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CS6PO5 Final Year Project

Interim Report (Venue Booking System-Web Application)

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Abstract

This report is the based on a web-application development on the topic named ‘Venue Booking System’. The report is divided into various Chapters: Introduction, Background, Development, Analysis of Progress and Future Work.

The introduction of the report basically introduces the topic and describe aims and objective of the project. The second part of the report discusses on the background of inventing the project and necessary reasearches done on the topic. Thirdly in Development part of the report, we dicuss about the methodologies to use and various design and diagram formed to better understand the system. Finally, analysis of progress and future work includes work done and work pending respectively.

Therefore, it provides an overall view of process of development of web-applications.

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1. Chapter 1:

1.1. Introduction

It is a known fact that Nepal is an amalgam of more than 60 ethnic groups, and therefore Nepalese have a lot of extravagant festivals and celebrations connected to the diverse religion, tradition and social events. In recent years, however, this culture of celebration can be seen growing to a point where we can say that Nepalese have started to over-celebrate life events, with over the top celebrations that are more extravagant than the next public events of previously be privately celebrations. (Lonely Planet, 2017)

The celebration of *Teej* for this year- one of the most important festivals for Hindu women- can be cited as a prime example of this growing trend. Previously considered a one-day affair, this year women of various age groups and ethnicities were found gathered in banquets and halls to eat *Dar*- a meal consumed by women a day before the day of *Teej*, weeks before the given day. (Bajracharya & Ghimire, 2017)

Similarly, Nepalese have found many other traditions and celebrations, including Christmas, Bridal Shower, Baby Shower, Bachelor/bachelorette Parties, Birthdays, Anniversaries, to celebrate as a public affair like never before. In all of this, the demand for the public event venues has increased dramatically. It can be seen that restaurants, banquet halls and other party palaces have started to provide event management services to cater to the growing demands for hassle- free celebrations. Such event venues provide easy access for consumers to manage and reduce hard work by dividing the activities to the staff members of the venue. Holding an event in the venue also provide comfort and space to meet attendees and conduct their activities easily and with better company.

The event venues in Nepal, are growing every day, each providing a different value than the rest to match with the demands of the customers. However, due to lack of proper marketing and publicity for such event venues on online platforms, customers still primarily depend on the recommendations provided by a close friend/family or Word of Mouth marketing.

The main goal of event venues is to sell and benefit from their space. The world is online. The whole world is using the internet to discover everything they need to know. As a result, online booking system has also made its must-have necessity for every platform. Lacking on the online presence, every business firms are sure to miss out great resources and opportunities. Without the aid of online booking system, the client has to rely on phone calls and walk-ins to make reservations. The existing online booking system for different platforms has given clients the freedom to choose and reserve places and things according to their preferences. In turn, it has helped maximizing the sales of the dealers and not limiting their working hours which helps to provide better services and amenities to their customers. For example, in case of hotel bookings, studies show that a 24/7 online booking system greatly increased the number of booking for the hotel. (Asenova, 2018) (Siguencia et al., 2018)

In context of the aforementioned growing trend and popularity of Event Venues and the gap within the trend, I believe that a web-based program that pools the information of all the venues that provides event management services in Kathmandu, in the beginning and can be expanded to Nepal in later phase, and allows customers to choose among the selection a right fit for their needs can solve the problem.

1.2. Aims and Objectives

The main aim of this project will be to build a web-based platform that allows pooling of the customers and the service providers, Event Venues, so facilitate easy and dependable access to required information and service. On the side of the customer, they can be able to view all potential Event Venues in one place and compare it against one another to find the best fit for their event. On the side of the service, provider, they will get a marketing platform to improve public visibility and reach larger number of customers without having to spend money on designing individual websites.

The project will include three different users: customer, owner and admin.

The major aims of the project are as follows:

Customer:

- To create an application where customer which allows viewing all nearby venues, and sorting them in a few different criteria based on price, location, etc.
- Get necessary information including: price range, accommodation number area of the venue etc.
- Get invoice and do payment.
- Schedule and view calendar to reserve venue for the day.
- Create invitation and send through email.
- Post and read reviews and recommendations.

Dealer/ Owner of the venue:

- To manage the data of the venue and their customer.

- View orders and booking facilities.
- Manage Invoices.
- Get review and manage services.
- Post marketing and promotion schemes as well as promote various services.
-

Admin:

- To properly manage databases of customer and venues.

1.3. Document Overview

Chapter 1 'Introduction' of the document as the name suggests consists of introduction to the project. The main objective of the introduction is to give overall overview of the topic for the project. It provides aims and objective and problem statement along with the solution of the topic.

Secondly, **Chapter 2** of the document titled as the **'Background'**, consists of discussion of an overall research about the topic. It includes introduction to the **end user** of the product formed. Research and study on **similar syste**m is also done along with comparison of their features with our system to be developed.

Chapter 3, 'Development' consists of the subtopics, **System Architecture, Methodology** considered and chosen for the completion of the project and different **UML diagrams** designed. System Architecture defines the structure and behavior that the system would follow. Different methodologies were considered however only one was to be implemented in this project. This chapter includes ERD, Use Cases. Further, it includes Normalization method and **Wireframes** for the system.

Chapter 4 is **'Analysis of Progress'** which includes evaluation of what is completed and is yet to be completed. It discusses about the achievements and problems faced during the process of developing the application. Lastly, it includes possible solution to the project and goals to complete the project.

Chapter 5, 'Further Work' outlines the task remaining and plans to successfully complete the project.

2. Chapter 2: Background/ Literature Review

This section the report consists of research and review of similar application of the system.

2.1. About the End User (Reference to Appendix-B)

Through the survey conducted among the students and general people, we can assume many people has heard of online venue booking web application like hotel booking application but not particularly for an event venue booking. It is confirmed that people attend event at least once a year and to hold any kind of event would most likely visit the venue first in person. Hence, if we could provide all the important details of the venue, we could effectively reduce the necessity of visiting the venue before the event. Along with booking of the venue people seems to be willing to send an invitation online. They want real reviews of the venue and would be interested in trying the application in near future.

Although the survey does not show opinions of every people in the county, I believe that integration of online booking and online invitation in the project would be successful and be useful for managing important functions of people.

2.2. Project Elaboration

Over time with the evolution of internet and technology, running a business has significantly changed. The traditional method of agreeing the deal, jotting down the contract and signing the papers has been effectively converted to digitally clicking of the button and agreeing the conventions. Internet has helped change and advance in many fields of business and services. Amongst many industries, internet-based booking platform for venue has grown tremendously.

Online booking system, at its basic is a software that allows customer to reserve and pay for activities of services directly through a website. It allows the customer to book, choose preferred date of booking, method of payment etc. The system also significantly reduces the workload of the customer by minimizing the manual work of visiting the venue for booking purposes. Furthermore, the system also not only helps the user(customers), it also allows the staffs to effectively decrease paper work and manage their space well. Therefore, with the rapid use of internet-based booking system, the venue industries have been recognized as one of the most profitable industries in many countries.

The main objective of the venue booking systems is to reserve a venue for functions, parties, weddings etc. whenever user find available and preferable venues. The system would provide all the available venues and allow user to view details of them.
In the case of absentees of the booking system, for example, if the user wants to book a wedding venue, the first task of the user is to visit the owner of the wedding hall, then he would have to discuss the price ranges and services offered by the hall. The final task would be negotiating the deal for booking the hall.
The manual tasks mentioned above, which would be time consuming, are absolutely uprooted b y the simple application of the booking system. (Ghule et al., 2019) (Sam, 2017)

Therefore, with the well development of this application, citizens of the country will be able to easily reserve the preferred venue for the event among lists of venues without prior visits to different venues. While in case for the venue managers, this application would be helpful to effortlessly manage their venue as well as promote their business.

2.3. Technical Aspects

Development of Web application is the process of creating a dynamic website combined with server-side programming. The server-side programming delivers functionalities such as interacting with users, connecting to back-end databases, and generating the output to the browsers. There are two main categories of coding, scripting and programming for creating Web Applications, the Client-Side Scripting/Coding and Server-Side Scripting/Coding. The Client-Side Scripting/Coding includes Scripting technologies like HTML, CSS JavaScript. The Server-Side Scripting/Coding includes technologies like PHP, Python, ASP.NET etc. (Bernard, 2019)

Below are the resources required for the development of the application

- Hardware Required: Laptop, internet connection
- Software Required: Visual Studio Code, Python, Database
- For Frontend: HTML, CSS along with bootstrap will be used to code for front end of the application.
- For Database: The web server XAMPP will be used for managing database. This server is configured with all features required for the Apache Web server. It also provides MySQL database (actually MariaDB), PHP and Perl. For this project, MySQL will be

user. MySQL is a Structured Query Language based on relational database management system (RDBMS) supported by Oracle. (Apache friends, 2019)

- For Backend: Django framework of Python will be used for the development of the project. Django is one of the famous and popular frameworks for the development of web application. It is an open-source framework for backend web application based on Python. Django follows MVC (Model-View-Controller) or MVT (Model-View-Template). The architecture separates the input, processing and output of an application.

  The framework works with most major database. Hence, it would work well with MySQL and would be suitable any size of project. (djangostarts, 2019)

  Also, with the use of system architecture testing such as: unit testing of the project would be easier.

2.4. Similar System and Research

Venue management system is one of the fundamental systems for operation of buildings such as halls, conference rooms etc. Some of the popular mobile and web application for venue booking and management system along with their comparison are as follows:

Software	Devices Supported	Business Size	Prominent Features
MeetingPackage	Web-Based	SM, Freelancer	Booking Management, Catering Management, Customer CRM, Event Management, Reports, Sales Management, Staffing Management, User Management
Skedda	Windows, Mac, Linux, Android, iPhone/iPad,Web-based	SML	Advanced Scheduling, Booking Engine, Booking Management, Calendar Management, Online Reservations, Reservations Channels, Service & Support
Function Tracker	Windows, Mac	SM	Multi-Track Events, Manage Event Workflows, Reporting and analytics, Registration Integration, Survey Reporting, Search Venues, Support & Training, Custom Branding, Mobile Event App
ThunderTix	Windows, Mac, Linux, Android, iPhone/iPad, web-based	SML	Branding Control, Customer Portal, Event Marketing, Event Ticketing, Membership Management, Mobile Ticketing, Online Ticketing, Patron Management, Payment Processing, seating Management
Omnify	Windows, Mac, Web-based	SML	Built-in marketing tools, Central database, Multi-Store Management, Promotions Management, Shipping Management
Priava	Web-based	SML	Booking Management, Catering Management, Customer CRM, Event Management, Reports, Reservations Management
Planning Pod	Windows, Web-based	SML	Multi-Track Events, Manage Event Workflows, Reporting and Analytics, Travel Management, Registration Integration, Survey Reporting, Search Venues, Support & Training, Conferences/ Conventions, Volunteer Management, Custom Branding, Mobile Event App

Figure 1: Comparison of different venue management systems.

2.4.1. Skedda

Skedda is a management software that allows thousands of venues to serve online booking and scheduling facility to their clients. The software provides pricing, booking conditions and maintain calendar to provide appropriate date of reservation. The highlight of the application is: booking calendar, online booking, payment gateway integration, create bill and invoices, customer management. etc. (GoodFirms, 2020) (Skedda, 2020)

Some pages of Skedda are as follows:

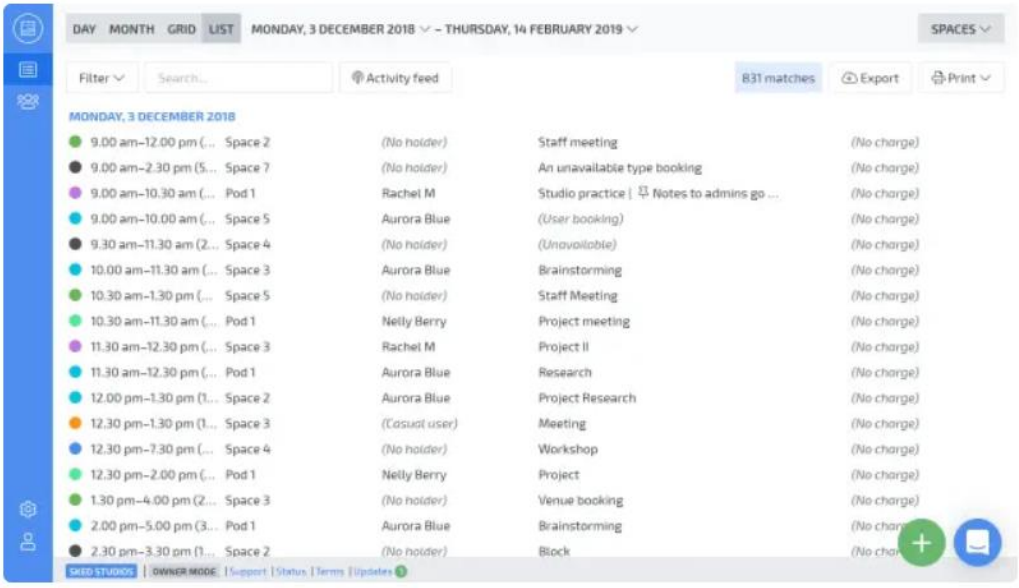

Figure 2: Skedda: Booking Calendar

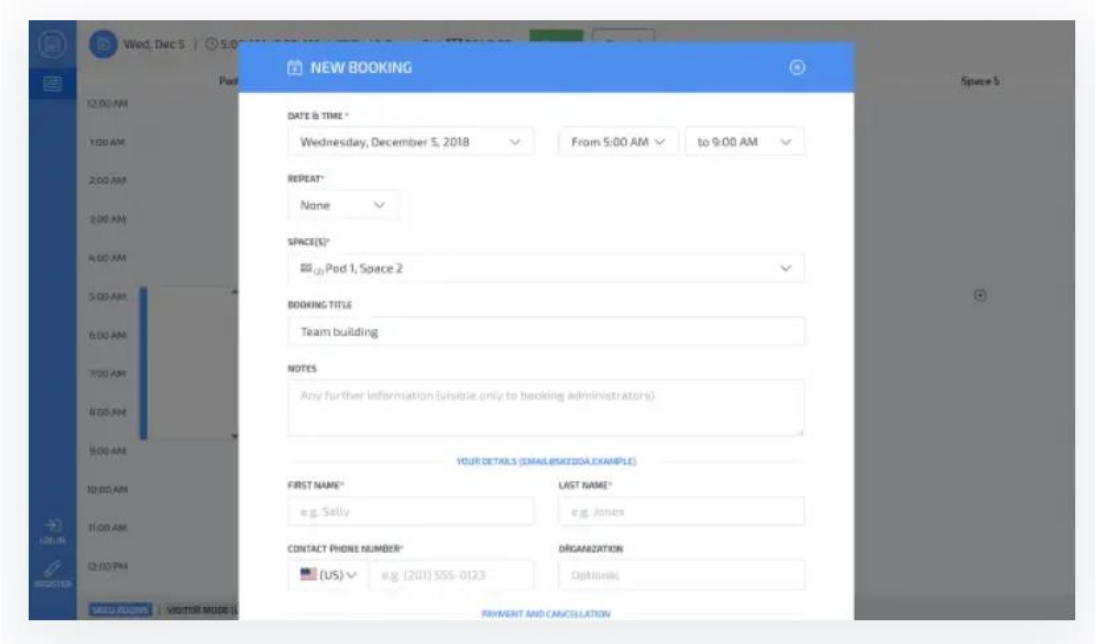

Figure 3: Skedda: Online Bookings.

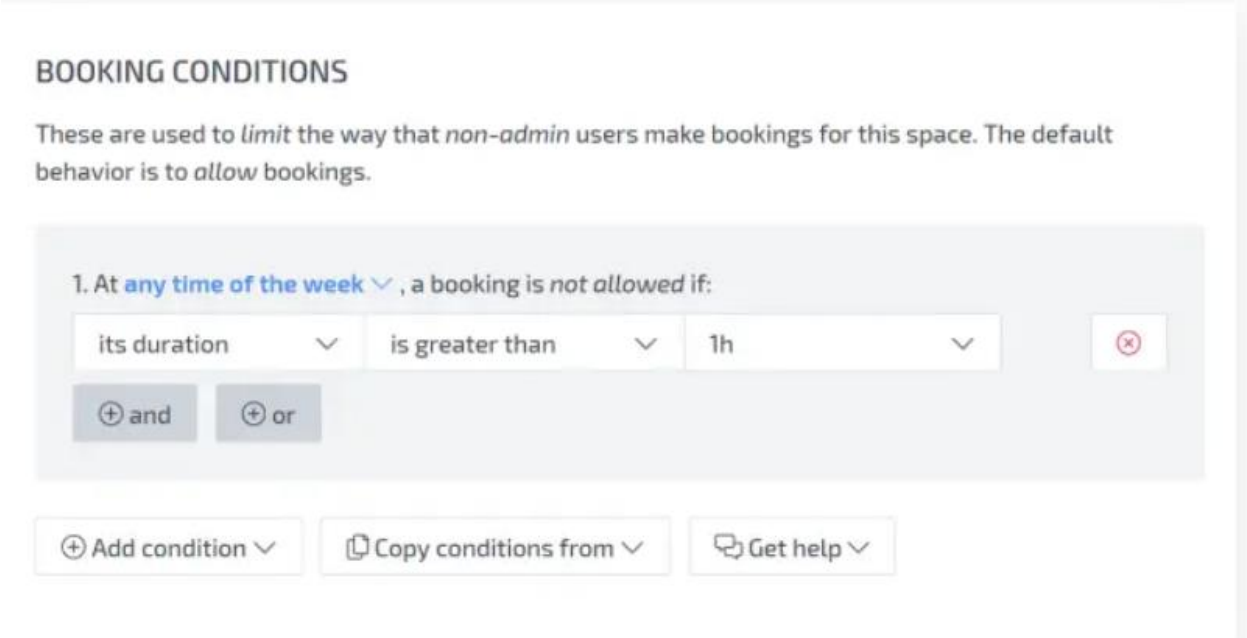

Figure 4: Skedda: Rules and Policy.

2.4.2. Eventbrite

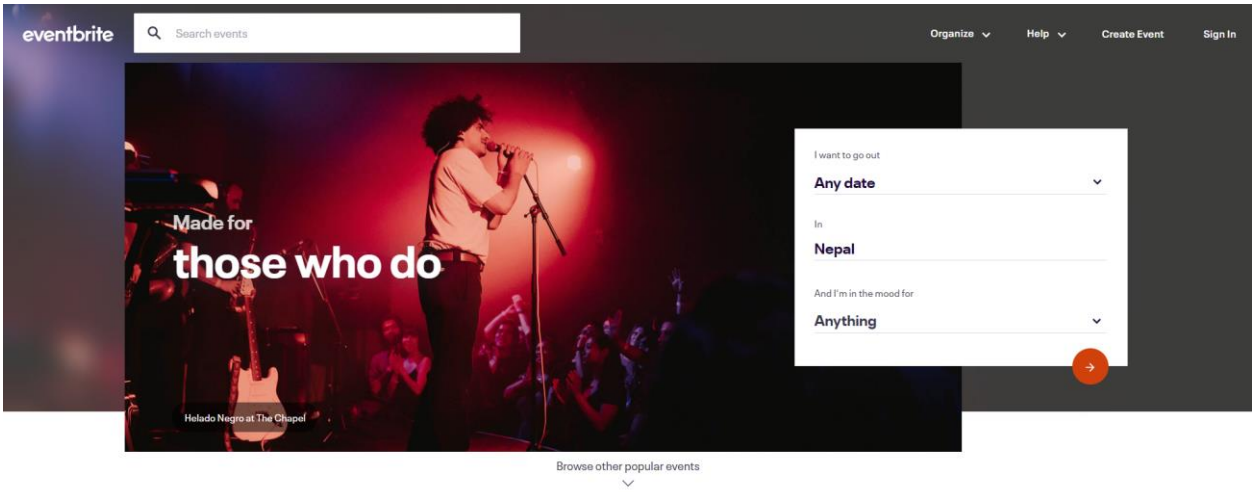

Figure 5: Eventbrite

Eventbrite is an online event-booking and planning site. The page allows user to create an event page, register attendees, track attendance, and sell tickets for the event. The web app helps to promote the event of the event holder and clearly manage the event. The major feature of Eventbrite are as follows:

- Automated reminders
- Dashboard
- Custom Venue maps
- Event dashboard
- Event promotion
- Event registration and ticketing
- Online Payment
- Speakers profile

2.4.3. Booking.com

Booking.com is one of the most popular website and mobile app available in 40 different language that allows reservation of more than 1,555,000 hotel rooms worldwide. The major plus point is the software provide user with effective filtering options and help select a room from more than 28,618,191 across the world. At booking.com, travelers can access to a large selection of places to stay, which includes apartments, vacations, homes, 5-stars luxury resorts etc. Along with providing useful management functions, the app is also providing user-friendly and a powerful user interface.

Further, the application, establishes contracts with the hotels listed on the platform and takes certain commission on each booking through the page. Finally, the page also provides administrator's tools, analytical tools and dashboards for accommodation providers that help them flourish their business. (Siguencia et al., 2018)

Some pages of the application are as follows:

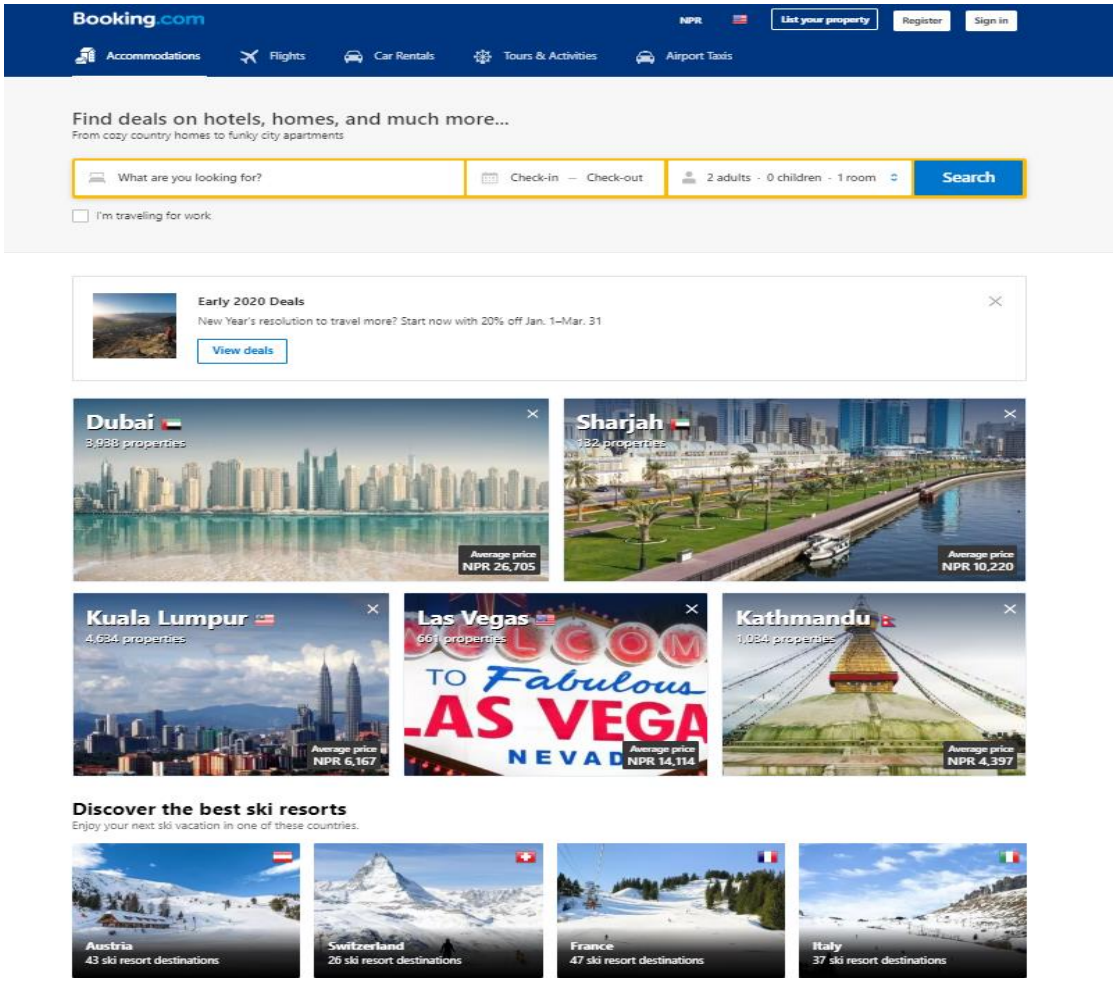

Figure 6: Booking.com: Landing Page.

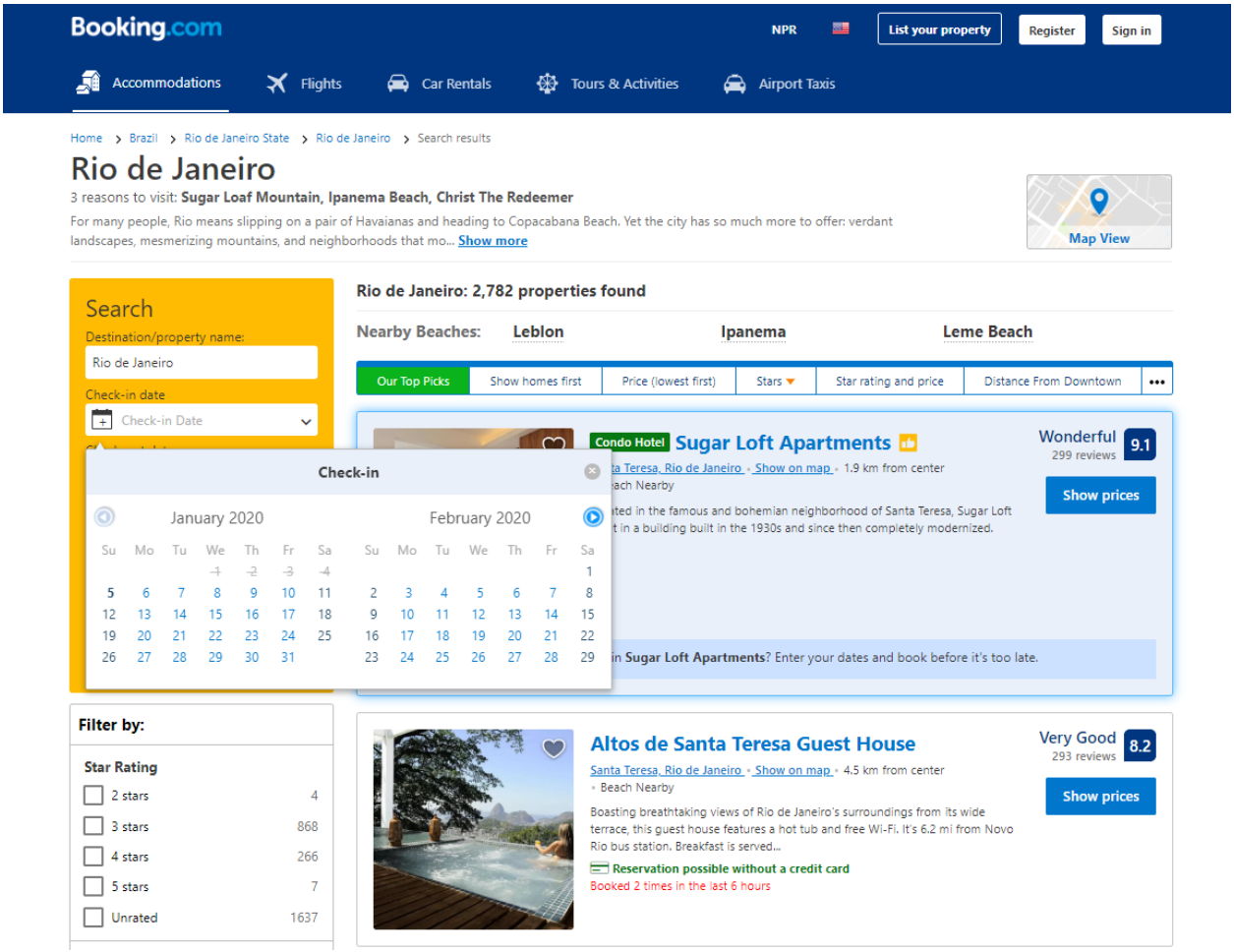

Figure 7: Booking.com: Available venues and booking dates.

2.5. Comparison of similar system with our system

	Our System	Booking.com	Eventbrite	Skedda
Listing Venue to the web site	Yes	Yes	Yes	Yes
Make Online Booking of Venue	Yes	Yes	Yes (Event)	Yes
Search venue by location	Yes	Yes	Yes	No
Online Payment	Yes	Yes	Yes	Yes
Customer Review	Yes	Yes	No	Yes
Online Invitation	Yes	No	No	No

Table 1: Comparison of similar system with our system.

3. Chapter 3: Development to date

3.1. System Architecture

The following diagram shows the architecture of system which will be followed by this project. The software design pattern comprises of three main components: Model, View and Template.

Model: Model mainly helps handle the database. The database to be used is MySQL. All the data would be stored in the Server MySQL database.

Template: The template is the presentation layer. The layer handles all user interfaces. HTML, CSS are comprised in this layer.

View: The view layer is used to execute the business logic and interact with model to carry data and render template. (JavaTpoint, 2019)

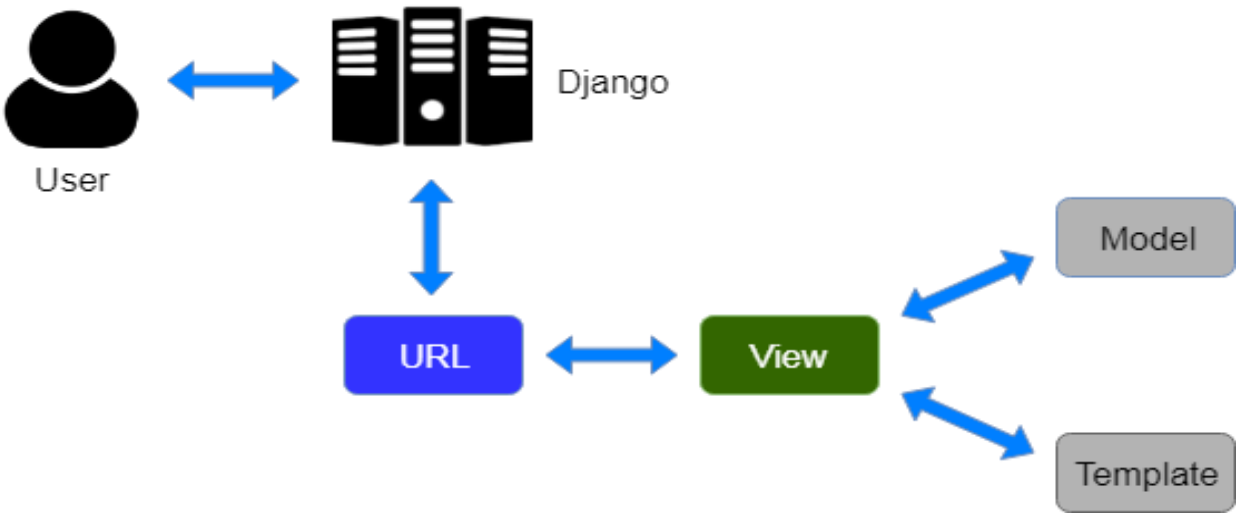

Figure 8: System Architecture: MVT.

3.2. Methodology

3.2.1. Considered Software Development Methodologies

3.2.1.1. Agile (Scrum) Methodology

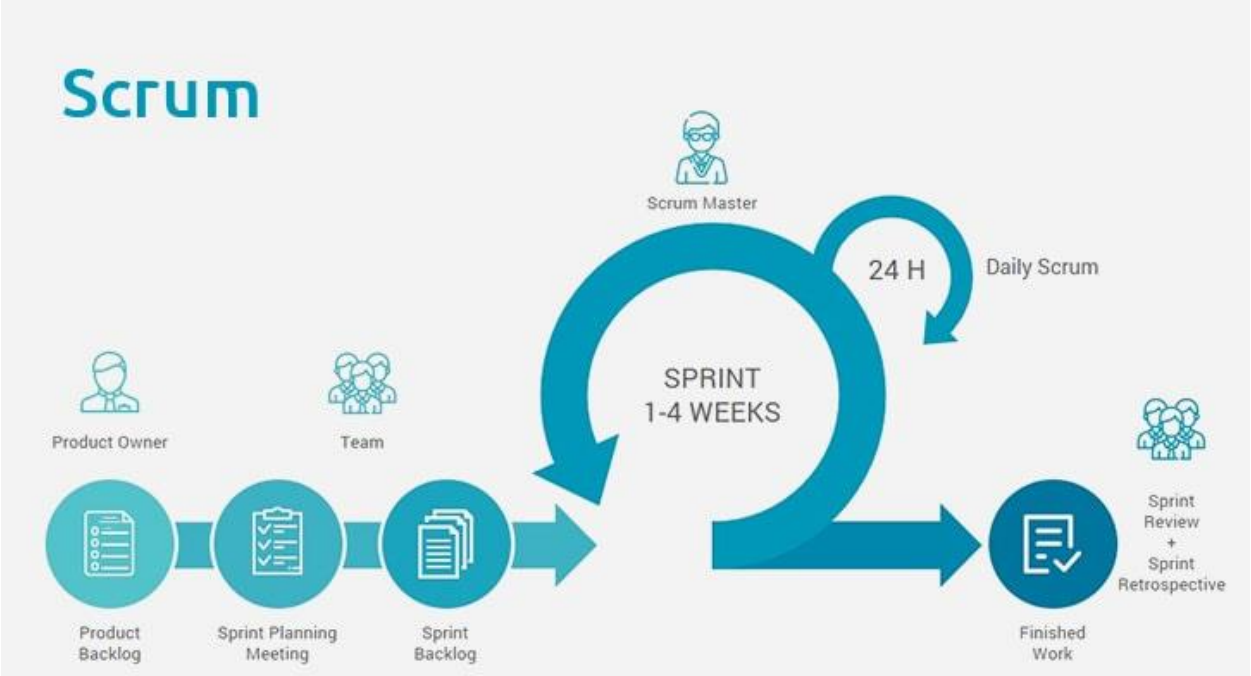

Figure 9: Agile Methodology (Scrum).

The first methodology considered for the project was Agile Methodology. According to review by Version One, 94% of organizations are already practicing agile in some form. Among many, Scrum is one of the most popular agile project management methodology. The methodology mainly focuses on identifying key features and helps to set goal at the start of each sprits.

The reason for considering this methodology are as follows:

- **Flexibility and adaptability:**

  Defining the requirement and design for different modules in the project is relatively a difficult task. Agile methodology is believed to be best-suited for uncertain environment.

It provides flexibility and adaptability to define and elaborate requirement and design as the project is in progress.

- **Lower costs:**

  Scrum ensures effective us of time. It being an agile methodology, accepts feedbacks and enables changes in requirements and designs according to the feedback. This allows reduction of unnecessary documentation and control requirements.

- **Quality:**

  In regular sprints, development is coded and tested. This ensures quality and make necessary adjustment to the project.

Reasons for not choosing Agile (Scrum) Methodology:

- It requires a **team environment**:

  Agile methodology heavily considers team work. It would be difficult to implement Scrum methodology for one-man project.

- The chances of project failure are high due to **lack of defined end- date**. (Regoli, 2019) (Chandana, 2019) (Cobb, 2019)

3.2.1.2. Waterfall Model

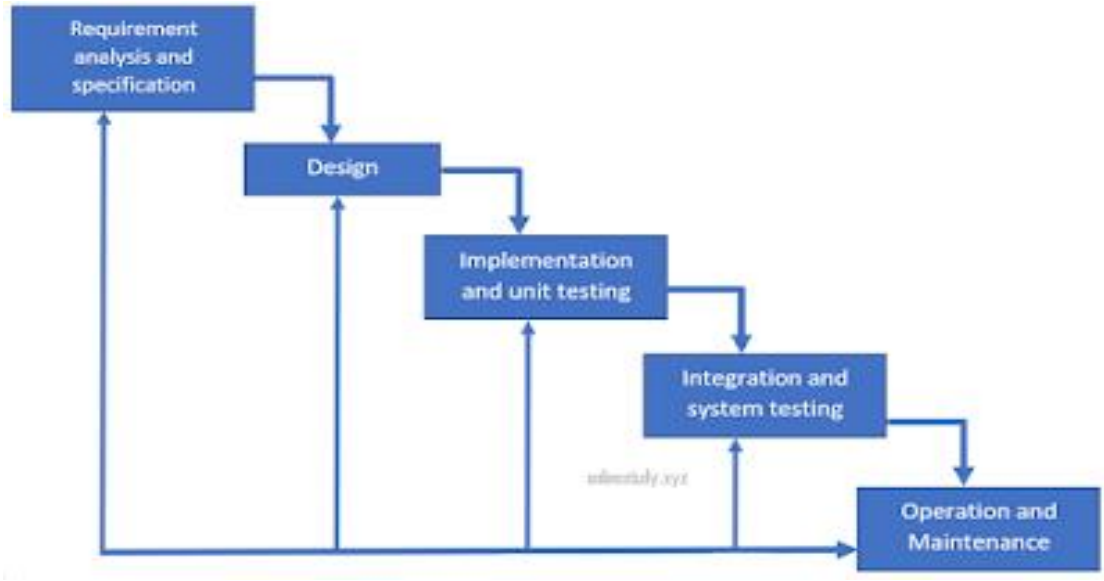

Figure 10: Waterfall Model.

Waterfall model is considered as a straightforward methodology which mainly emphasized that logical progression of steps be taken through the software development life cycle. It adopts a step-by-step nature which is simple and easy to understand and use.

The following are the reason for considering the methodology:

- **Requirement gathering and analysis:**

  Every requirement is clearly defined which helps to arrange tasks,

- **Proper documentation ad well understood milestones:**

  The process and documentation are clearly documented which helps to confirm quality of the project. With the completion of certain task milestones are considered. Hence, each stage consists of deliverables.

- **Works well for smaller projects and easy to understand and use.**

Reasons for not choosing Waterfall Model:

- Turning **back to other phases is not possible** in this model. It cannot accommodate changing requirements.
- **Delayed Testing Period:**

  Testing is not done unit quite late into the life cycle of this model. Bugs and errors are not discovered unit late into the process. Hence, may lead to failure of the project. (tutorialspoint, 2019) (Powell-Morse, 2016)

3.2.1.3. Prototype Model

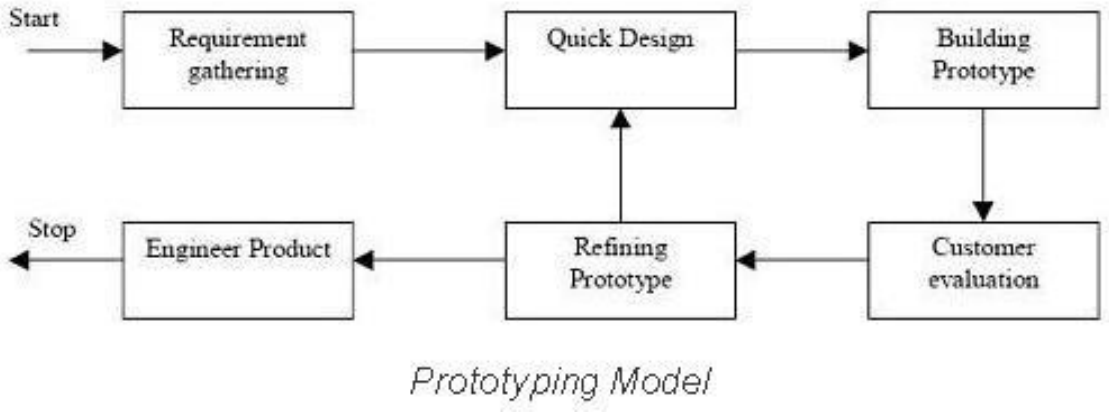

Figure 11: Prototype Model.

Prototype model is a software development model which believes in providing a surface overview of the final product before designing and developing the actual software. The prototype is developed based on currently known requirement from the client. The model is ideal when requirements are not fixed.

The following are the reasons why Prototype Model was considered:

- Following Prototype model would allow to visualize the end product of the system which would help to get quicker feedback for the actual development of the software.
- Missing functionality could be easily identified.
- Designs could be easily fixed and changed.

Reasons for not choosing Prototype:

- The project has a deadline, therefore changing requirement could cause failure to development of the project.
- The model is usually implemented with project involving client, the final year project does not include any client. (TryQA, 2013)

3.2.2. Chosen Methodology

3.2.2.1. USDP

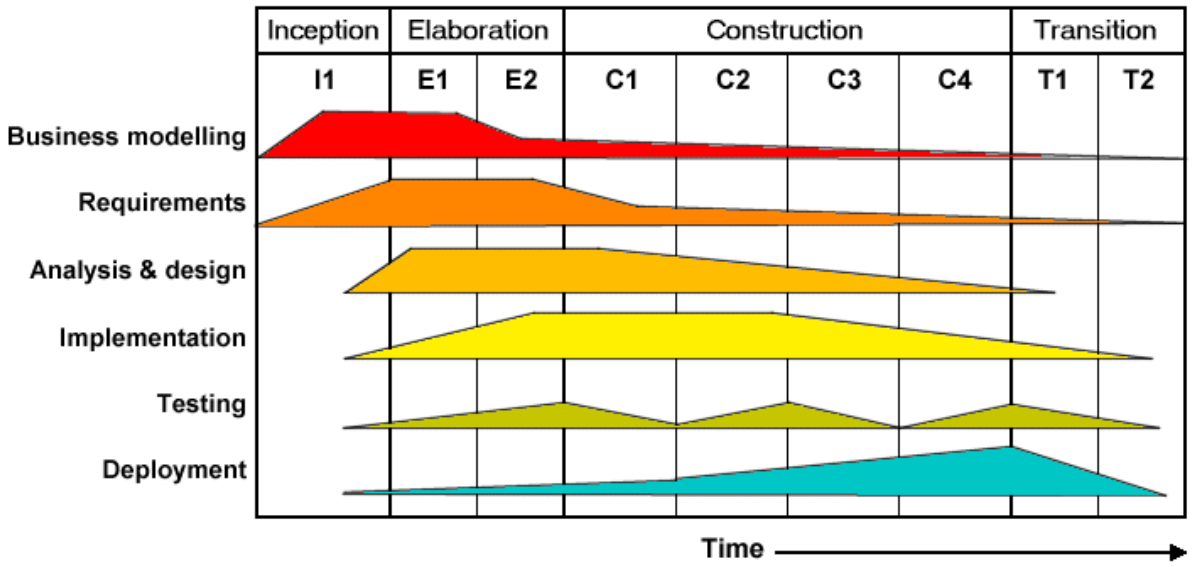

Figure 12: Lifecycle of USDP Model.

Unified Software Development process also known as Agile Unified Process is an incremental software development process. The process includes four phases: Inception, Elaboration, Construction and Transition. In the initial stage called **Inception**, various scopes and objectives of the project is discussed. The phase would help recognize risks and also lays down both aims and objectives of the project. The **Elaboration** stage is the next stage that includes introduction of basic design of the system. The use case model developed in this phase would help capture functional requirements of the system and other conceptual diagrams would allow to plan the project for construction phase. After the process of collecting requirements, reviewing specification and designing the system, the software is to be developed. The primary goal of the **Construction** phase consists of series of short iteration, each resulting in software release. The

test such as unit testing, integration testing etc. are also conducted and reviewed. Finally, at the **Transition** phase the application is deployed. The software is maintained and finally submitted. (TechnologyUK, 2019) (Kendall, 2019)

The following are the reason to follow the USDP Model:

- The USDP Model allows iteration of the requirement. Each iteration could bring new outcome in case of unsatisfactory.
- The incremental approach of the methodology will allow us to break down the project into small and fruitful modules, which will help to build functional and distinctive features in every small phase.
- The methodology is considered as simple and clear process that fits small development teams.
- In order to complete the project, the developer can contribute reduced integration time and effort. (Maja, 2017)

3.2.3. Use Case

A UML Use Case diagram is a primarily a graphical depiction of a system or a software requirement during its underdevelopment. The use case specifies the specific behaviour and interation among elements of the system. It is also used for system analysis to identify, clarify and organize system requirements.

The major goal of use case is to visually represent a design of the system from end user's perspective.

The use case diagram comprises of four components:

- Boundary: The boundary defines the system of interest in relation to world around it.
- Actors: The actors are the individuals involved with the system.
- Use Cases: The use cases are the specific roles playes by actors within the system.
- Communication link: This shows the relationship between an actor and the use case. (Visual Paradigm, 2019) (Margaret, 2015)

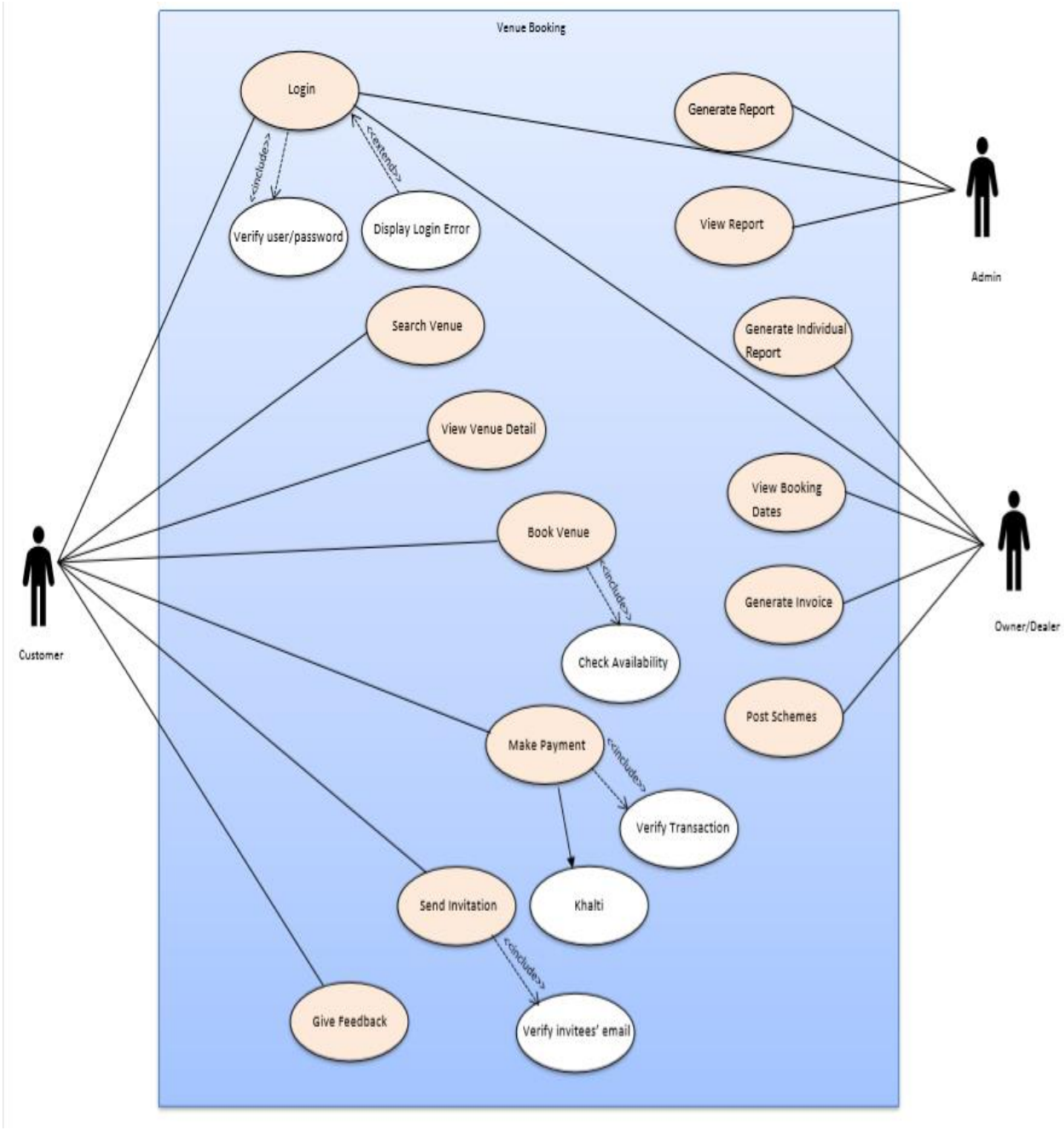

Figure 13: Use Case Diagram.

3.3. Wireframe

The layout and basic design of a webpage that demonstrates what contents and functionalities a page may include is known as a wireframe. It is used to provide visual understanding of a page early in the project to easily navigate to ensure all the terminologies and structures required for the web page. (experienceux, 2019)

- Landing Page:

Figure 14: Landing Page.

- Sign In page

Figure 15: Sign in Page.

- Invoice Page

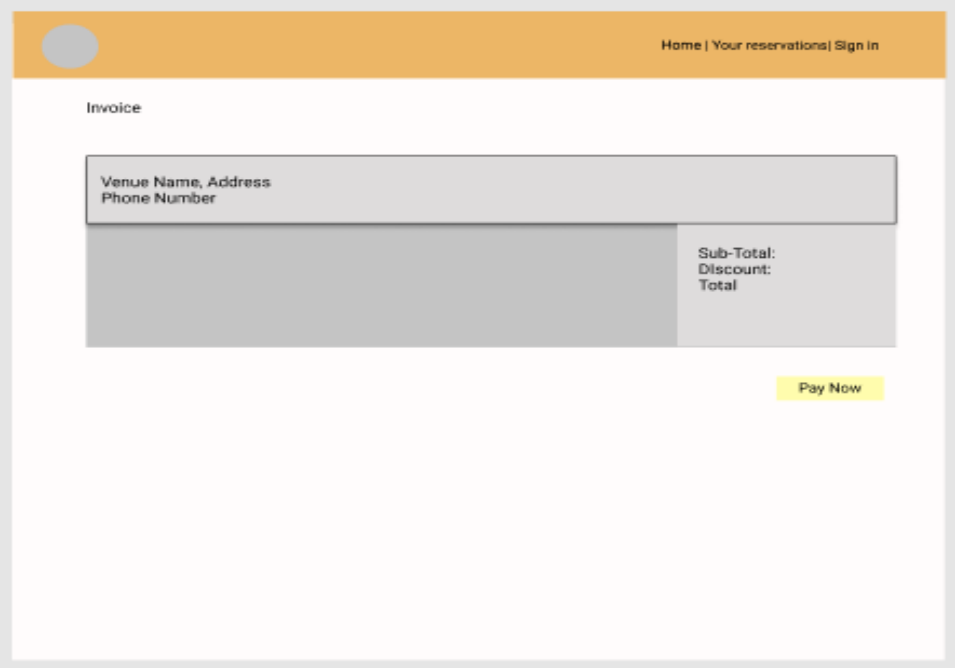

Figure 16: Invoice Page.

- Venue Details

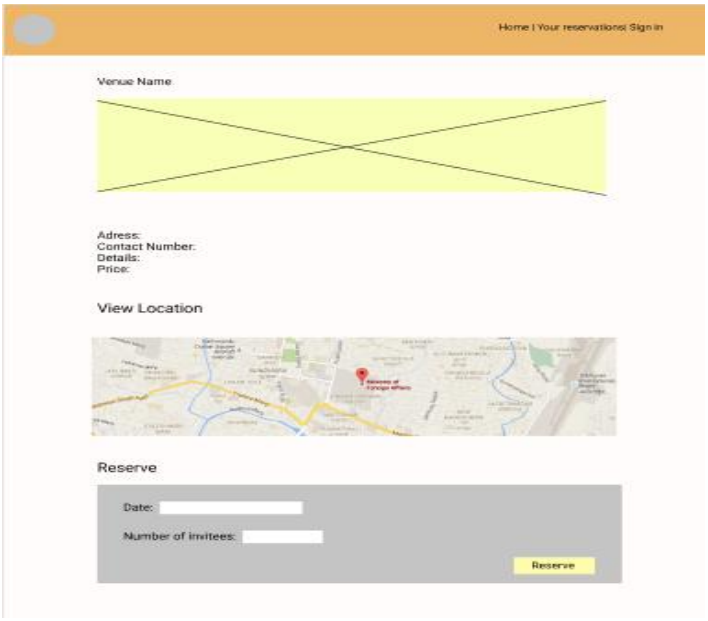

Figure 17: Venue Details Page.

- Dealer Registration

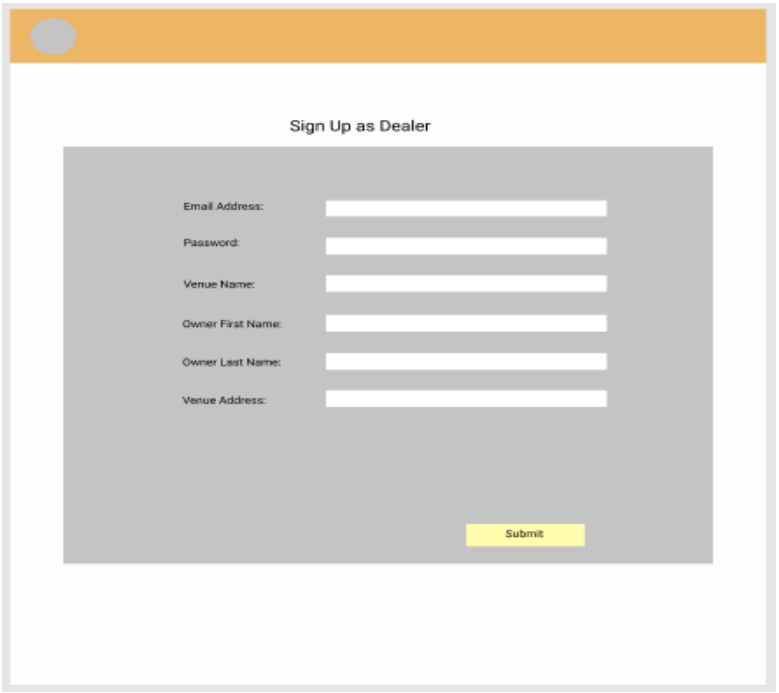

Figure 18: Dealer Registration Page.

- Venue Detail (Dealer)

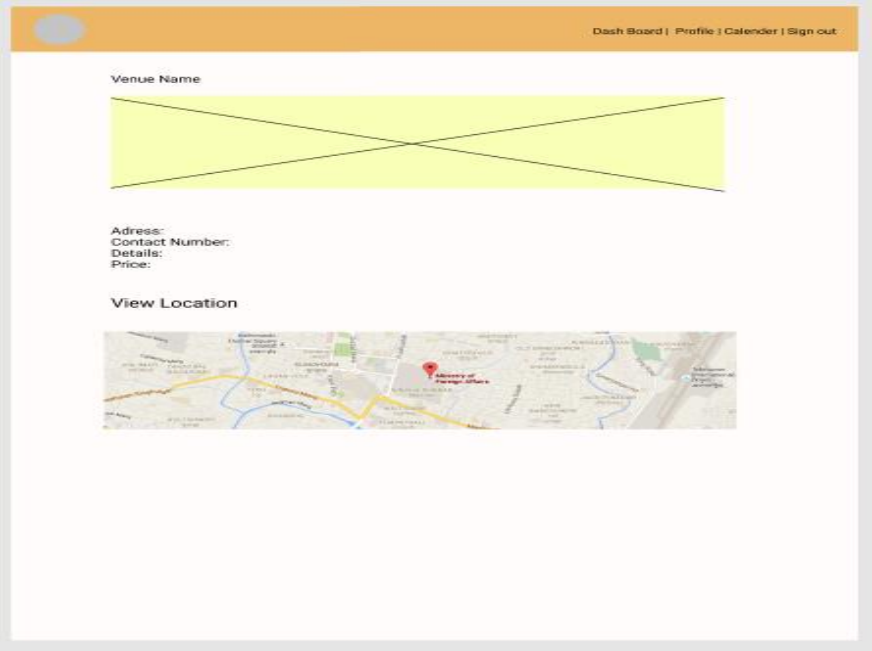

Figure 19: Venue Detail (Dealer).

- Calendar

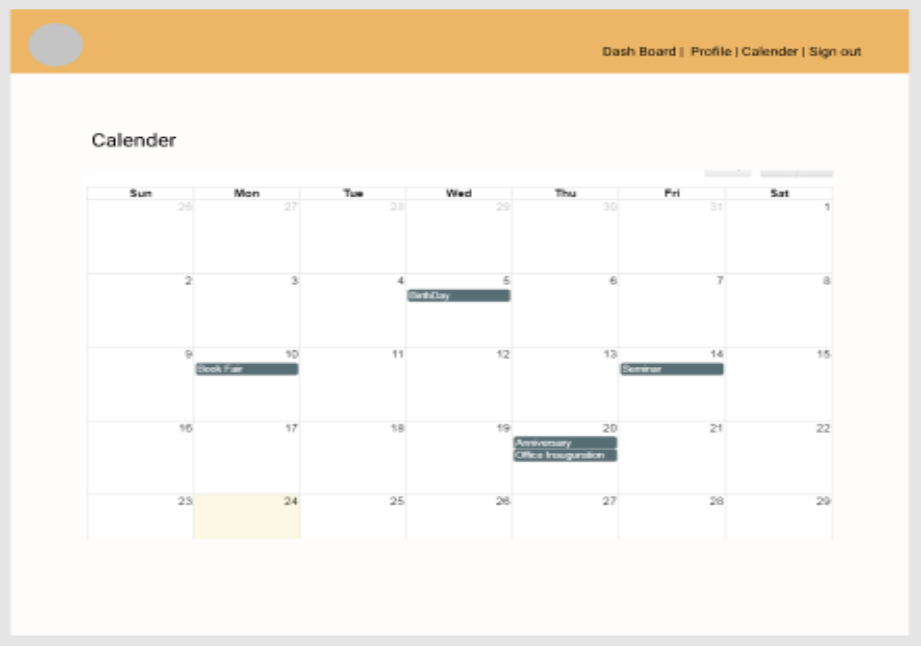

Figure 20: Calendar.

- Dashboard for Dealer

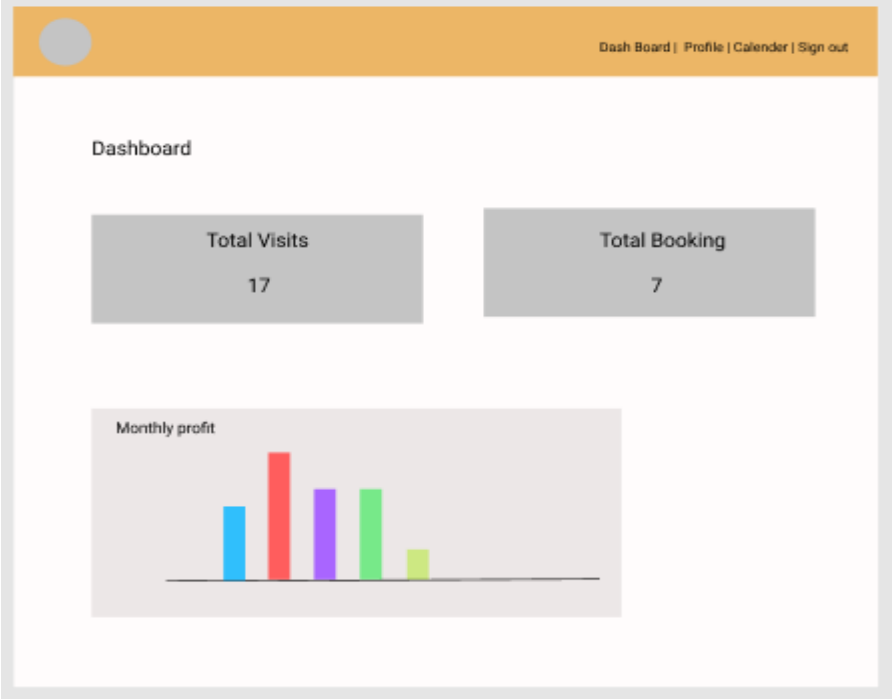

Figure 21:Dashboard for Dealer.

3.4. ERD

Entity Relationship Diagram (ERD) is a structural diagram for database design. The ERD consists of various symbols and connectors that shows: the system scope and the inter-relationship between the entities.

The purpose of ERD not only halts in data designing, it also helps debug challenging database issues and helps depict high-level business objects of the system. An ERD consists of various components: Entities, attributes and relationships.

- Entity: The ERD entities consists of definable things such as person (e.g. Customer), object (e.g. Payment), concept, or events.
- Attributes: The attributes also known as columns are the properties or characteristics of the entity.
- Connecting line: The lines that connect attributes shows relationship between entities and another entity. The relations are rented by different denotations. The notation styles are given below: (Visual Paradigm, 2019)

3.4.1. Initial ERD

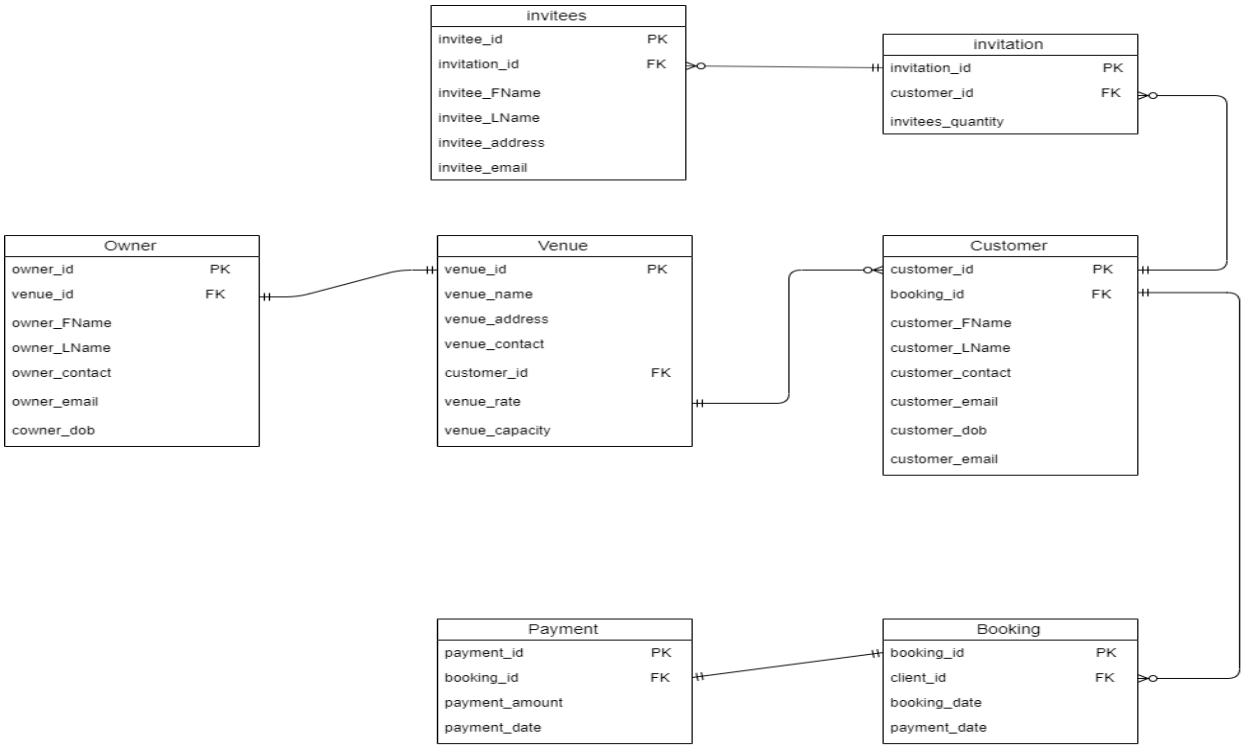

Figure 22: Initial ERD for venue booking system.

3.5. Normalization

UNF

1. In Unnormalized form, the table name is defined, and all the attributes of the table are listed.
2. Unique identifier is recognized for the table.
3. The repeating groups are listed within {}.

Venue (venue_id, venue_name, venue_address, venue_phoneno, venue_rate, venue_accomodation, venue_owner_id, venue_owner_phoneno, venueowner_email, venue_status_id, venue_status_type, { cust_id, cust_name, cust_email, cust_address, cust_phoneno, booking_id, booking_date, payment_id, payment_amount, payment_discount, payment_total { invitation_id, invitation_quantity, {invitees_id, invitees_name, invitees_email, invitees_address}},{feedback_id, feedback_desc}}, sceme_id, sceme_name)

1NF

1. To convert an unnormalized form to first normal form all the repeating groups are separated.
2. The unique identifier is carried forward to new relation from original relation. This maintains relation between original and new relation.

Venue-1 (venue_id, venue_name, venue_address, venue_phoneno, venue_rate, venue_accomodation, venue_owner_id, venue_owner_phoneno, venueowner_email, venue_status_id, venue_status_type, sceme_id, sceme_name)

Customer-1 (venue_id*, cust_id, cust_name, cust_email, cust_address, cust_phoneno, booking_id, booking_date, payment_id, payment_amount, payment_discount, payment_total)

Invitatiton-1 (venue_id*, cust_id*, invitation_id, invitation_quantity)

Invitees -1 (venue_id*, cust_id*, invitation_id*, invitees_id, invitees_name, invitees_email, invitees_address)

Feedback -1 (venue_id*, cust_id*, feedback_id, feedback_desc)

2NF

1. Partial dependencies are removed from the relation. All non-key attributes are fully functionally dependent on primary key and not on only part of primary key.
2. The relation is already in 2NF if the entity has only one attribute key.

Recognizing Partial Dependency and Removing them in table Customer:

- Venue_id, cust_id -> booking_id, booking_date, payment_id, payment_amount, payment_discount, payment_total
- Venue_id ->
- Cust_id -> cust_name, cust_email, cust_address, cust_phoneno

Recognizing Partial Dependency and Removing them in table Invitees:

- Invitees_id -> invitees_name, invitees_email, invitees_address
- venue_id*, cust_id*, invitation_id*, invitees_id->

Final Tables in 2NF:

Venue-2 (venue_id, venue_name, venue_address, venue_phoneno, venue_rate, venue_accomodation, venue_owner_id, venue_owner_phoneno, venueowner_email, venue_status_id, venue_status_type, sceme_id, sceme_name)

Cust-Venue -2 (Venue_id*, cust_id, booking_id, booking_ date, payment_id, payment_amount, payment_discount, payment_total)

Customer -2 (Cust_id, cust_name, cust_email, cust_address, cust_phoneno)

Invitatiton-2 (venue_id*, cust_id*, invitation_id, invitation_quantity)

Invitees-Venue -2 (venue_id*, cust_id*, invitation_id*, invitees_id*)

Invitees -2 (invitees_id, invitees_name, invitees_email, invitees_address)

Feedback -2 (venue_id*, cust_id*, feedback_id, feedback_desc)

3NF

1. All the transitive dependencies in the table are uprooted. The table is said to have transitive dependencies if any non-key attribute depends on another non-key attribute. Suppose A -> B and B-> C, then A-> B-> C has transitive dependencies (where A, B and C are the attributes).

   Finding transitive dependencies and removing them in table Venue:

   - Venue_id - > venue_owner_id- > venue_owner_phoneno, venueowner_email
   - Venue_id -> venue_status_id - > venue_status_type
   - Venue_id -> sceme_id -> sceme_name

   Finding transitive dependencies and removing them in table Customer-Venue

   - Venue_id*, cust_id -> booking_id, payment_id
   - booking_id -> booking_ date
   - payment_id -> payment_amount, payment_discount, payment_total

   Final Table in 3NF:

   Venue-3 (venue_id, venue_name, venue_address, venue_phoneno, venue_rate, venue_accomodation, venue_owner_id*, venue_status_id*, sceme_id*)

   Venue-Owner-3 (venue_owner_id, venue_owner_phoneno, venueowner_email)

   Venue-Status -3 (venue_status_id, venue_status_type)

   Venue-Scheme -3 (sceme_id, sceme_name)

   Customer -3 (Cust_id, cust_name, cust_email, cust_address, cust_phoneno)

   Invitatiton-3 (venue_id*, cust_id*, invitation_id, invitation_quantity)

   Cust-Venue-Booking-Payment- 3 (Venue_id*, cust_id, booking_id*, payment_id*)

   Booking-3 (booking_id, booking_ date)

Payment-3 (payment_id, payment_amount, payment_discount, payment_total)

Feedback -3 (venue_id*,* cust_id*, feedback_id, feedback_desc)

Invitation -3 (invitation_id, invitation_quantity)

Venue-Cust-Invitation-Invitees -3 (venue_id*,* cust_id*, invitation_id*, invitees_id*)

Invitees -3(invitees_id, invitees_name, invitees_email, invitees_address

3.6. Final ERD

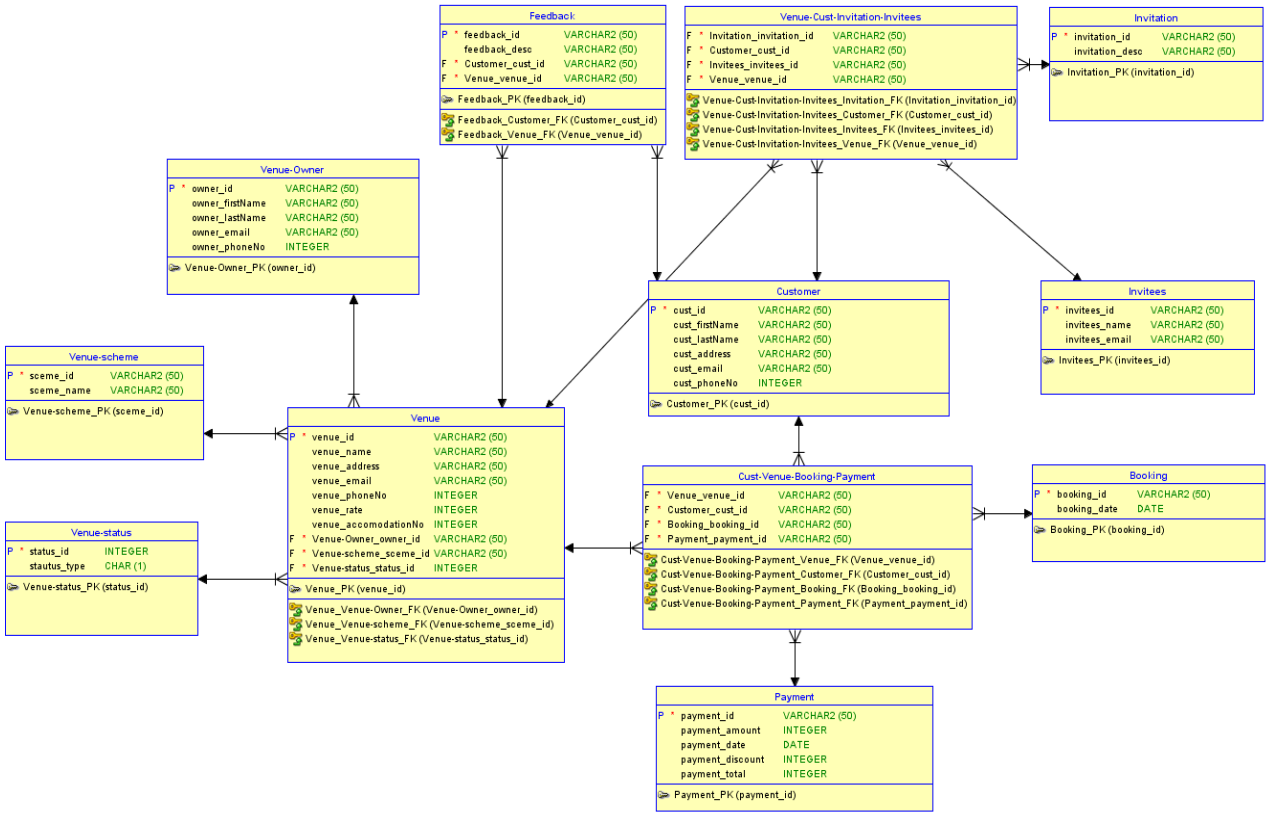

Figure 23: Final ERD after normalization.

4. Chapter 4: Analysis of Progress

4.1. Works completed

With reference to the Gantt chart provided below following works were completed. (Appendix-A: Gantt Chart)

Requirement Gathering:

The stage of requirement gathering, and analysis has been successfully completed. The requirement is thoroughly discussed and planned through steady meeting with the respected supervisors and teachers.

UML Diagrams:

With the completion of requirement gathering, I started working on creating UML diagrams. It includes Use Case Diagram, Initial ERD and final ERD. Normalization was done in order to achieve Final ERD which would help proper development database design of the project effectively.

Wireframes:

With the help of software 'Figma', I have developed an initial wireframe for the project. This would help me finalize my design and help to visualize the different pages of the web application.

Additional work:

Further along with above mention tasks I have been learning Django framework and am still in the process of learning. I have developed an initial login page which unfortunately does not

work as it should. Therefore, in future I would be focusing more on understanding and learning Django framework and start development of the application.

4.2. Review of Progress:

S.N.	Task	Status
1.	Topic Discussion and approval.	Completed
2.	Requirement Collection and research on project features.	Completed
3.	Wireframe and UML Diagrams (Use Case, ERD).	Completed
4.	Study of Similar system.	Completed
5.	Completion of Interim Report	Completed
6.	Development	Ongoing

Table 2: Review of Progress.

4.3. Justification to lagging pace in development

Since, the process of development of an entire application is a new experience for me, I have been very overwhelmed by the knowledge gained. It was surely a difficult task to collect requirements and analyze them along with researches and discussion with related people. Moreover, Django is relatively new topic for me, I have been stretching my time on learning the frame work which in fact has caused a delay of time in developing my project. According to the Gannt Chart provided below (Appendix: A) the interface of **Login** should have been completed, but due to the above-mentioned problem I am unable to complete the mentioned task. In order to overcome the lost time period, I would be decreasing the time for testing and documentation by 5 to 10 days and complete the task of development.

5. Chapter 5: Future Work

According to the third stage of my methodology the task to be focused on the development of the project. It would be progressed by the getting familiar with the framework Django continuous study and research on the topic. The login system would be first and foremost completed by decreasing time period for the testing and documentation. After the completion of the page, other pages would be simultaneously developed. Different testing would be conducted along side development. Furthermore, with continuous advices and research, the work would be completed, refined and finally completed.

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7. Appendix

7.1. Appendix-A: Gantt Chart

Task Name	Duration	Start	Finish
1. Inception	28 days	Wed 10/16/19	Fri 11/22/19
1.1. Research	12 days	Wed 10/16/19	Thu 10/31/19
1.2. Requirement Collection and analysis	16 days	Fri 11/1/19	Fri 11/22/19
2. Elaboration	40 days	Sat 11/23/19	Thu 1/16/20
2.1.Design Mockup for user interface	16 days	Sat 11/23/19	Fri 12/13/19
2.2. Design Use Case Diagram	19 days	Thu 12/5/19	Tue 12/31/19
2.3. Design ERD	20 days	Thu 12/12/19	Wed 1/8/20
2.4. Design System Architecture	15 days	Fri 12/27/19	Thu 1/16/20
3. Construction	98 days	Fri 12/20/19	Tue 5/5/20
3.1. Development of user Login	7 days	Wed 12/25/19	Thu 1/2/20
3.2. Development of dashboard for users	20 days	Fri 1/3/20	Thu 1/30/20
3.3. Development of other pages for users.	49 days	Wed 1/29/20	Sun 4/5/20
3.4. Manage Payment gateway	15 days	Wed 3/25/20	Tue 4/14/20
3.5. Implementation of database	35 days	Tue 3/10/20	Mon 4/27/20
4. Transaction	89 days	Mon 12/30/19	Thu 4/30/20
4.1. Conduction of Unit Testing	30 days	Mon 12/30/19	Fri 2/7/20
4.2. Conduction of Integration Testing	23 days	Sat 3/14/20	Tue 4/14/20
4.3. Maintainance of Project	20 days	Sat 4/4/20	Thu 4/30/20
4.4. Documentation	97 days	Fri 12/20/19	Sat 5/2/20
4.5. Deployment	2 days	Fri 5/8/20	Sun 5/10/20

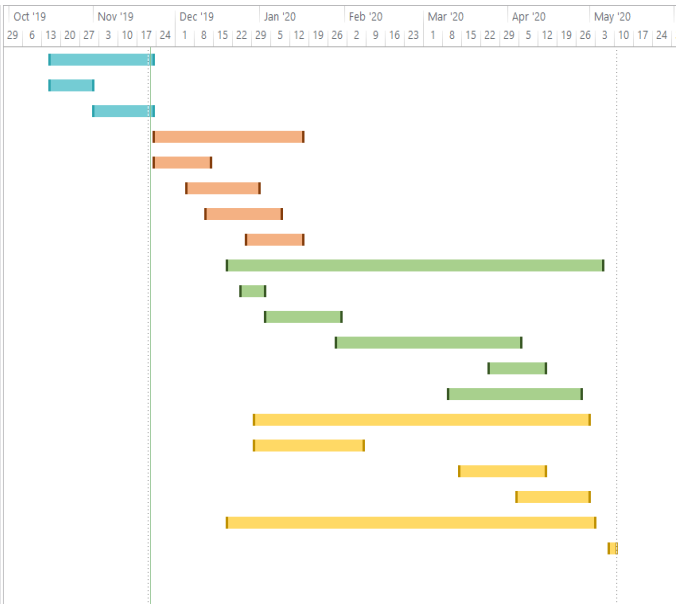


Figure 24: Gantt Chart.

7.2. Appendix-B: Survey

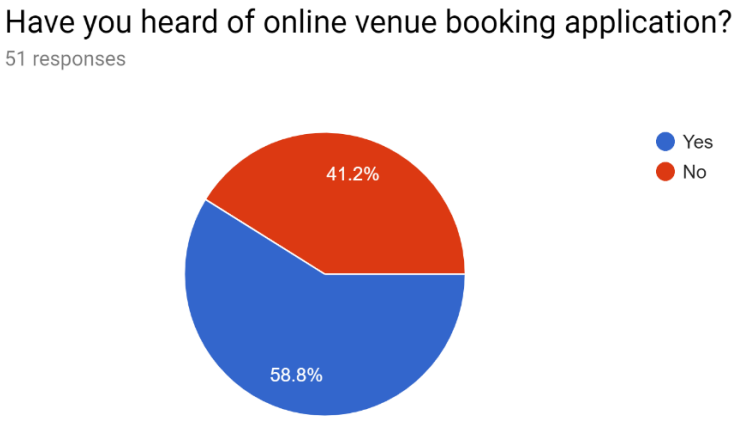


Figure 25: Survey Question 1.

According to the survey 58.8% of the respondance know about online venue booking application.

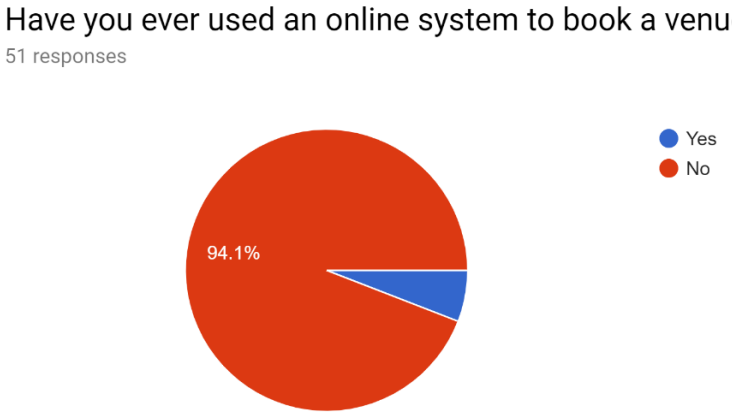


Figure 26: Survey Question 2.

Although many people know about the booking system, according to the survery 94.1% of the respondance seems to have never used any system for booking a venue. This means a better and userfriendly application could encourage people to utilize it and help ease their task.

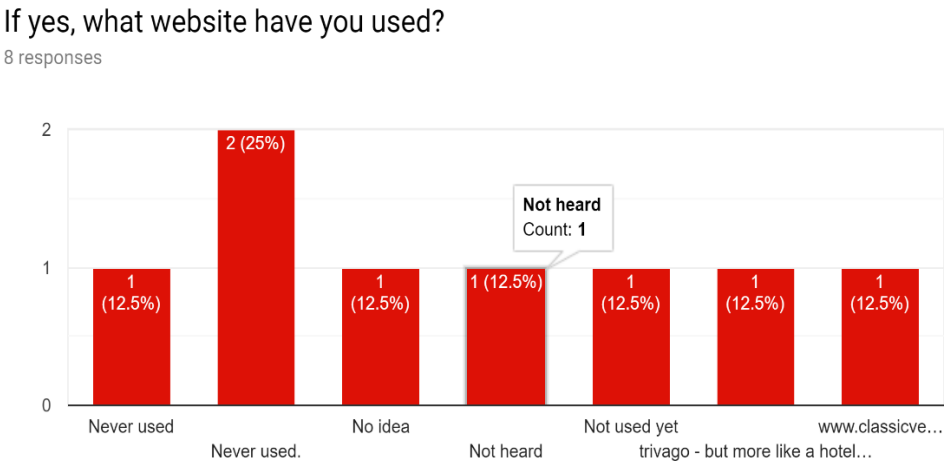


Figure 27: Survey Question 3.

This survey shows the similar booking application that has been already deployed to the world.

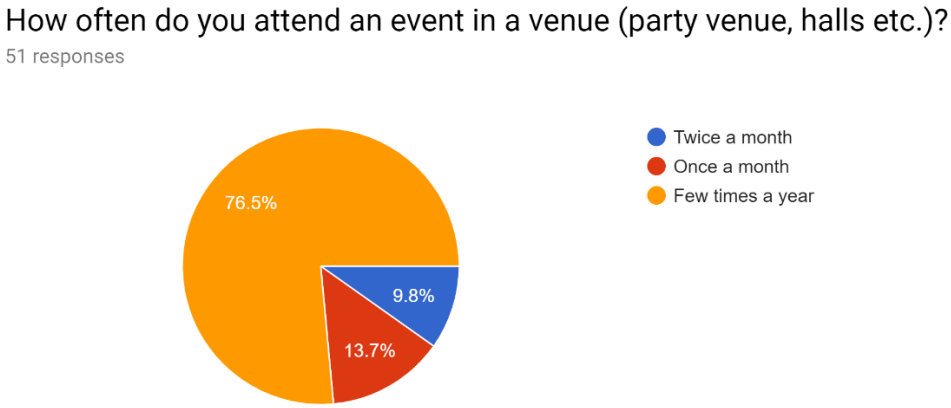


Figure 28: Survey Question 4.

Through the survey, we can see that every person attend an event atleast once in a year. For people organizing an event, this application could help easily book a venue.

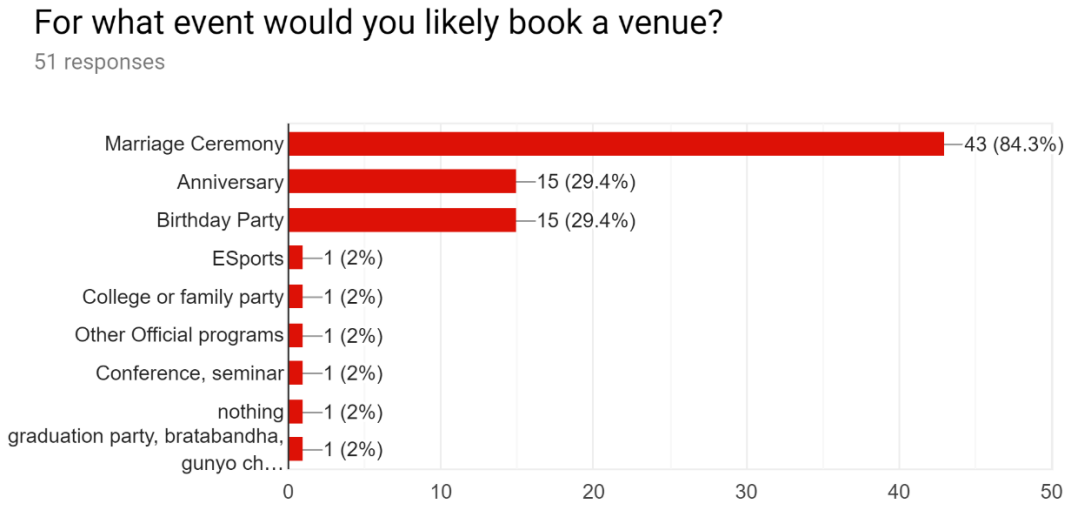


Figure 29: Survey Question 5.

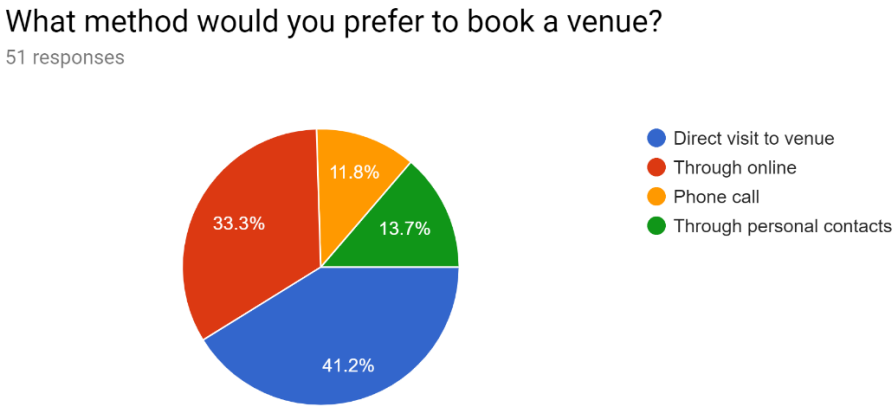


Figure 30: Survey Question 6.

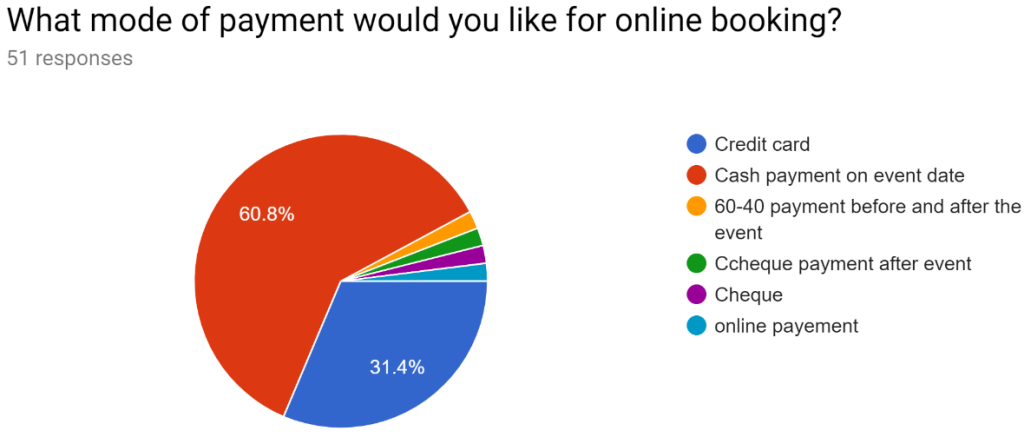


Figure 31: Survey Question 5.

31.4% of people are willing to pay through credit card. Hence, it would be useful to integrate an online payment.

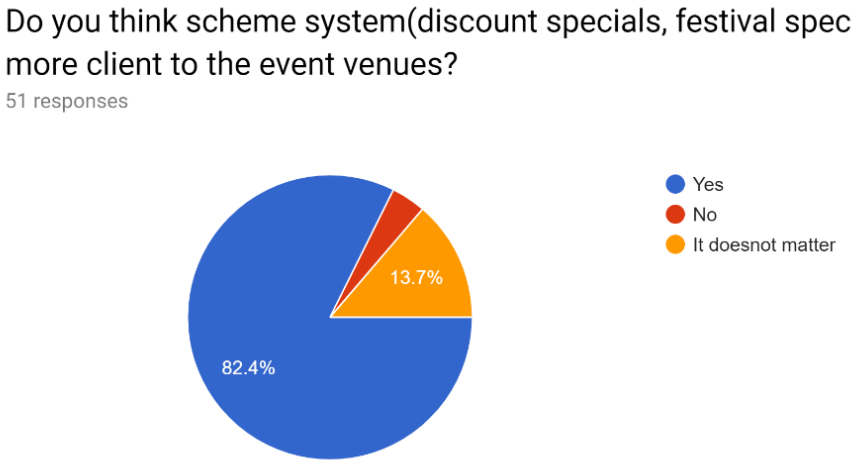


Figure 32: Survey Question 6.

Figure 33: Survey Question 7.

As per survey's result, it seems the business of the venue may increase by providing special scemes. Through the web application, people may be made aware about the ongoing scheme and could place a reservation accordingly.

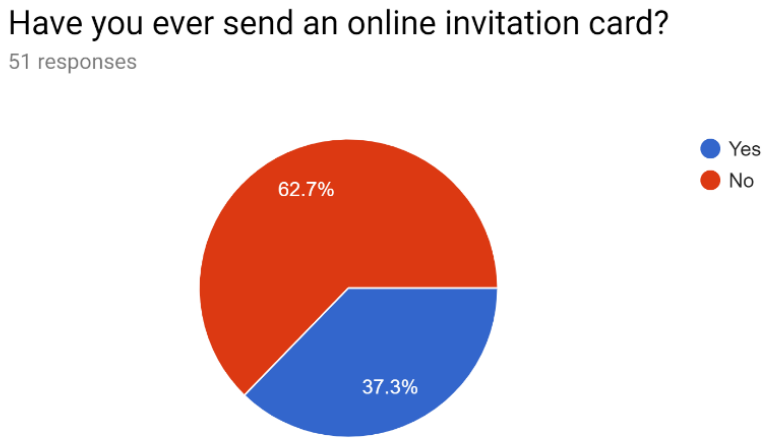


Figure 34: Survey Question 8.

Figure 35: Survey Question 9.

The unique feature of sending an invitation directly thorough online will attract more user for the system.

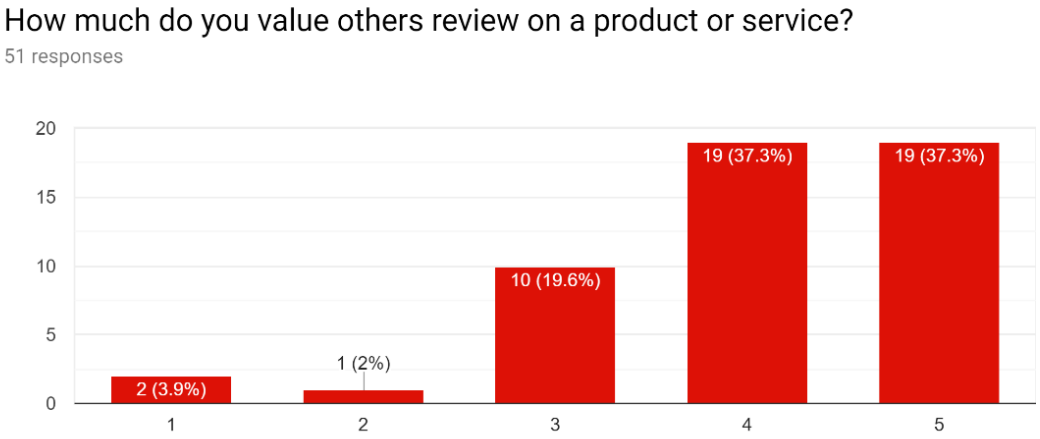


Figure 36: Survey Question 10.

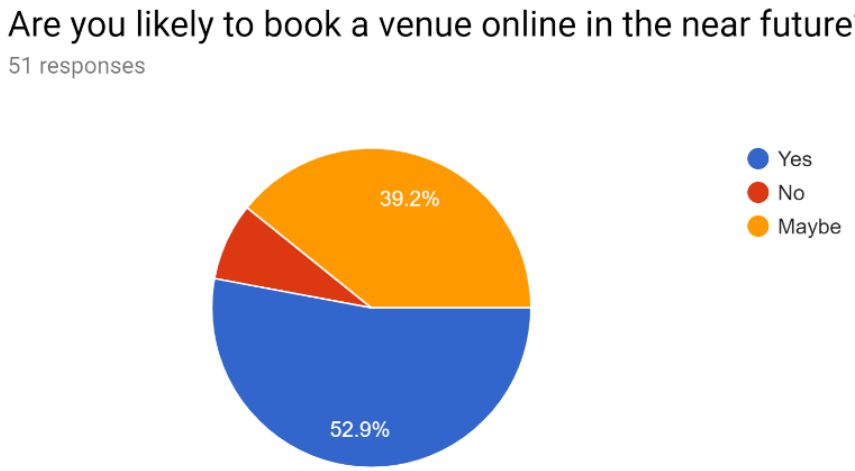


Figure 37Survey Question 11.

52.9% of the people are likely to book a venue online in near future. Hence, this can be taken as a positive inclination towards applicability of the system.

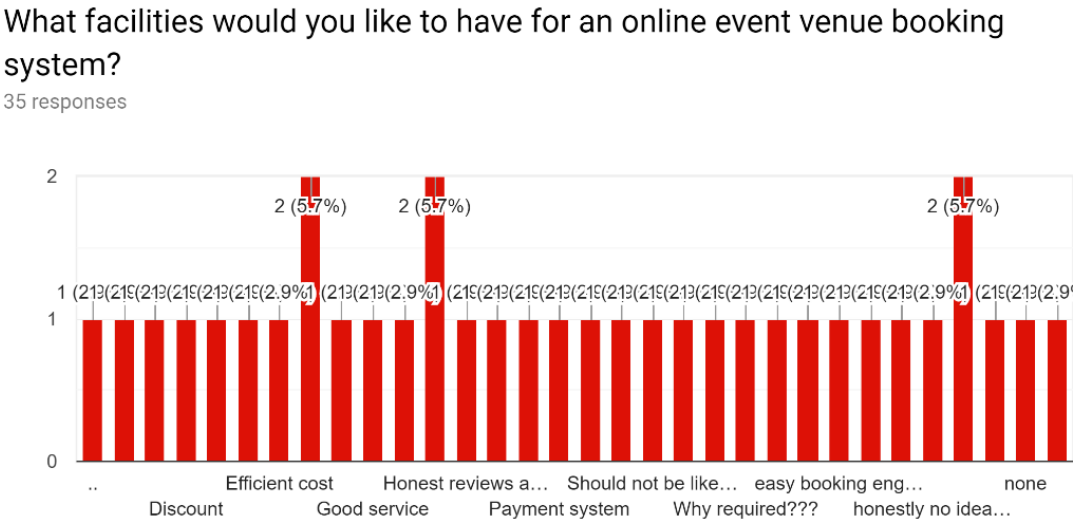
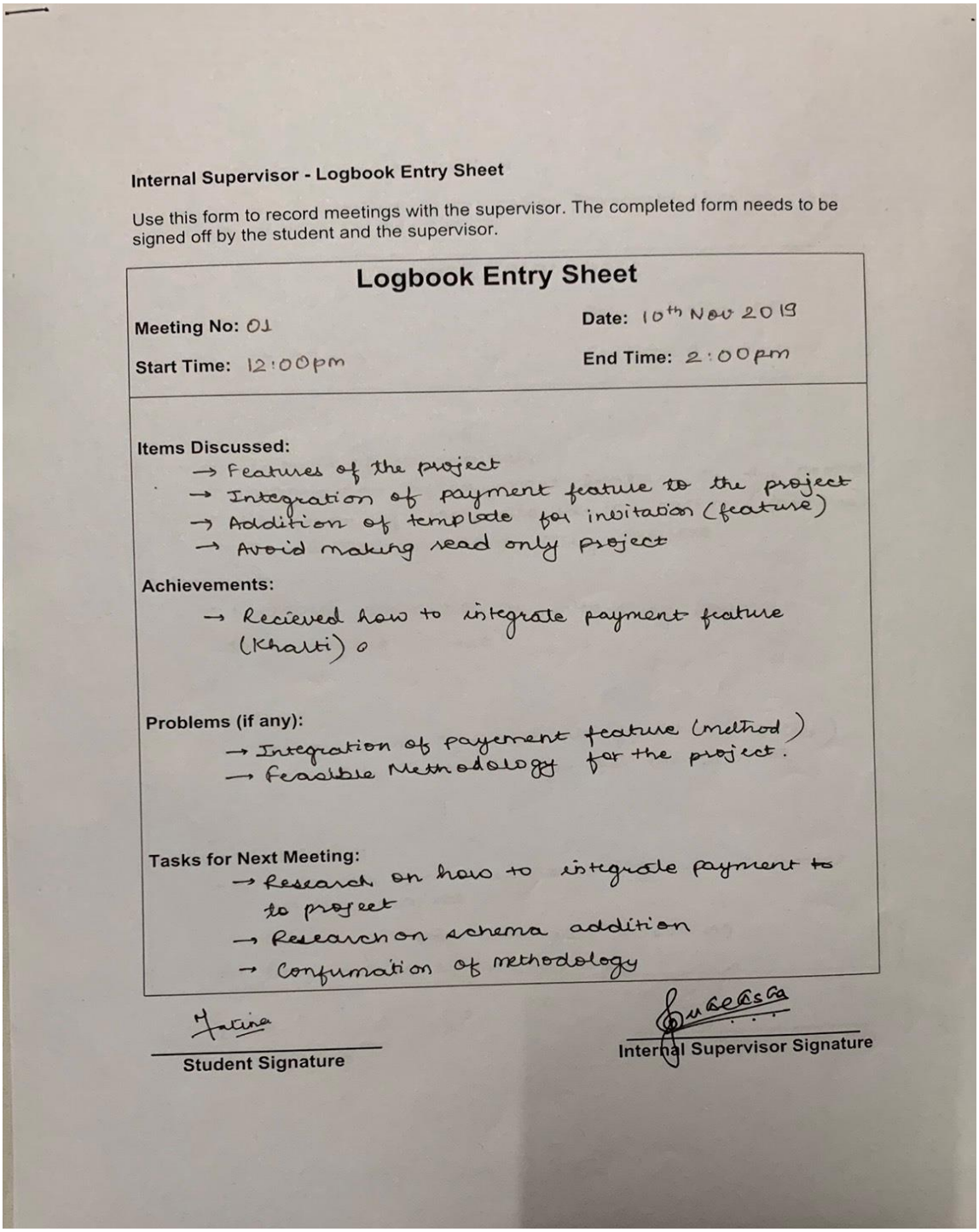


Figure 38: Survey Question 12.

7.3. Appendix C: Weekly Log

7.3.1. Week 1



Internal Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 01 **Date:** 10th Nov 2019

Start Time: 12:00pm **End Time:** 2:00pm

Items Discussed:

→ Features of the project
→ Integration of payment feature to the project
→ Addition of template for invitation (feature)
→ Avoid making read only project

Achievements:

→ Recieved how to integrate payment feature (Khalti).

Problems (if any):

→ Integration of payement feature (method)
→ Feasible Methodology for the project.

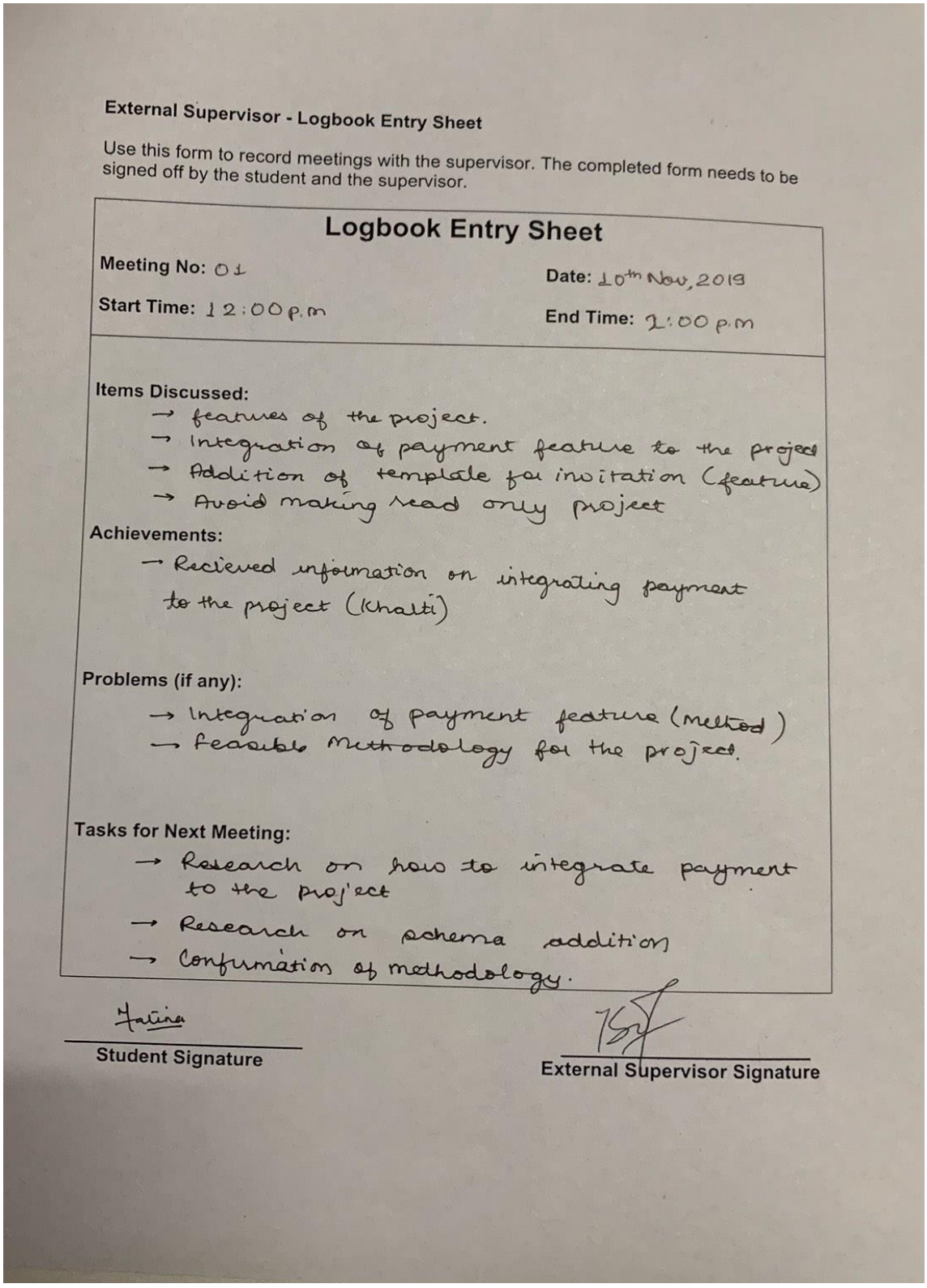
Tasks for Next Meeting:

→ Research on how to integrate payment to to project
→ Research on schema addition
→ Confumation of methodology

Matina
Student Signature

Internal Supervisor Signature

Figure 39: Log Book Week 1: Internal supervisor.



External Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 01 **Date:** 10th Nov, 2019

Start Time: 12:00 p.m **End Time:** 1:00 p.m

Items Discussed:

- → features of the project.
- → Integration of payment feature to the project
- → Addition of template for invitation (feature)
- → Avoid making read only project

Achievements:

- → Recieved information on integrating payment to the project (Khalti)

Problems (if any):

- → Integration of payment feature (Method)
- → Feasible Methodology for the project.

Tasks for Next Meeting:

- → Research on how to integrate payment to the project
- → Research on schema addition
- → Confirmation of methodology.

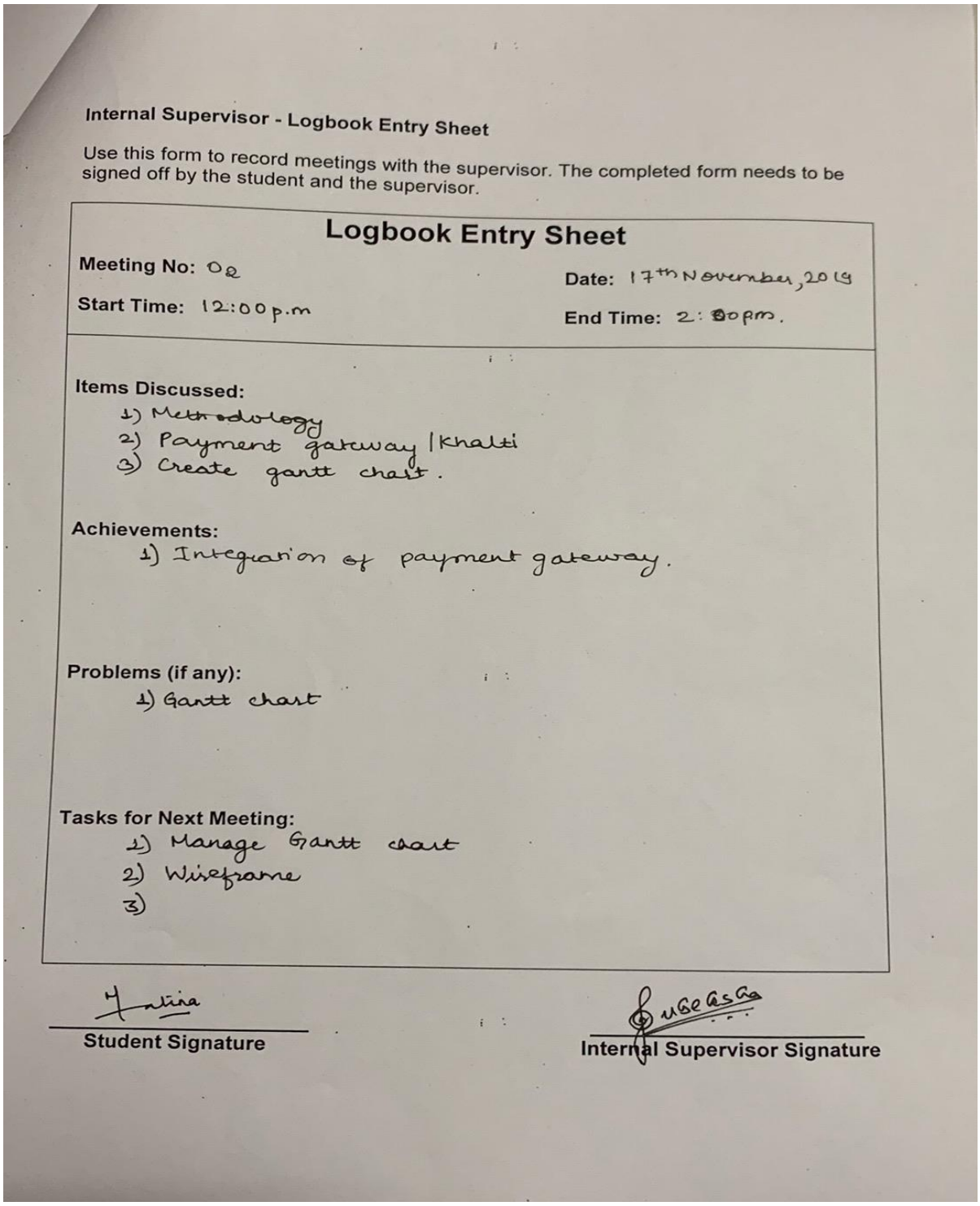
Matina

Student Signature

External Supervisor Signature

Figure 40:Log Book Week 1: External Supervisor

7.3.2. Week 2



Internal Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 02 **Date:** 17th November, 2019

Start Time: 12:00 p.m **End Time:** 2:30pm.

Items Discussed:

1) Methodology
2) Payment gateway | Khalti
3) Create gantt chart.

Achievements:

1) Integration of payment gateway.

Problems (if any):

1) Gantt chart

Tasks for Next Meeting:

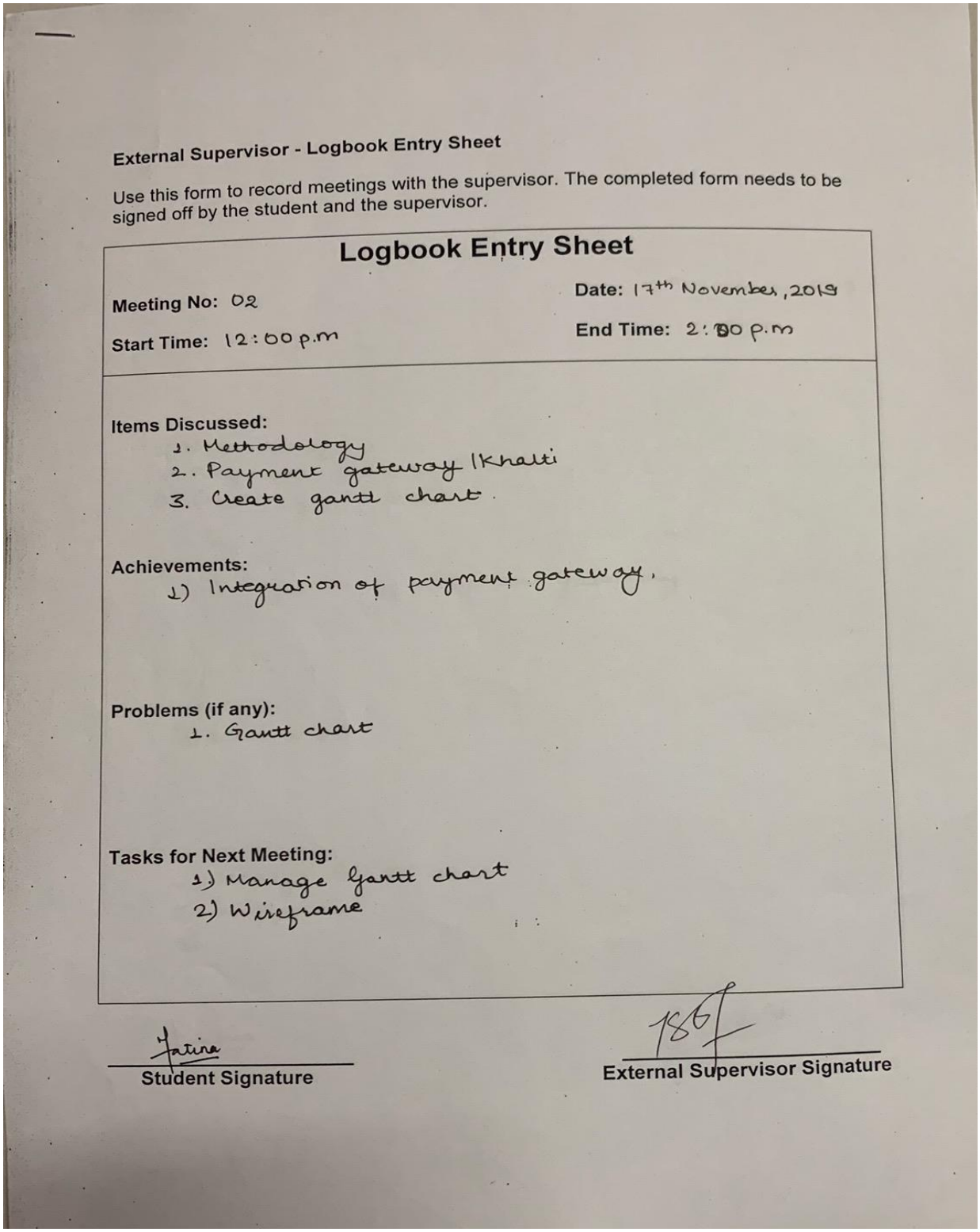
1) Manage Gantt chart
2) Wireframe
3)

Matina

Student Signature

Internal Supervisor Signature

Figure 41: Log Book Week 2: Internal Supervisor



External Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 02

Date: 17th November, 2019

Start Time: 12:00 p.m

End Time: 2:30 p.m

Items Discussed:

1. Methodology
2. Payment gateway (Khalti
3. Create gantt chart.

Achievements:

1) Integration of payment gateway.

Problems (if any):

1. Gantt chart

Tasks for Next Meeting:

1) Manage Gantt chart
2) Wireframe

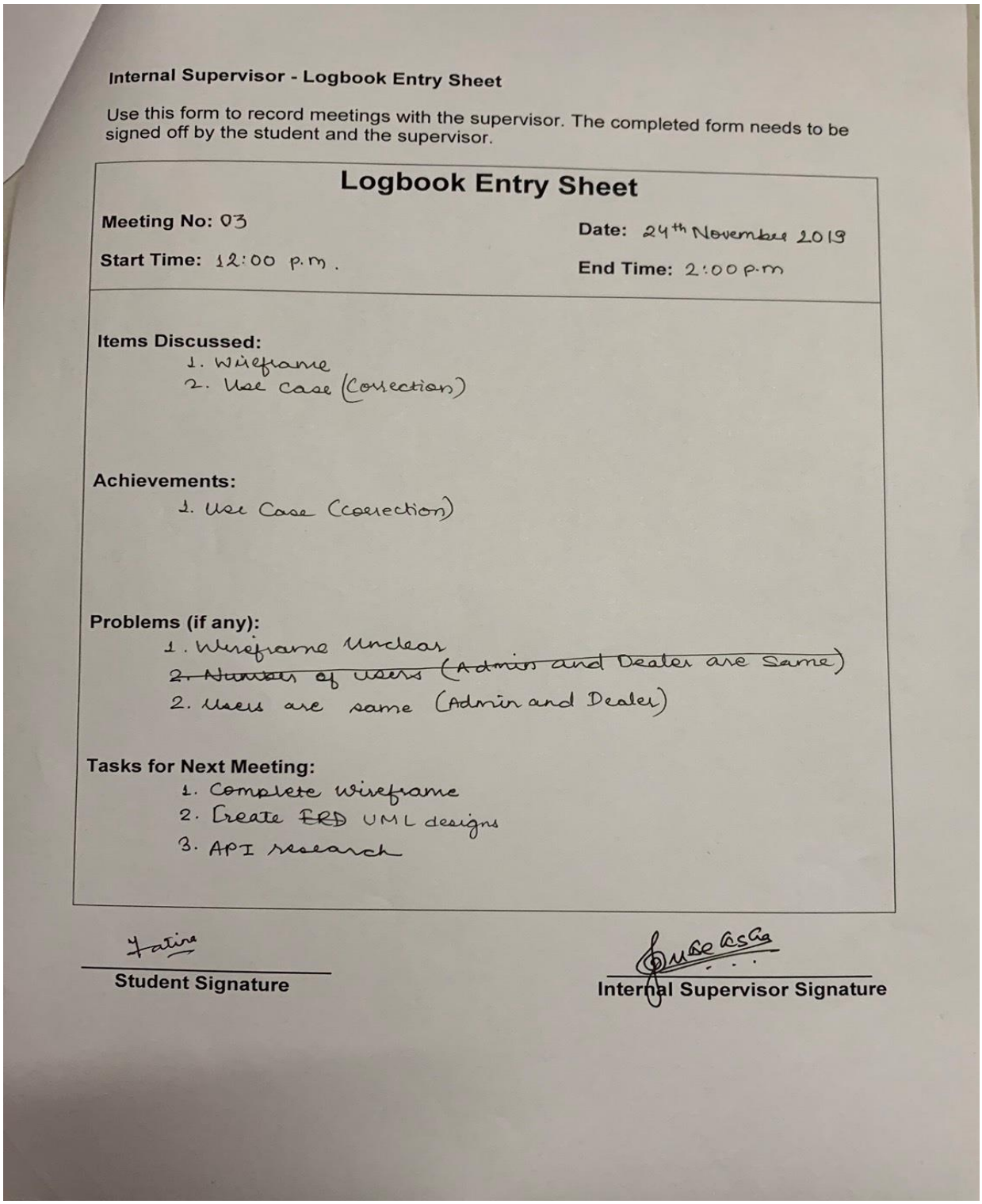
Matina

Student Signature

External Supervisor Signature

Figure 42: Log Book Week 2: External Supervisor

7.3.3. Week 3



Internal Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 03 **Date:** 24th November 2019

Start Time: 12:00 p.m. **End Time:** 2:00 p.m

Items Discussed:

1. Wireframe
2. Use Case (Correction)

Achievements:

1. Use Case (correction)

Problems (if any):

1. Wireframe Unclear
2. ~~Number of users (Admin and Dealer are same)~~
2. Users are same (Admin and Dealer)

Tasks for Next Meeting:

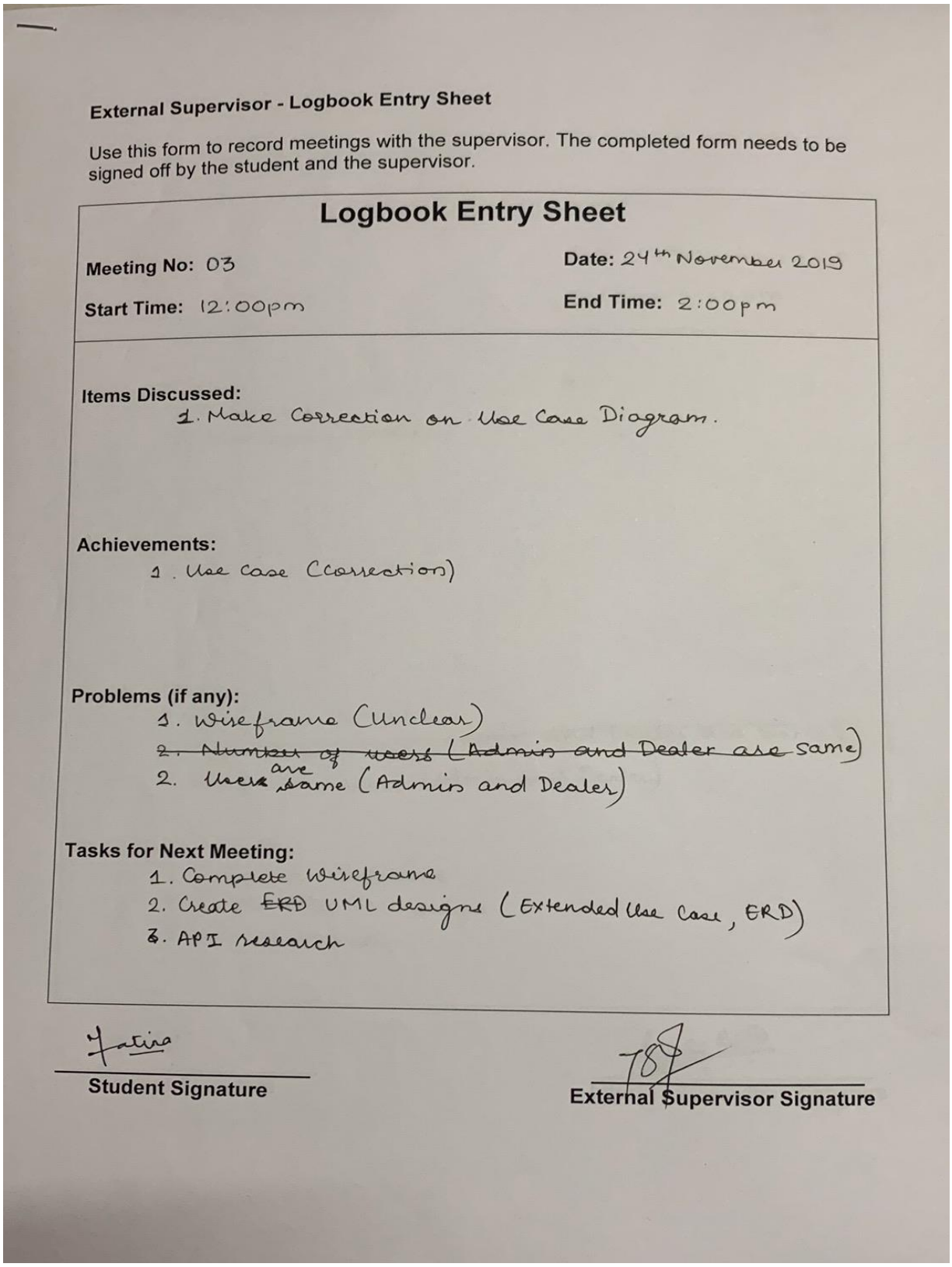
1. Complete wireframe
2. Create ~~ERD~~ UML designs
3. API research

Fatima

Student Signature

Internal Supervisor Signature

Figure 43: Log Book Week 3: Internal Supervisor



External Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 03 **Date:** 24th November 2019

Start Time: 12:00pm **End Time:** 2:00pm

Items Discussed:

1. Make Correction on Use Case Diagram.

Achievements:

1. Use Case (Correction)

Problems (if any):

1. Wireframe (Unclear)
2. ~~Number of users (Admin and Dealer are same)~~
2. Users are same (Admin and Dealer)

Tasks for Next Meeting:

1. Complete Wireframe
2. Create ~~ERD~~ UML designs (Extended Use Case, ERD)
3. API research

Matina

Student Signature

External Supervisor Signature

Figure 44: Log Book Week 3: External Supervisor

7.3.4. Week 4

External Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 4

Date: 08th Dec 2019

Start Time: 12:00 pm

End Time: 2:00 pm

Items Discussed:

1. Role of Admin
2. ERD
3. Use Case Diagram

Achievements:

1. Wireframe
2. ERD
3. Use Case Diagram

Problems (if any):

1. Clearness of ERD

Tasks for Next Meeting:

1. Create Database Model

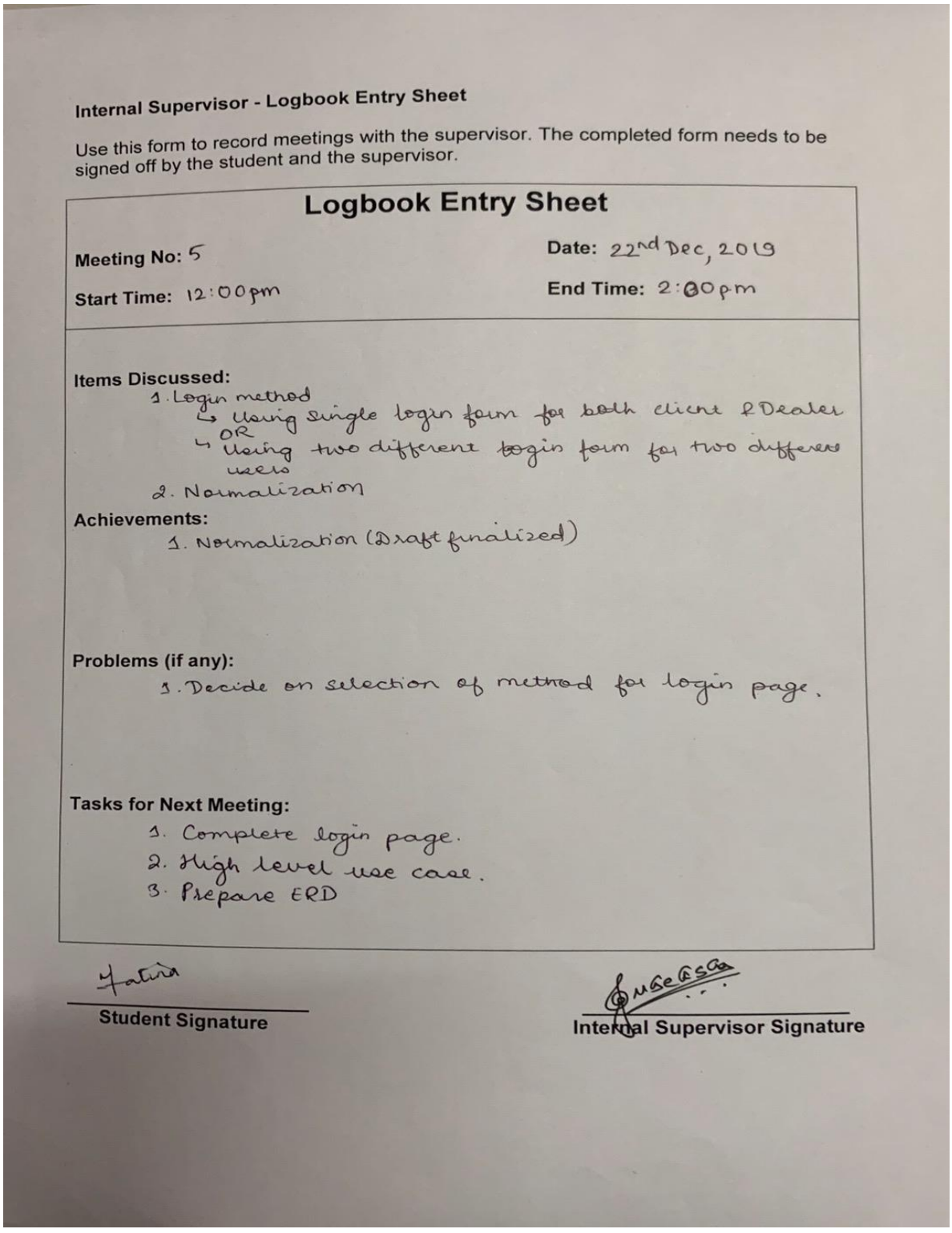
Matina

Student Signature

External Supervisor Signature

Figure 45: Log Book Week 4: External Supervisor

7.3.5. Week 5



Internal Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 5 **Date:** 22nd Dec, 2019

Start Time: 12:00pm **End Time:** 2:00pm

Items Discussed:

1. Login method
   - ↳ Using single login form for both client & Dealer
   - ↳ OR
   - ↳ Using two different login form for two differen users
2. Normalization

Achievements:

1. Normalization (Draft finalized)

Problems (if any):

1. Decide on selection of method for login page.

Tasks for Next Meeting:

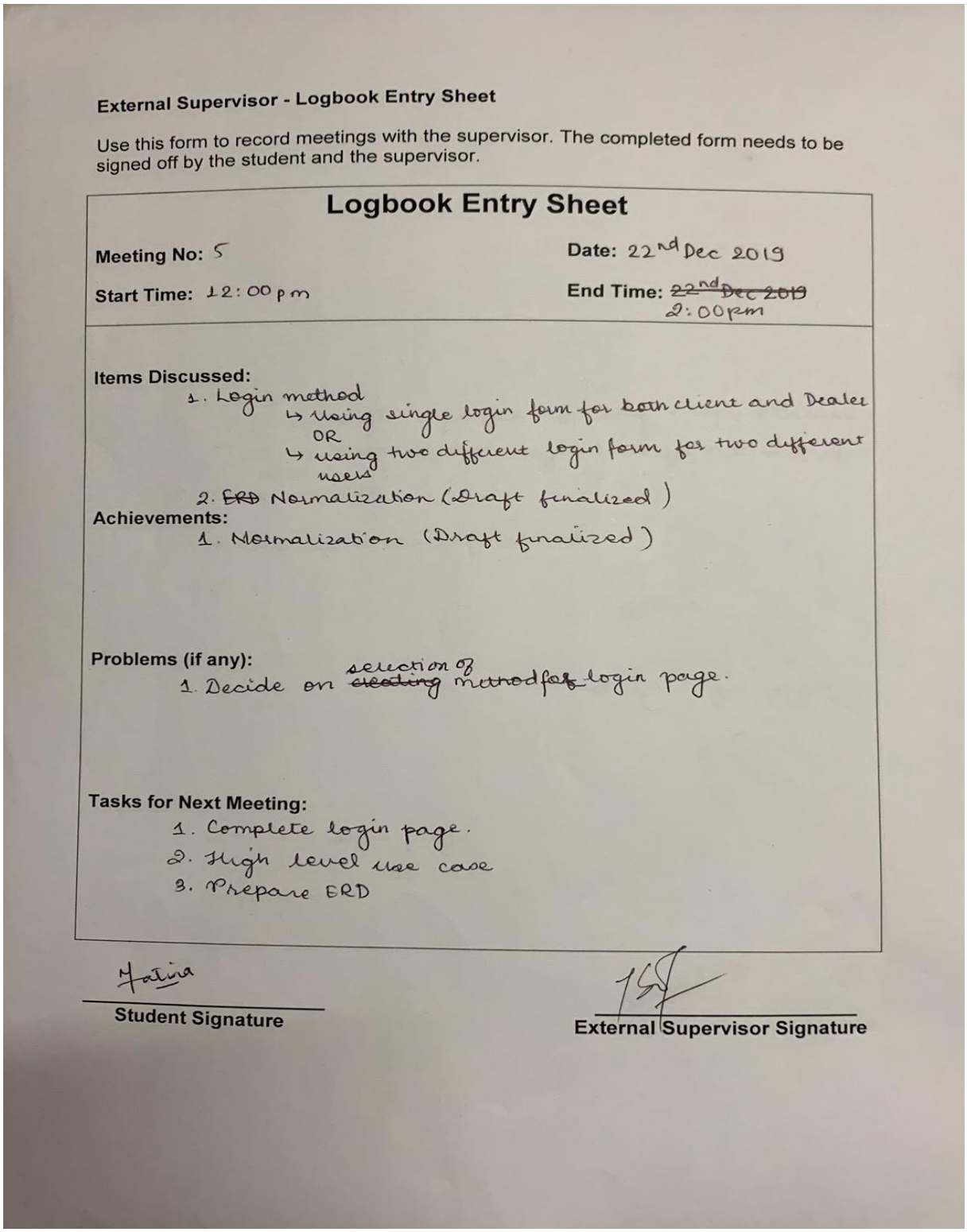
1. Complete login page.
2. High level use case.
3. Prepare ERD

Matina

Student Signature

Internal Supervisor Signature

Figure 46: Log Book Week 5: Internal Supervisor



External Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 5

Date: 22nd Dec 2019

Start Time: 12:00 pm

End Time: ~~22nd Dec 2019~~ 2:00pm

Items Discussed:

1. Login method
   - ↳ using single login form for both client and Dealer
   - OR
   - ↳ using two different login form for two different users
2. ~~ERD~~ Normalization (Draft finalized)

Achievements:

1. Normalization (Draft finalized)

Problems (if any):

1. Decide on ~~creating~~ selection of method for login page.

Tasks for Next Meeting:

1. Complete login page.
2. High level use case
3. Prepare ERD

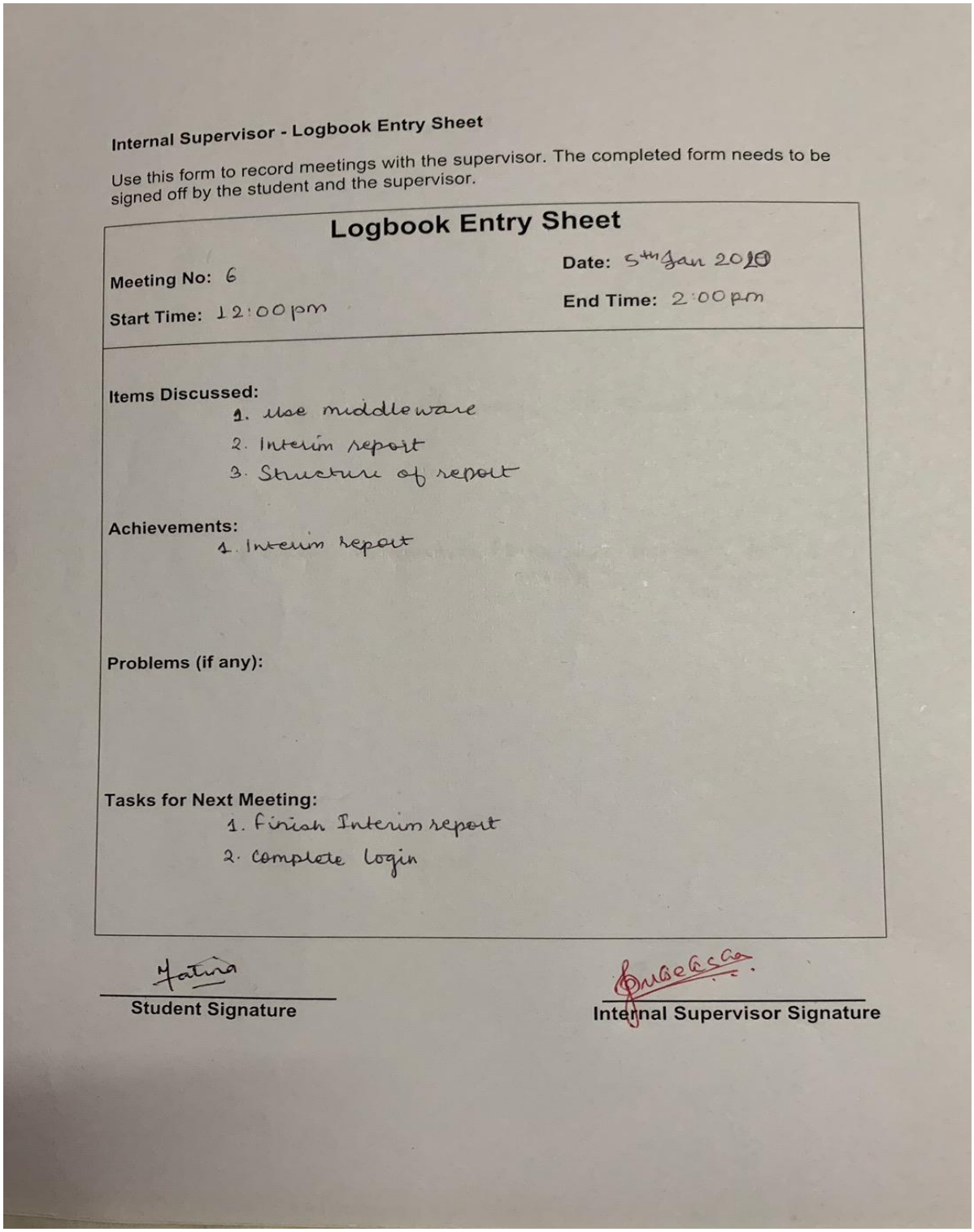
Matina

Student Signature

External Supervisor Signature

Figure 47: Log Book Week 5: External Supervisor.

7.3.6. Week 6



Internal Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 6 **Date:** 5th Jan 2020

Start Time: 12:00pm **End Time:** 2:00pm

Items Discussed:

1. use middleware
2. Interim report
3. Structure of report

Achievements:

1. Interim report

Problems (if any):

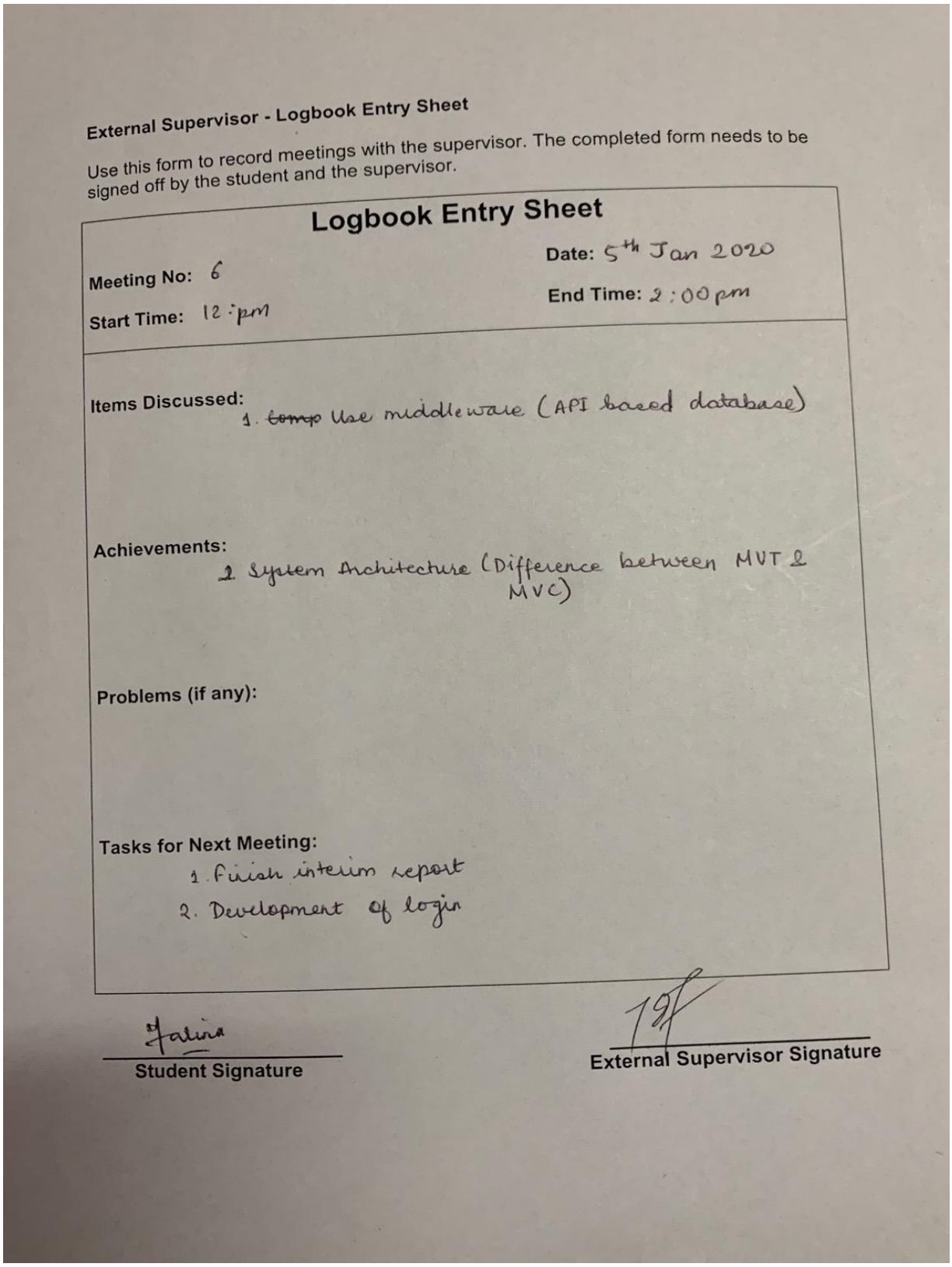
Tasks for Next Meeting:

1. finish Interim report
2. Complete login

Matina
Student Signature

Internal Supervisor Signature

Figure 48: Log Book Week 6: Internal Supervisor



External Supervisor - Logbook Entry Sheet

Use this form to record meetings with the supervisor. The completed form needs to be signed off by the student and the supervisor.

Logbook Entry Sheet

Meeting No: 6

Date: 5th Jan 2020

Start Time: 12 :pm

End Time: 2 :00 pm

Items Discussed:

1. ~~comp~~ Use middleware (API based database)

Achievements:

1. System Architecture (Difference between MVT & MVC)

Problems (if any):

Tasks for Next Meeting:

1. Finish interim report
2. Development of login

Matina

Student Signature

External Supervisor Signature

Figure 49: Log Book Week 6: External Supervisor