image which was supposed to be saved in the database was by default inserted. This problem is solved by implementing an If else condition that will return an empty string instead of that initial path if there is no image inserted.
- **Ticket closing issue:** When a query is solved the admin is supposed to close the ticket so that no responses to the query are recorded after that but there was an issue in closing the ticket which was later fixed by the query parameter. It happened because, when closing the ticket, it was not specifically stated which ticket needs to be closed. To undo this mistake, the specific ticket id was passed in the query parameter to identify each ticket.
- **Issue with send button:** There was an issue with the send button of the user's reply section of the ticket. This happened because a proper HTML tag was not

used. After determining the issue it was solved accordingly by using the correct HTML tag for button.

- **Issue with reply status:** The ticket status was supposed to change only if the admin replies. Two SQL queries run here, one to insert and the other for updating the status. These two queries were supposed to execute by clicking one button but it did not work at first. To solve this problem, an SQL transaction was performed so that both the queries can run parallelly.

5.2.4 Effect and Constraints Analysis

This customer support system will help the users to register their complaints or queries. Users of this system will be able to send queries as tickets, view sent or pending tickets, and also will be able to see replies from the admin and comment there. However, our system has some limitations. Maybe an online help desk system will not be as efficient as face-to-face client meetings or phone calls. But for the company, managing a separate system linked with their website rather than managing an overflowed email inbox full of different sorts of information or answering frequent phone calls and not being able to track the customer details will be more comforting. As this website is the primary version of the companies idea of a support system, it still can have flaws or user experience issues. The company will be working hard to make more updates and add more features to the website so that it may aid and encourage more individuals to start using online-based services during the epidemic, rather than going around to unsafe gatherings. This will not only make the employee's hassle to manage client queries more manageable, but it will also bring a significant benefit during the pandemic for the company by elevating clients satisfaction.

5.3 System Design

5.3.1 Rich Picture

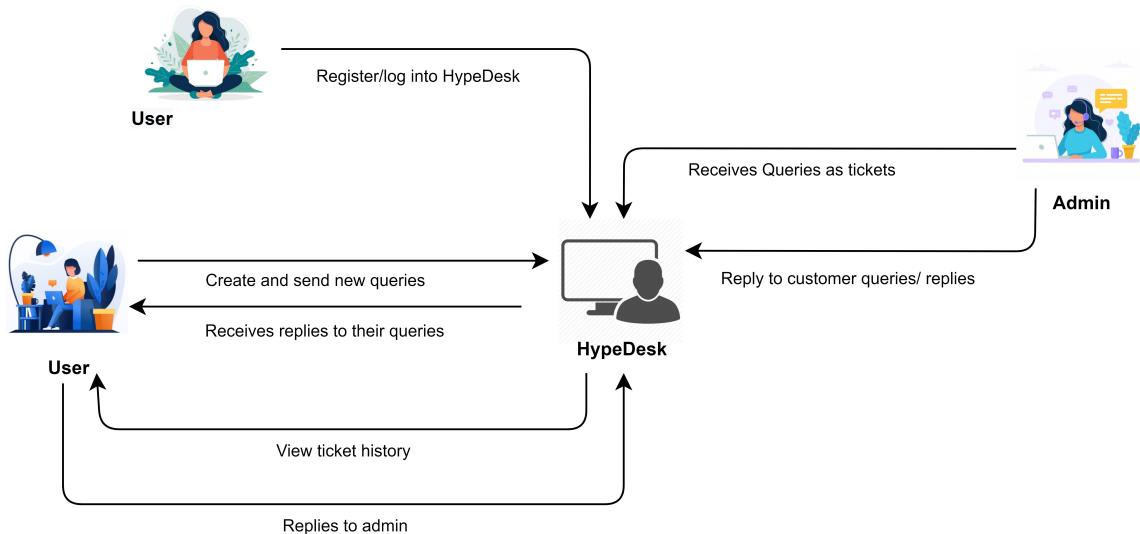


Figure 5.1: Rich Picture of HypeDesk

This figure above illustrates the rich picture of client support ticketing system "HypeDesk". In this Rich picture, we can see how the workflow of the total system takes place from user creating tickets to admin's response toward the queries.

5.3.2 UML Diagrams

A UML diagram is a visual representation of a system that is based on the UML (Unified Modeling Language). UML diagrams are used to communicate a system's diverse aspects and characteristics. There are many types of UML diagrams. In this section Use case and Activity diagram is illustrated for this project.

Use case Diagram

A use case diagram is a type of behavior diagram that depicts the visible interactions between actors and the system being developed. This Use-case diagram below depicts the whole system of HypeDesk, as well as relevant use cases and actors, and connects them.



Figure 5.2: Use case Diagram of HypeDesk

Activity Diagrams

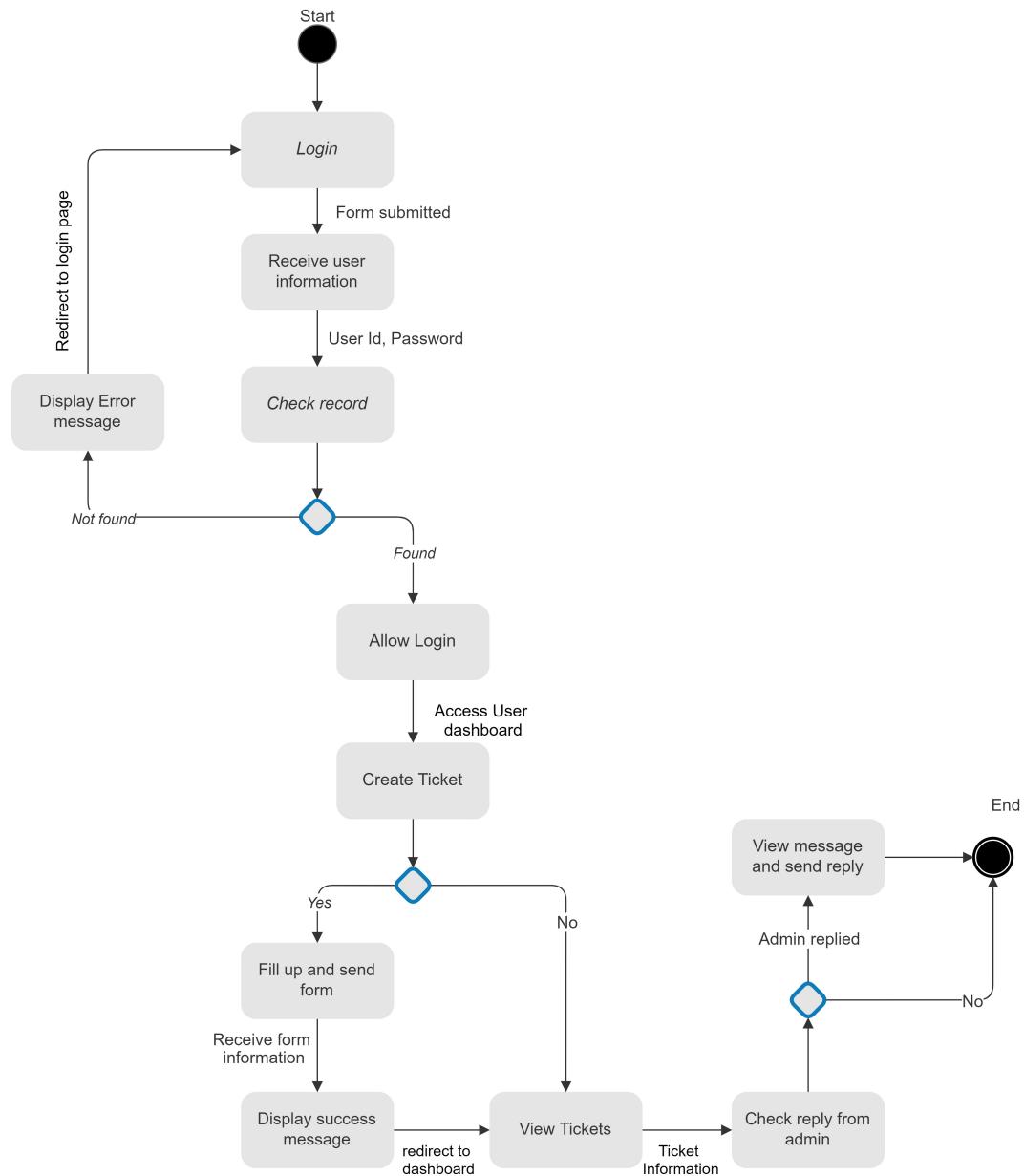


Figure 5.3: Activity Diagram of User

This Activity diagram illustrates the activities the user performs when they access the client support system. They log into the system after validation, then if they want to create a ticket they will have to fill-up the form and send it. Otherwise, they can just view ticket history. Then if there is a reply from the admin, the user can also send a reply. After this, they can simply log out of the system.

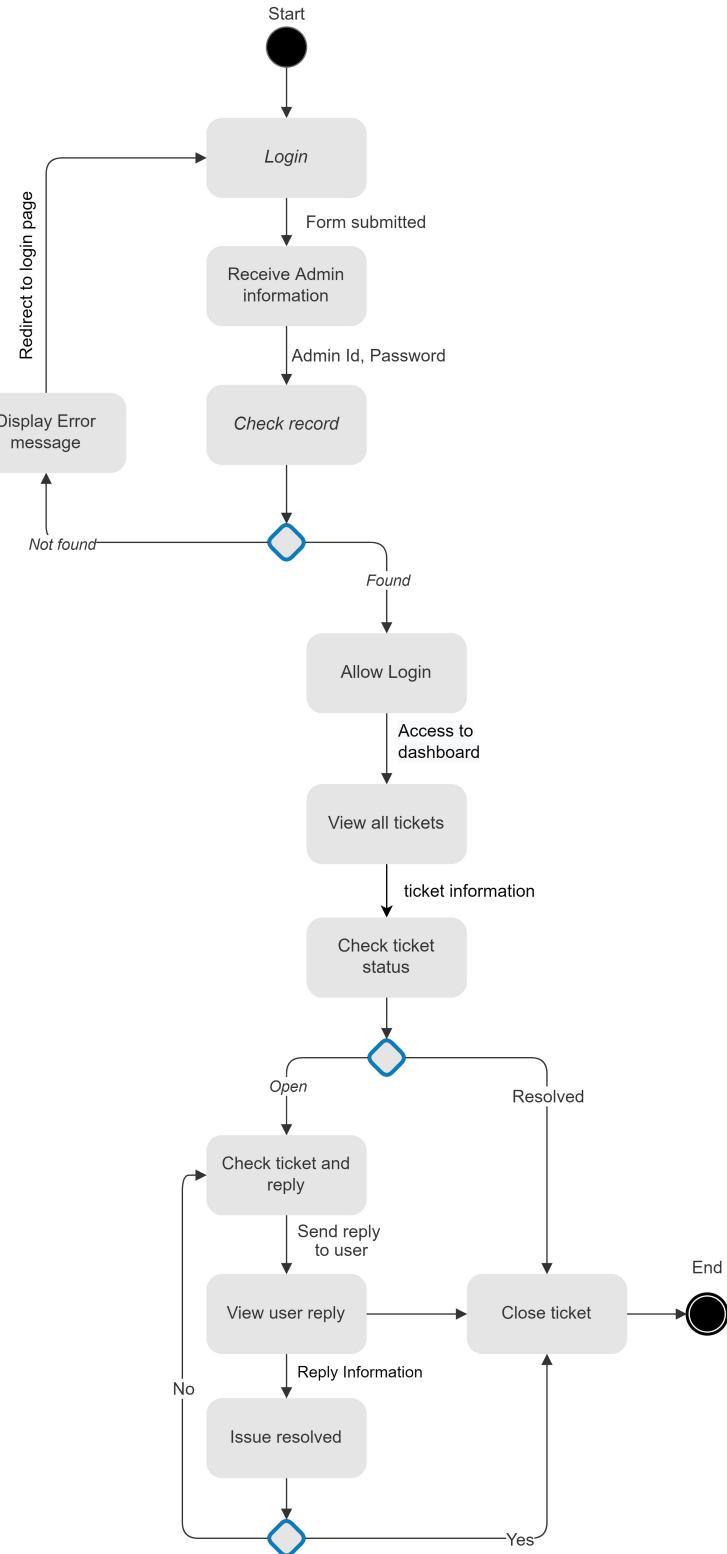


Figure 5.4: Activity Diagram of Admin

This Activity diagram illustrates the activities the admin performs after access the client support system. Admin will be able to log into the system after validation. They can view all tickets from users and send replies to where needed and then log out.

5.3.3 Functional and Non-Functional Requirements

Functional requirements are product features or functions that developers must implement to enable users to accomplish their tasks. On the other hand, a non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. They are contrasted with functional requirements that define specific behavior or functions. The functional and non-functional requirements of this system are stated below.

Functional Requirements:

- While registering into the system, the Database will store all the user data.
- When logging into the system, the authentication system will validate the user data.
- A user profile will be created for all registered users.
- User and Admin will have a different user interface.
- Users will be able to create tickets to register their queries.
- Users will be able to view their running and previous tickets in one place.
- Users will be able to see the replies of the admin to their queries.
- The user will be able to input the required data.
- Will encrypt all user data and host it in the cloud for data security.
- Admin will be able to see all the tickets sent by different users in the dashboard.
- Admins will be able to set a status to the ticket based on the queries are resolved or not.
- When a new ticket arrives the status of it will be automatically set to pending.
- When the admin replies to a ticket the ticket status will be set to open.
- Admins will be able to close a ticket after the query is solved. And after closing the ticket no response of that particular ticket will be recorded.
- All information will be stored in the database.
- All stored information will be secured and cannot be tampered with.

Non-Functional Requirements:

- The user interface needs to be friendly and intuitive for the easy access of the users.
- Should allow users and admin to interact with each other through ticket replies.
- The system needs to be monitored regularly to minimize the number of bugs.
- The hardware needs to be powerful to be able to process all the data.
- Should ensure users' privacy and should provide security.
- The system needs to be built in a way so that it can be easily maintained, updated or modified to add more features in the future.
- The system needs to be monitored, maintained regularly to ensure robustness, and to eliminate any security threats.

5.4 Product Features

5.4.1 input

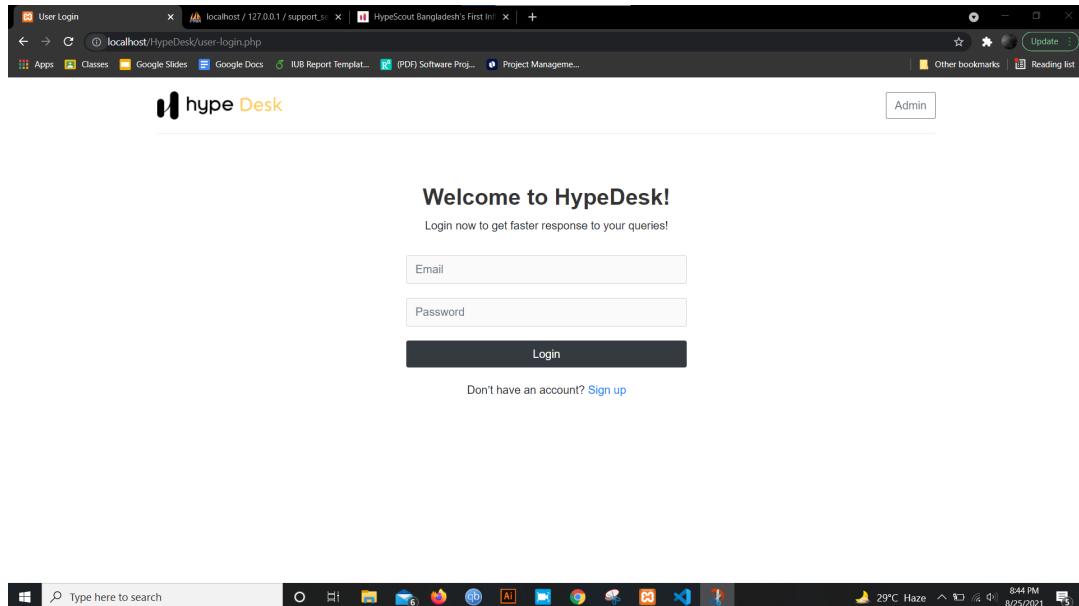
User Login Page:

Figure 5.5: User Login page of HypeDesk

This is the Login page for users. Users can login to the system using their registered email and password.

Registration Page:

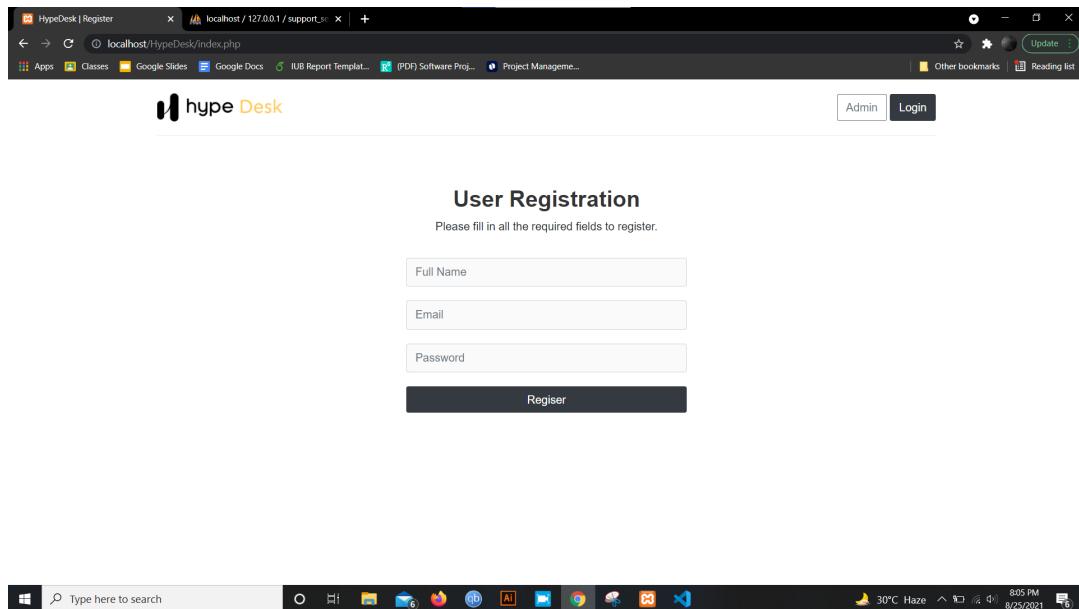


Figure 5.6: Registration page of HypeDesk

This is the Registration page for users. Users can Register into the system using their Username, email and password.

Admin Login Page:

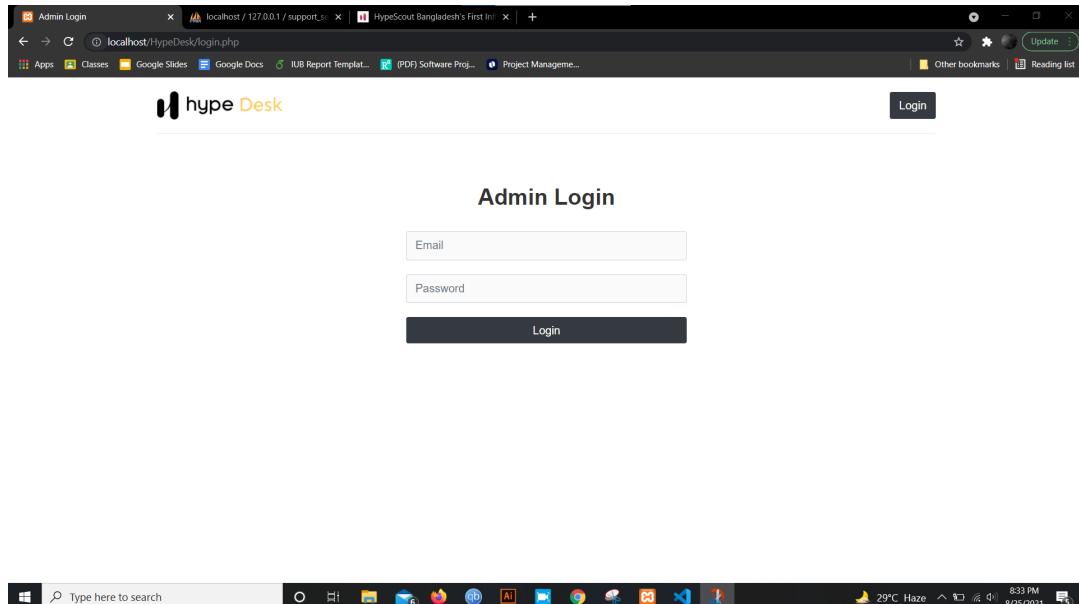


Figure 5.7: Admin Login Page of HypeDesk

This is the Login page for Admin. Admin can login to the system using email and password.

User Dashboard:

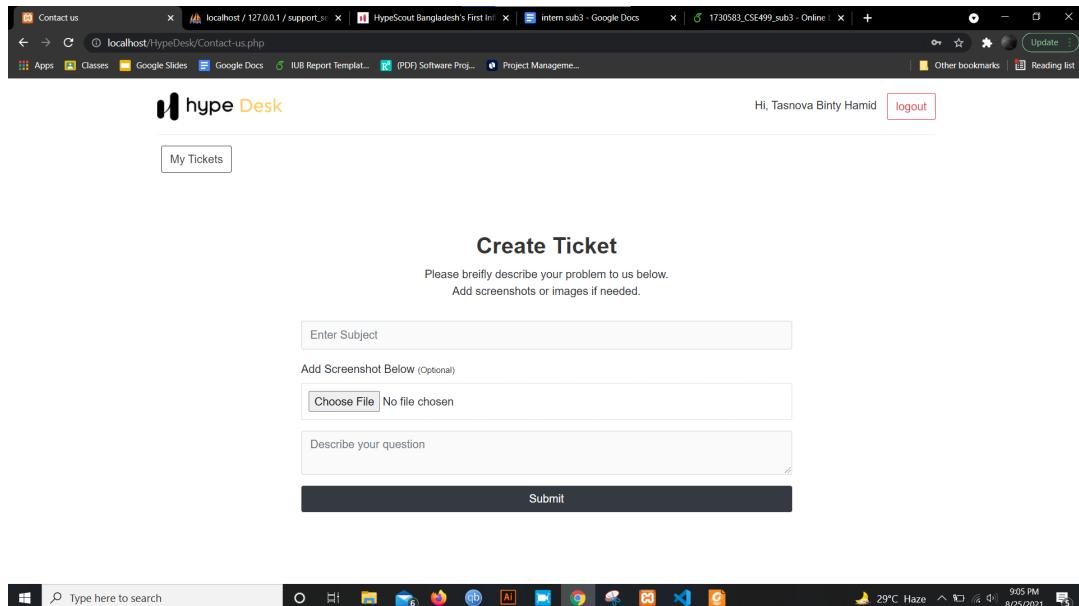


Figure 5.8: User Dashboard

This is the User dashboard which the user will see after logging in.

Admin Dashboard

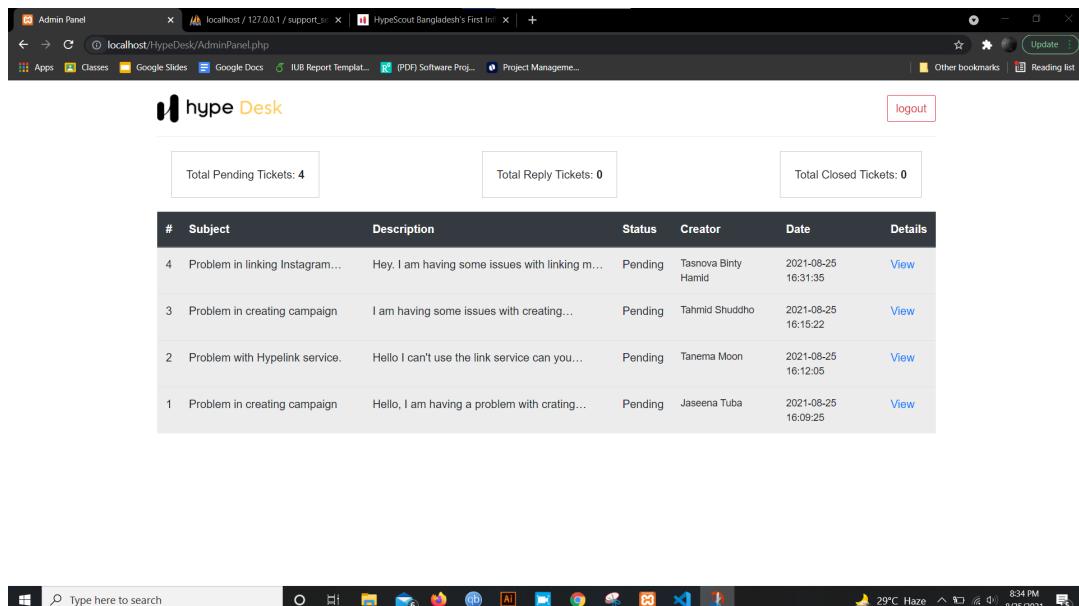


Figure 5.9: Admin Dashboard

This is the Admin's dashboard which the admin will see after logging in. Admin can see all the queries from users and status-wise ticket count for easy access.

5.4.2 output

User's successful registration:

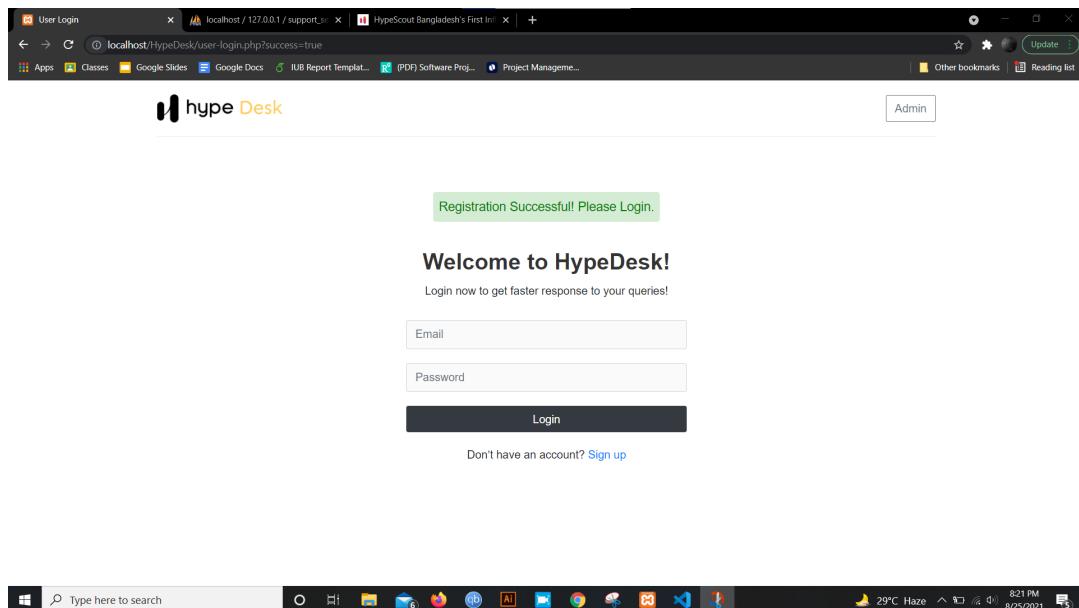


Figure 5.10: User's successful registration

A success message will appear after the user is successfully registered into the system.

User's Query submission:

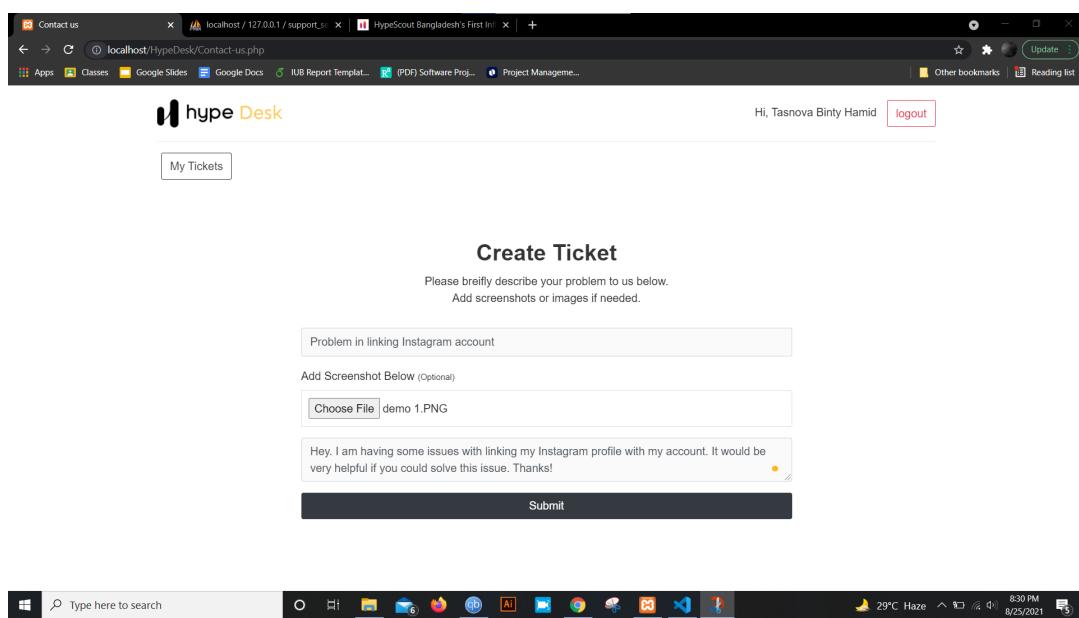


Figure 5.11: User's Query submission

User can fill up the required fields and submit their query to the admin. They can upload image or screen-shots if needed.

Admin's Reply to Query:

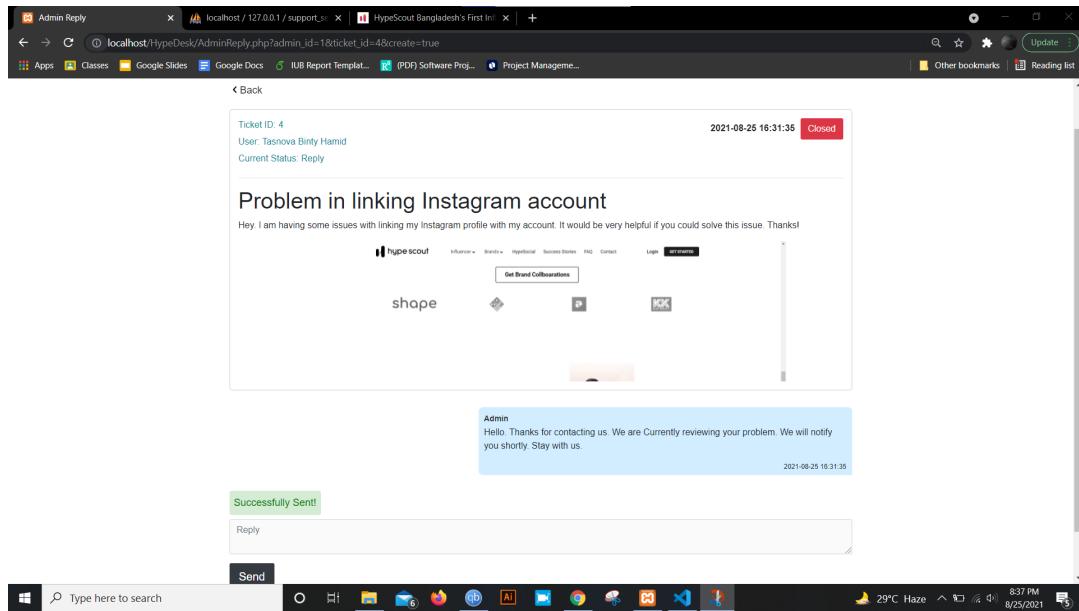


Figure 5.12: Admin's Reply to Query

When admin will view the ticket he will be able to reply to the query. His reply will be sent to the user with timestamp. After the reply, ticket status will be changed.

Admin Closing ticket:

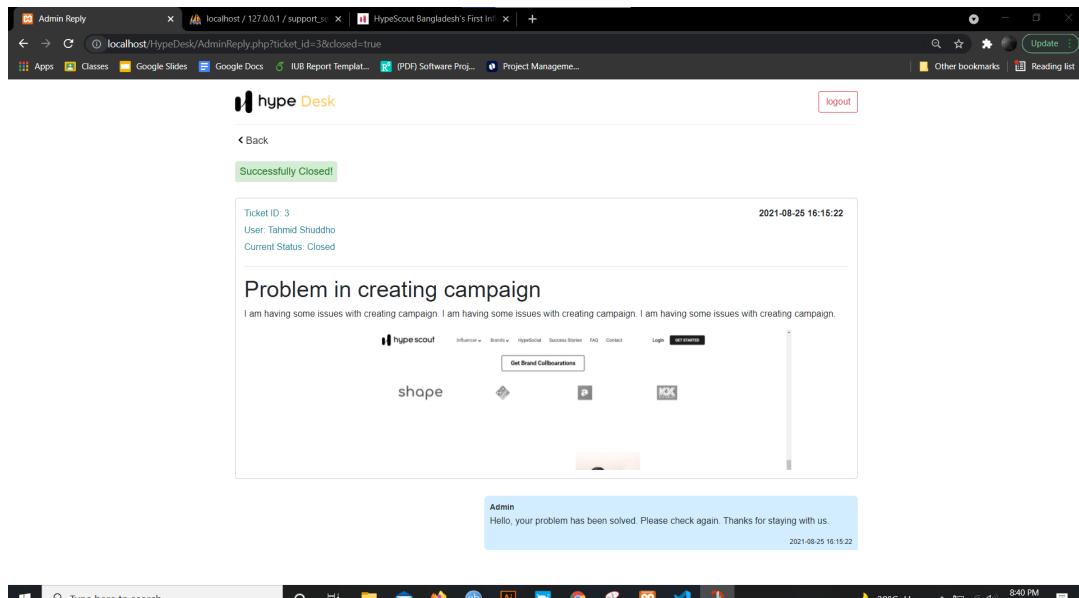


Figure 5.13: Admin Closing ticket

When a query is solved, admin can close the ticket. After closing the ticket no further response of that ticket will be recorded.

Admin's updated Dashboard:

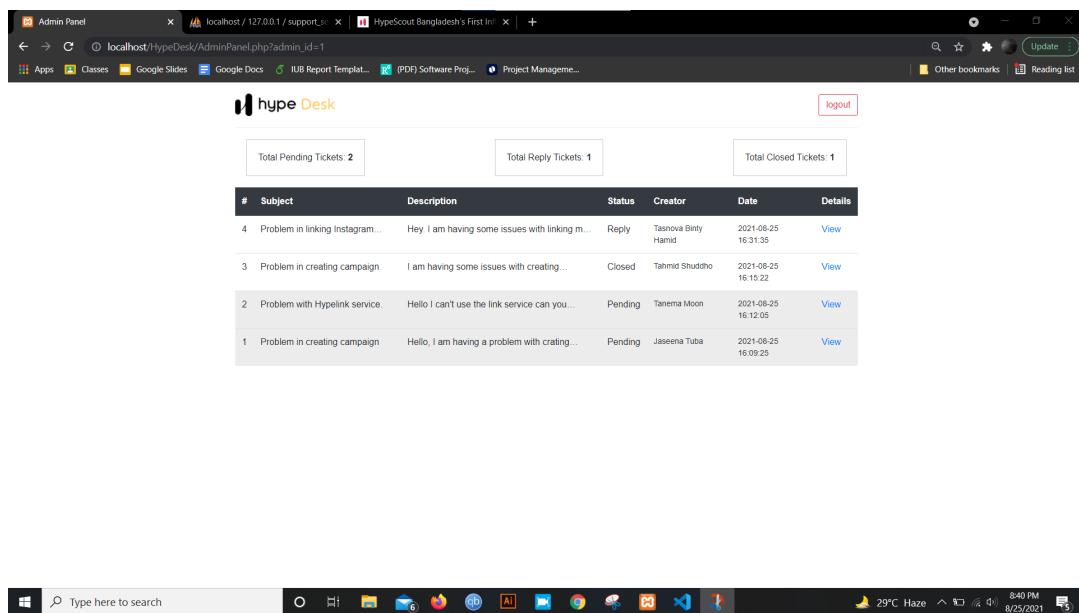


Figure 5.14: Admin's updated Dashboard

After changing a ticket's status from pending, their row will turn white. Only pending ticket's row will remain grey. Also the ticket count will update.

User's updated dashboard:

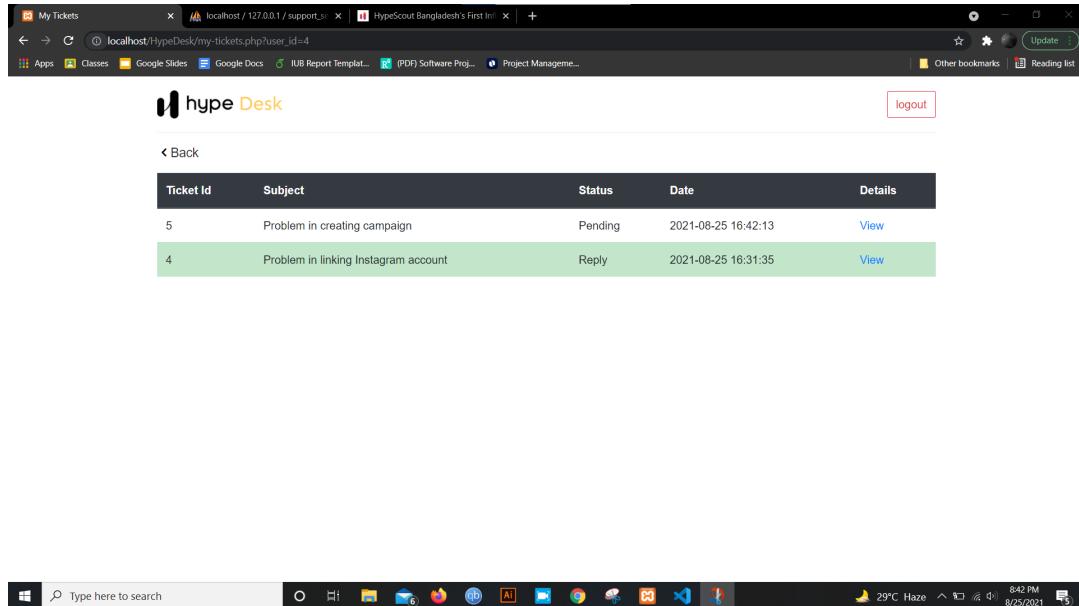


Figure 5.15: User's updated dashboard

When admin reply to a ticket of the User, the ticket row will turn green. This will also act as notification indicator for the user.

User's reply:

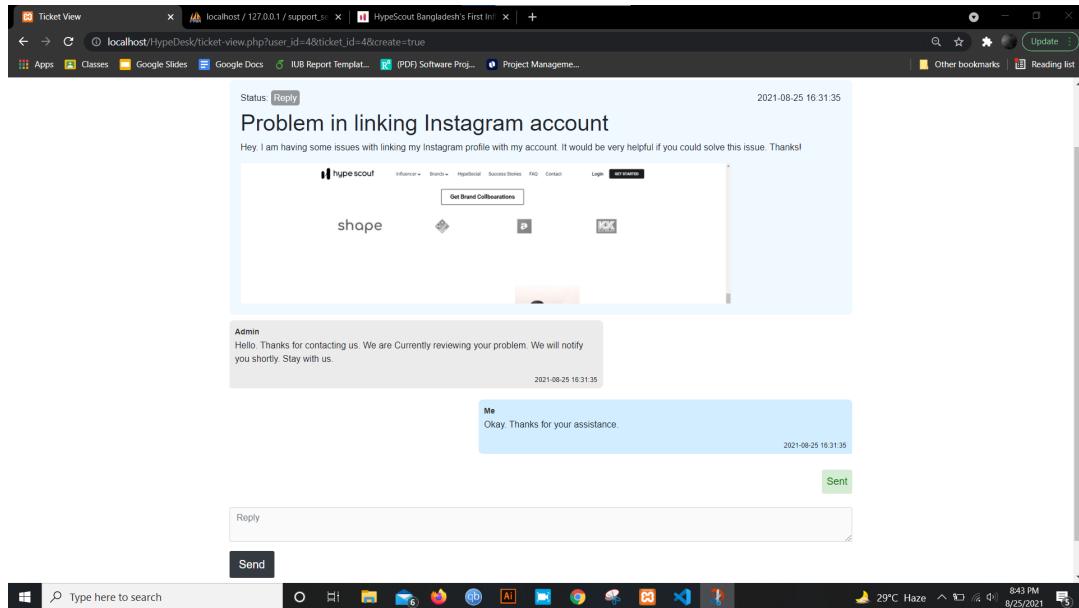


Figure 5.16: User's reply to query

After receiving admin's reply, user can again send a message to the admin. This will visually become like a chat-thread.

5.4.3 Architecture

For HypeDesk the MVC architecture has been used. MVC is basically the Model View Control architecture. Each component of this architecture has a specific role. The lowest level is known as the Model, and it is responsible for data maintenance and logical data handling. Because the model is linked to the database, anything we do with data will be reflected in the model. The model component is where data is added or retrieved. It responds to the request from the controller. The View component is in charge of data representation. It creates the user interface, or UI, for the user. So, in a web application, the HTML/CSS section is the view component. The data acquired by the model component is used to construct views. The Controller is considered the main component of this model because It functions as a middleman between the views and the model by allowing them to communicate. It is basically done with PHP coding.

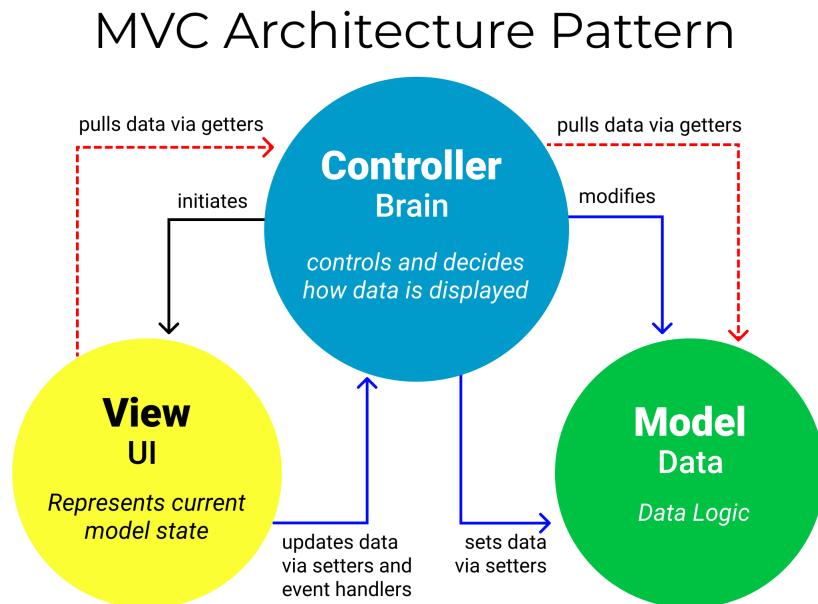


Figure 5.17: MVC Architecture model

Chapter 6

Results & Analysis

After the development of the system, several bugs were discovered during the program's testing. This was a small inconvenience that was fixed immediately. Test cases were documented when these issues were resolved. It is always very important to test a system after the development phase before finally deploying it for general use. Software testing checks whether new software is safe, accurate, and of high quality. The process of ensuring that the developed system meets all the requirements is known as approval. Software testing's main purpose is to detect faults in the application. All test cases were justified using testing approaches. The testing was done on a local server. Before the final deployment, the system will be tested again, and if necessary required changes will be made. Here I am adding a few screenshots of some of the processes that have been tested to ensure performance accuracy.

Login with wrong password/email:

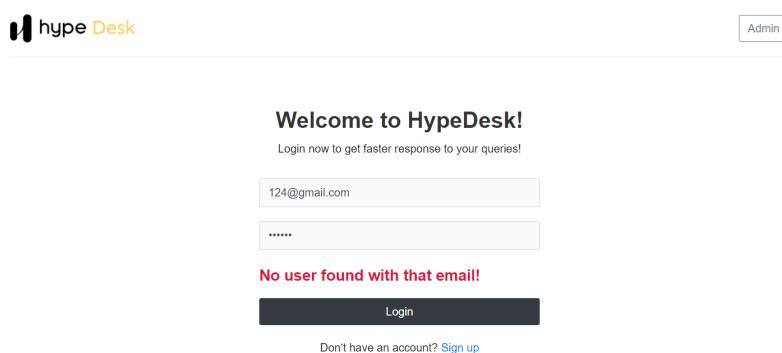
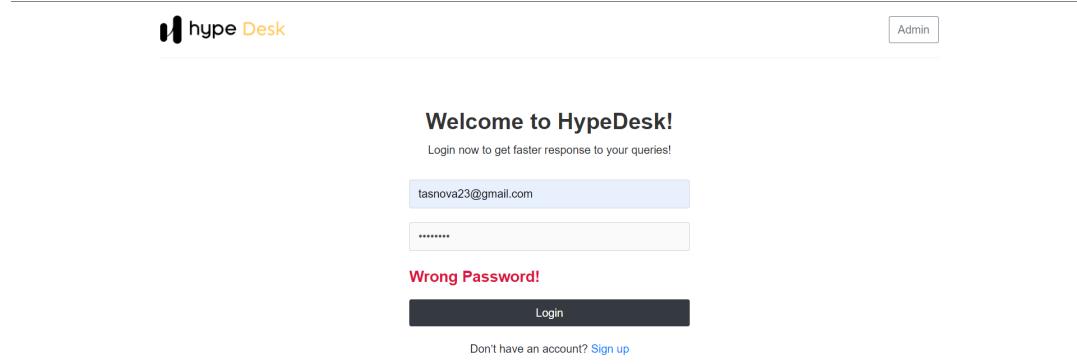


Figure 6.1: login with wrong email

When a user tried to log in with a non-registered email, the system detected it and showed an error. This indicates that the authentication system is working correctly.



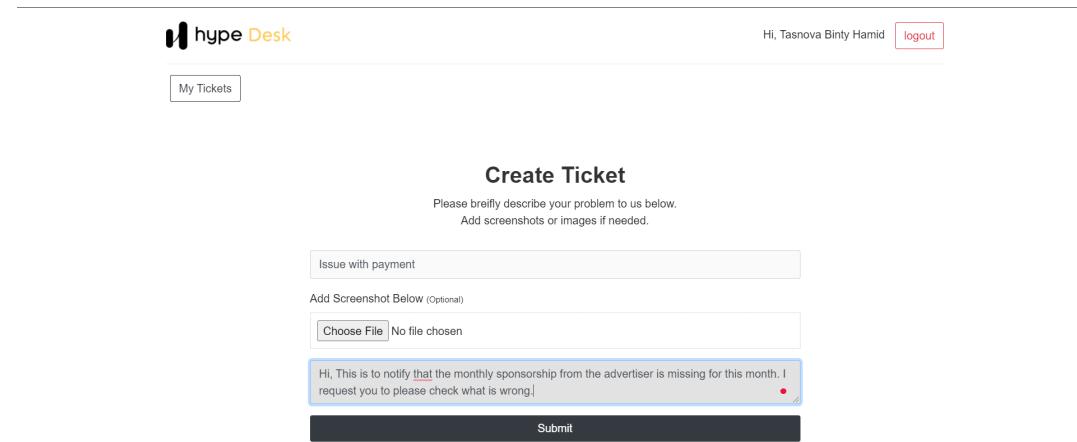
The screenshot shows the HypeDesk login interface. At the top, there's a logo and a "Admin" button. The main area has a heading "Welcome to HypeDesk!" and a sub-instruction "Login now to get faster response to your queries!". Below this are two input fields: one for email containing "tasnova23@gmail.com" and one for password containing ".....". A red error message "Wrong Password!" is displayed above the "Login" button. At the bottom, there's a link "Don't have an account? [Sign up](#)".

Figure 6.2: login with wrong password

When a user tried to log in with a non-registered password, the system detected it and showed an error message. This indicates that the authentication system is working correctly.

For determining the accuracy of HypeDesk, some specific tasks were tested with required inputs. For a better understanding of the whole process flow of the system step by step, screenshots are given below from user query submission to receiving admin's reply.

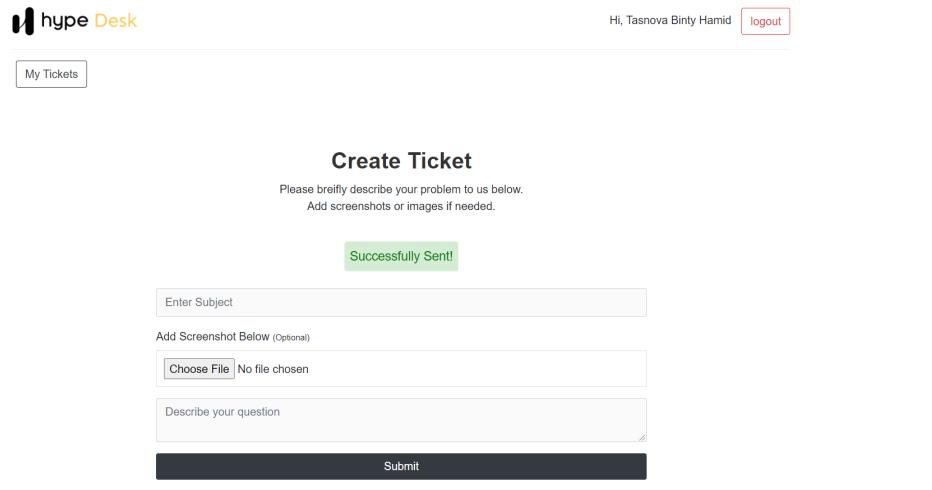
Step 1: After successfully logging in, the User will fill up necessary inputs and submit the ticket.



The screenshot shows the "Create Ticket" page. At the top, it says "Hi, Tasnova Binty Hamid" and has a "logout" button. Below that is a "My Tickets" button. The main form has a title "Create Ticket" and instructions "Please briefly describe your problem to us below." and "Add screenshots or images if needed.". There are two input fields: one for "Issue with payment" containing "Issue with payment" and another for "Add Screenshot Below (Optional)" with a "Choose File" button and a message "No file chosen". At the bottom, there's a text area with a message "Hi, This is to notify that the monthly sponsorship from the advertiser is missing for this month. I request you to please check what is wrong!" followed by a "Submit" button.

Figure 6.3: User submitting a ticket

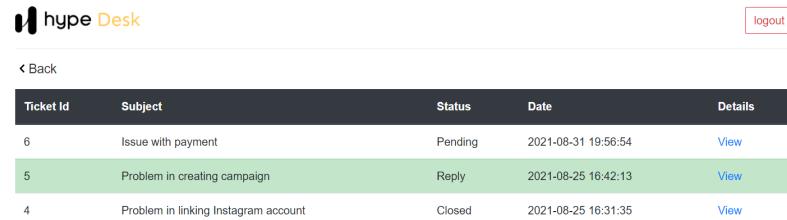
Step 2: After the ticket is successfully submitted a success message will appear.



The screenshot shows a web application interface for creating a ticket. At the top, there is a logo for 'hype Desk' and a user greeting 'Hi, Tasnova Binty Hamid' with a 'logout' button. Below this, a 'My Tickets' button is visible. The main section is titled 'Create Ticket' with the sub-instruction 'Please briefly describe your problem to us below.' A note says 'Add screenshots or images if needed.' A green success message box displays 'Successfully Sent!' above the input fields. There are three input fields: 'Enter Subject' (empty), 'Add Screenshot Below (optional)' (with a 'Choose File' button and a message 'No file chosen'), and 'Describe your question' (empty). A large black 'Submit' button is at the bottom.

Figure 6.4: User ticket Successfully submitted

Step 3: User can view all their sent tickets by selecting “My Ticket”. The ticket table will contain all the tickets submitted by the user with time and status. They can also view the ticket details.

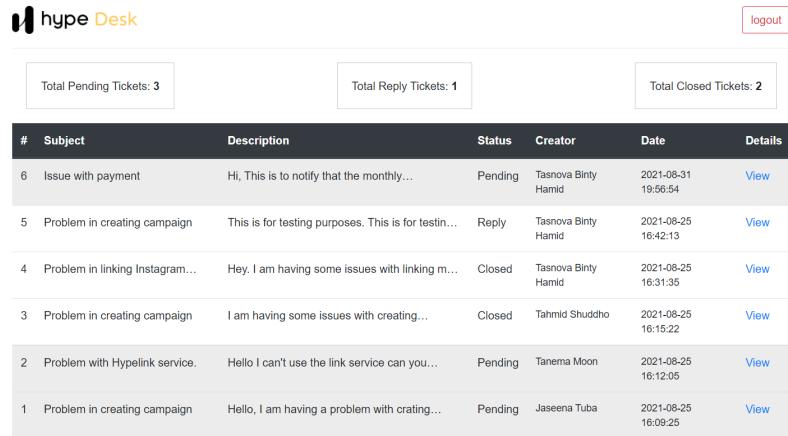


The screenshot shows a table of submitted tickets. At the top, there is a 'Back' link and a 'logout' button. The table has columns: 'Ticket Id', 'Subject', 'Status', 'Date', and 'Details'. There are three rows of data:

Ticket Id	Subject	Status	Date	Details
6	Issue with payment	Pending	2021-08-31 19:56:54	View
5	Problem in creating campaign	Reply	2021-08-25 16:42:13	View
4	Problem in linking Instagram account	Closed	2021-08-25 16:31:35	View

Figure 6.5: User ticket table

Step 4: After the user submits a reply it will appear in the admin's ticket table. The status of the new ticket will be assigned pending and as long as the ticket is not replied the row of that ticket will remain grey.

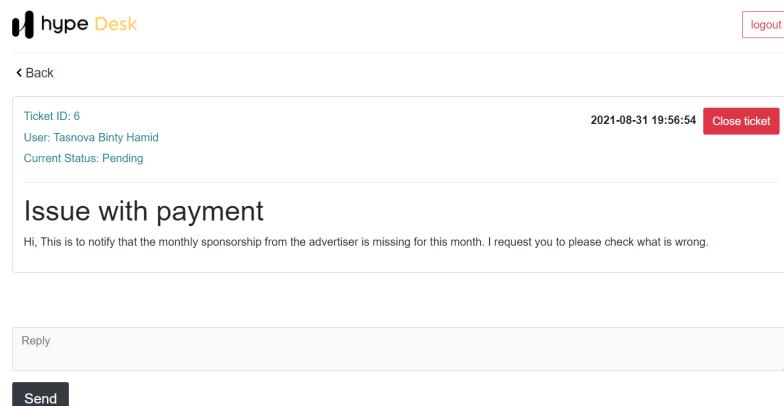


The screenshot shows a ticket management interface titled "hype Desk". At the top, there are three summary boxes: "Total Pending Tickets: 3", "Total Reply Tickets: 1", and "Total Closed Tickets: 2". Below these is a table with the following data:

#	Subject	Description	Status	Creator	Date	Details
6	Issue with payment	Hi, This is to notify that the monthly...	Pending	Tasnova Binty Hamid	2021-08-31 19:56:54	View
5	Problem in creating campaign	This is for testing purposes. This is for testin...	Reply	Tasnova Binty Hamid	2021-08-25 16:42:13	View
4	Problem in linking Instagram...	Hey, I am having some issues with linking m...	Closed	Tasnova Binty Hamid	2021-08-25 16:31:35	View
3	Problem in creating campaign	I am having some issues with creating...	Closed	Tahmid Shuddho	2021-08-25 16:15:22	View
2	Problem with Hypelink service.	Hello I can't use the link service can you...	Pending	Tanema Moon	2021-08-25 16:12:05	View
1	Problem in creating campaign	Hello, I am having a problem with crating...	Pending	Jaseena Tuba	2021-08-25 16:09:25	View

Figure 6.6: Ticket table of Admin

Step 5: Admin will be able to view the ticket details by clicking “view” from the ticket row and see all the ticket details including the user’s name, received ticket’s ID, the current status of the ticket, and sending time.



The screenshot shows a detailed view of a ticket. At the top, it displays the ticket ID (6), user (Tasnova Binty Hamid), and current status (Pending). To the right, there is a timestamp (2021-08-31 19:56:54) and a red "Close ticket" button. Below this, the ticket subject is listed as "Issue with payment". The ticket description reads: "Hi, This is to notify that the monthly sponsorship from the advertiser is missing for this month. I request you to please check what is wrong." At the bottom, there is a "Reply" input field and a "Send" button.

Figure 6.7: Admin view ticket details

Step 6: Next admin will investigate the issue and send an appropriate reply to the user. After sending a reply, a success message will appear.

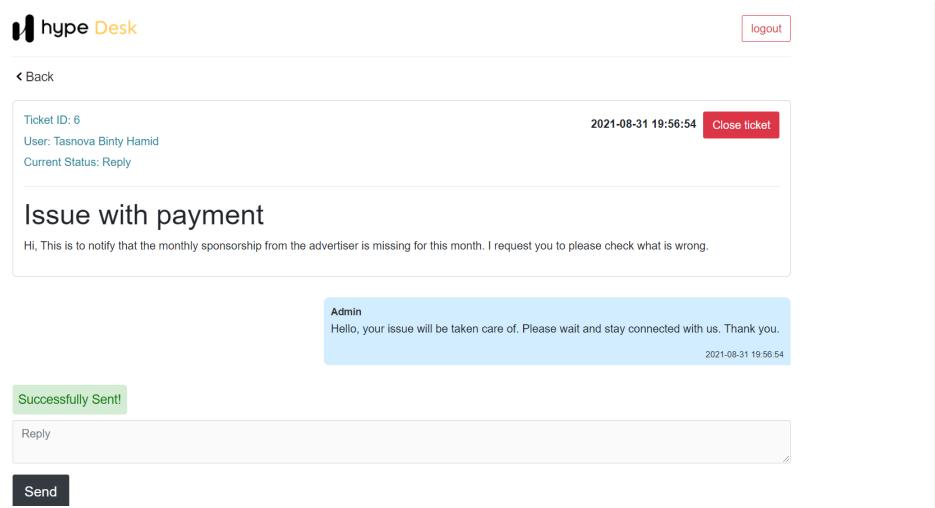


Figure 6.8: Admin replying to a ticket

Step 7: When the user receives a reply from admin to their ticket the ticket row will turn green which will work as a notification indicator. The row will remain green until the admin closes the ticket.

The screenshot shows a table of tickets. The columns are: Ticket Id, Subject, Status, Date, and Details. There are three rows:

Ticket Id	Subject	Status	Date	Details
6	Issue with payment	Reply	2021-08-31 19:56:54	View
5	Problem in creating campaign	Reply	2021-08-25 16:42:13	View
4	Problem in linking Instagram account	Closed	2021-08-25 16:31:35	View

Figure 6.9: User's updated ticket table

Step 8: The user will be able to send a reply to the admin again if necessary. A success message will appear after the message is sent.

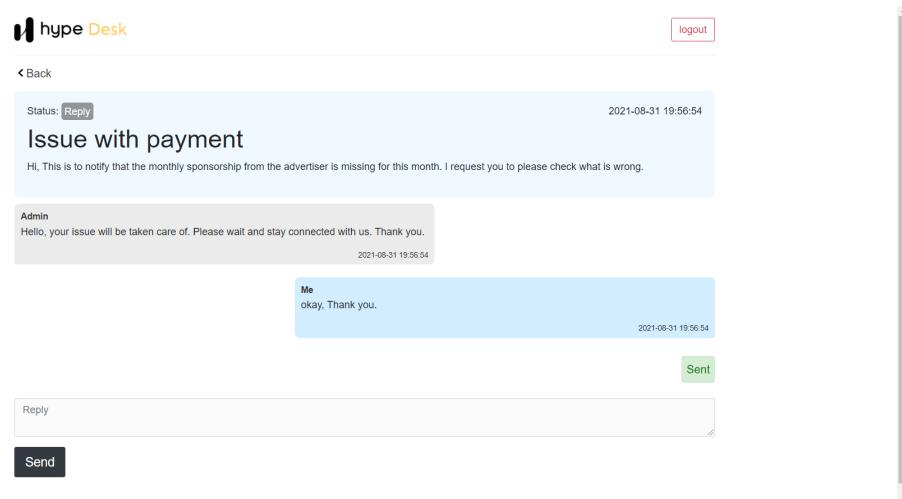


Figure 6.10: User sending a reply

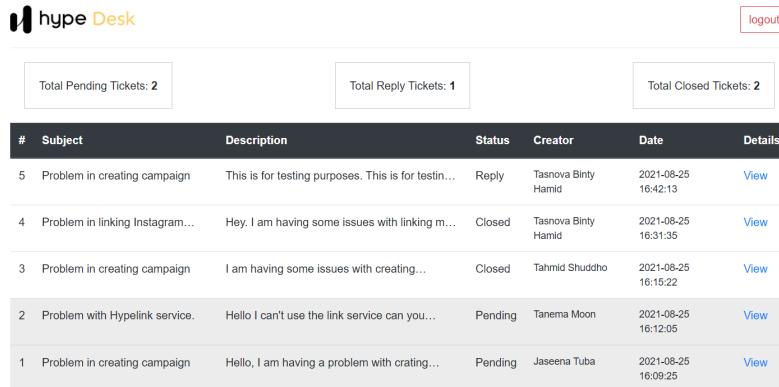
Ticket status and count update

Step 1:

Total Pending Tickets: 3	Total Reply Tickets: 1	Total Closed Tickets: 1				
#	Subject	Description	Status	Creator	Date	Details
5	Problem in creating campaign	This is for testing purposes. This is for testin...	Pending	Tasnova Binty Hamid	2021-08-25 16:42:13	View
4	Problem in linking Instagram...	Hey, I am having some issues with linking m...	Reply	Tasnova Binty Hamid	2021-08-25 16:31:35	View
3	Problem in creating campaign	I am having some issues with creating...	Closed	Tahmid Shuddho	2021-08-25 16:15:22	View
2	Problem with Hypelink service.	Hello I can't use the link service can you...	Pending	Tanema Moon	2021-08-25 16:12:05	View
1	Problem in creating campaign	Hello, I am having a problem with crating...	Pending	Jaseena Tuba	2021-08-25 16:09:25	View

Figure 6.11: Admin's Ticket table before ticket reply

Step 2:



The screenshot shows a ticket management interface for 'hype Desk'. At the top, there are three summary boxes: 'Total Pending Tickets: 2', 'Total Reply Tickets: 1', and 'Total Closed Tickets: 2'. On the right, there is a red 'logout' button. Below these, a table lists individual tickets with columns for '#', 'Subject', 'Description', 'Status', 'Creator', 'Date', and 'Details'. The table contains six rows of ticket data.

#	Subject	Description	Status	Creator	Date	Details
5	Problem in creating campaign	This is for testing purposes. This is for testin...	Reply	Tasnova Binty Hamid	2021-08-25 16:42:13	View
4	Problem in linking Instagram...	Hey. I am having some issues with linking m...	Closed	Tasnova Binty Hamid	2021-08-25 16:31:35	View
3	Problem in creating campaign	I am having some issues with creating...	Closed	Tahmid Shuddho	2021-08-25 16:15:22	View
2	Problem with Hypelink service.	Hello I can't use the link service can you...	Pending	Tanema Moon	2021-08-25 16:12:05	View
1	Problem in creating campaign	Hello, I am having a problem with crating...	Pending	Jaseena Tuba	2021-08-25 16:09:25	View

Figure 6.12: Admin's Ticket table after ticket reply and closing

When the admin Replied and closed any ticket, the ticket status and count change accordingly. This indicates that this function is working properly.

From the above step by step discussion with screenshots of the system, we can see that all of the tasks performed were successful and had no bugs. As all functions promised by this system is working exactly as it was supposed to, so we can determine from the test that it was successful. Before the final deployment, the system will be tested again, and if any bugs are found it will be dealt with accordingly.

Analysis of Front-end and Back-end:

While developing HypeDesk I tried to maintain these standards of UI design. User Interface (UI) Design is concerned with anticipating what users may need to do and ensuring that the interface contains features that are simple to access, understand, and utilize in order to assist those actions. Interaction design, graphic design, and information architecture are all combined in UI. The basic requirement of a standard UI design is that we should keep the interface simple, we should maintain consistency and use common UI elements, be purposeful in page layout, use color and texture strategically, Use typography to create hierarchy and clarity, etc. The UI design of the system HypeDesk is kept very minimal and simple, there are no extra elements other than what the user needs in the system. The ticket table and dashboard of the user and the admin has been made by maintaining a similar theme. The color and fonts used are also minimal and easy to the eye of the user. The input forms are also described by texts so that users can understand

where they should write anything. The components are also arranged with care to help draw attention to the most important information while also facilitating scanning and reading.

While developing the system the basic standards of coding were maintained. HTML, CSS, PHP, and MySQL were used to develop this system. Coding standards are sets of rules and principles that define a programming language's programming style, techniques, and methods. The basic coding standards are appropriate naming convention, organizing files and folders separately, maintaining formatting and indentation, defining classes and functions, Documenting and commenting where needed. The naming convention specifies how we should name our packages, classes, methods, variables, and so on. For HypeDesk, appropriate naming was used so that it becomes easy to understand which function does what and which folders contain a particular file. Using standard indentation and formatting is very important because this kind of big project contains thousands of lines of codes and without proper formatting, spacing, and indentation anyone can get lost and can have difficulty understanding the code. After coding a certain function or procedure, I included short comments so that the next time I review my code or my company supervisor sees it, he can easily review it. So, from the above discussion, it can be understood that the system design and coding of HypeDesk have been done by properly maintaining the basic standards and rules.

Chapter 7

Project as Engineering Problem Analysis

7.1 Sustainability of the Project/Work

To discuss the sustainability of this project, first, we need to understand what the term "project sustainability" means. Sustainability in a project is the ability to keep the system up to date and maintain it in a timely manner. All of the software and the website must be kept up to date. In the current time, we see many businesses hire external developers to make software or website. But in HypeScout, they have built every bit of their website on their own. During my internship there I was also a part of the developer team and I learned a lot from them. They trusted me and assigned me with this project which they will later integrate with their main website. The seniors of the developer team have always guided me through every step of the project so their requirement was always clear to me. As this project is done by the internal team of the company, it will be much easier to maintain rather than maintaining someone else's work. So HypeDesk will always be under constant monitoring. The team is constantly reviewing the workflow to see how it can be made easier and more convenient for the user, as well as how time can be saved here rather than on their former platform (email). This project will be updated efficiently when a new feature is added and monitored regularly.

7.2 Social and Environmental Effects and Analysis

Social effects: A help desk ticketing system is a real game-changer for businesses because it allows them to convert customer queries into tickets that can be tracked from beginning to end. Any company can produce excellent products and services, but if clients do not receive assistance when they are experiencing problems that are not being fixed, the company will have a problem. Customers are more likely to depart a brand if

they don't feel valued or if their complaints aren't answered quickly. Because it makes it easier for the brand to build meaningful relationships with its customers, the client support ticketing system Hypedesk plays an important role in instilling such confidence in customers socially. Customers assist improve sales by recurrent sales closures, which adds to the revenue generated for business growth and development, creating a snowball effect. This expands their social reach and leaves a positive effect on society.

Environmental effects: Because of the ongoing COVID issue, almost every company has relocated its service to the web sector. Despite the fact that HypeScout is an online business platform, it frequently necessitates face-to-face meetings with clients to discuss transactions and resolve any questions they may have. However, due to the country's current predicament and frequent lockdowns, it has become impossible, to address client inquiries. In this case, HypeDesk can come as an aid to ease the situation. This web-based platform will replace the face-to-face meetings between the clients and employees which will help in reducing social gatherings leaving a positive effect on the environment.

7.3 Addressing Ethics and Ethical Issues

when we create a website, as a developer we are supposed to address technical questions such as functionality and project specifications although it is not the first thing we have in mind. But what we often overlook is how software and technology touch people's lives on a personal level, with the ability to improve or deteriorate them. Because technology has become such an integral part of our daily lives, it is impossible to separate it from the ethical issues that it raises. They influence how we consume and create. Some of the common ethical issues that are faced by developers were kept in mind when doing this project are,

- Customers' data protection: Because of the sensitive information that our clients entrust us with, personal data security is one of the most pressing concerns in the digital age. So data security was given the utmost priority while making this project.
- Copyright ownership: As the code of this project is the property of the company HypeScout, without their permission, no one can reproduce, distribute, display, or edit it. As an intern before working on their company project, I had to sign the copyright agreement of the company.
- Managing database security: The backend server and database is only accessible to the senior developers of the company. As an Intern, I did not have any direct

7.3. ADDRESSING FEATURES AND ETHICAL ISSUES IN ENGINEERING PROBLEM ANALYSIS

access to their database for the sake of their database security as written in the license agreement. The data stored can be considered safe and secure because they are hosted in the cloud and can only be accessed using their credentials.

Chapter 8

Lesson Learned

8.1 Problems Faced During this Period

As currently there is frequent lockdown all over the country so I am doing work from home. It is unfortunate that I did not get a chance to work in an office environment and sometimes becomes difficult to keep in communication with the office. I had some difficulty in understanding the requirement of the project that my company supervisor has assigned me. It was quite challenging to complete the project scheduling and resource allocation accurately as this project management thing is very new for me. Some works were being delayed than the planned schedule as now it is not possible to work in an office setting. Rather than planning, it was more difficult to maintain the project plan properly. The project I am working on is a way for the company for evaluating my skills. So at times, I got very overwhelmed and stressed. I struggled a lot in between the designing and coding phases. This made me realized the urgency of enhancing my coding skills, so I had to work very hard to cope up with the pressure. There were a lot of new things that I had to implement for this project. It was really difficult for me to learn and implement those in such a short period of time. Also, During the testing phase some problems were identified in the system like login issue, image attachment issue etc. Moreover the whole working as a part of a team under supervision was quite a challenging experience for me.

8.2 Solution of those Problems

My company supervisor has added me to the office chat group so that I can keep track of what is going on. This has somewhat solved the communication problem. Scheduled meetings in Google meet with my seniors about the doubts I had, has helped me to understand the project structure better. It was not easy for me to maintain the project plan without any guidance. So my company supervisor guided me through each step of the plan. He checked on me regularly through virtual meetings or phone calls, which

helped me to keep track of what is going on with the project on a daily basis. At the very beginning of my internship in my training period I tried my best to learn as much as I can before starting the coding phase of this project. My supervisor of the company helped me with all the necessary resources that I needed for this project. My seniors were also open to any help I needed during that time. The issues found in the testing were solved accordingly with proper guidance. Whenever I got stuck somewhere I took their suggestions and tried to implement those, this really helped me a lot.

Chapter 9

Future Work & Conclusion

9.1 Future Works

HypeDesk is the initial version of the companies' idea of their own client support ticketing system. It was mainly developed to understand the role of this support system and how it can improve their business. It's still in its infancy, similar to a demo version of a later complete support system. The future work of this project involves integrating HypeDesk with the main website of HypeScout so that when clients click the contact us button in the main website they will be redirected to HypeDesk. Soon the company will launch its own mobile app. They have planned to add this support system to their mobile application for easy access of the user. Some new features like , push notification indicator, ticket sorting and grouping, and an improved interface design will be implemented in the future for a better user experience.

9.2 Conclusion

As Computer Science and Engineering(CSE) have many branches it was quite difficult for me to determine what I am truly passionate about. But while doing the core courses through the four years of my academic journey, my interest grew more in the web development sector. That's why I decided to do an internship in this sector so that I can earn real-time experience in this field working with a professional team and gather communication and interaction skills. I have always wanted to be a part of the corporate world. So, I took my first step through this internship. At the very end of this internship, I can say that this was a very wonderful experience for me. During this internship, I have learned a lot of new things from my seniors. The IT team of HypeScout is full of energetic and helpful individuals who helped me to cope up with the office environment although I have mostly worked from home due to frequent lockdowns. I was introduced to new technologies and their implementations. Working on a project under team supervision

made me sharpen my existing coding skills and enhance them. This made me more confident and helped me identify my strength and weaknesses which will help me survive in the corporate world in the future. In conclusion, I would like to pay my gratitude to every individual who has helped me during this crucial period to make it an enjoyable experience.

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