Tribhuvan University

Faculty of Humanities and Social Sciences

A PROJECT REPORT
ON FUTSAL MANAGEMENT SYSTEM

Submitted to Department of Computer Application

PADMASHREE INTERNATIONAL COLLEGE

TiNKUNE, KATHMANDU

In partial fulfillment of the requirements for the Bachelors in Computer Application

Submitted by

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SUPERVISOR'S RECOMMENDATION

I hereby recommend that this project prepared under my supervision by **Nabin Chuwal Shrestha** and **Shekhar Ghimire** entitled "**FUTSAL MANAGEMENT SYSTEM**" in partial fulfillment of the requirements for the degree of Bachelor of Computer Application is recommended for the final evaluation.

_____

SIGNATURE

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PADMASHREE INTERNATIONAL COLLEGE

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LETTER OF APPROVAL

This is to certify that this project prepared by **Shekhar Ghimire** and **Nabin Chuwal Shrestha** entitled "**Futsal Management System**" in partial fulfillment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

SIGNATURE of Supervisor Basanta Chapagain Department of BCA Tinkune, Kathmandu	**SIGNATURE of Coordinator** Raj Kumar Koirala Department of BCA Tinkune, Kathmandu
SIGNATURE of Internal Examiner Ashok Neupane	**SIGNATURE of External Examiner** **…….**

ABSTRACT

Futsal Management System, is an online website which is widely used to maintain several activities of the Futsal. It is easy for peoples to use this website for booking futsal orders. There is another facility in this website to cancelling the booking. In Futsal management system there are many steps to book futsal by enquiry the customer's name, customers id, customers phone number etc.

This website creates, updates and deletes users after proper enquiry for booking a futsal. It is good for the customer because they can avoid traveling to distance Futsal for booking. It will help in generating report regarding people booking time with ease. The main motive of this website is to satisfy our people needs.

ACKNOWLEDGEMENT

We would like to express our special thanks of gratitude to our supervisor **Mr. Basanta Chapagain** who gave us the golden opportunity to do this wonderful project on the topic "**Futsal Management System**", which also helped us in doing a lot of research and we came to know about so many new tools and technologies. Secondly, we would also like to thank our vice supervisor **Mr. Ashok Neupane** for helping us in clearing our doubts while completing our project.

Moreover, we would like to thank our coordinator **Mr. Raj Kumar Koirala** for arranging a good favorable environment to complete our project. At last, our parents and friends who helped us a lot in finalizing this project within the limited time frame are also highly thanked.

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List of Abbreviations

HTML	Hyper Text Markup Language
PHP	Hypertext Processor
CSS	Cascading Style Sheet
Corr	Correction
SQL	Structured Query Language
TDP	Technical Data Package
CIS	Computer Information System
JS	JavaScript
FMS	Futsal Management System

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Futsal Management System is the collection of programs for specially designed for registering user and booking Futsal online.

The system helps in creating, updating and deleting of customers and admins details place accordingly. Once an booking is placed on the web-app, it is placed into the database and then retrieved, in real-time, by a desktop application on the Futsal end. Within this application, all Booking in the order are displayed inside of that chosen Futsal. This allows the Futsal owner to quickly go through the booking as they are placed and recommend the availability of futsal for avoiding minimal delay and confusion. This application is based on the PHP & SQL, HTML, CSS and JAVASCRIPT.

1.2. Problem Statement

The designed Futsal Management System will solve issues like; People needing to walk certain distance or call to book futsal can easily book it online, but without recording details of booking with users getting free games.

1.3. Objectives

The main objective of developing futsal management system was;

i. To provide facility of booking a futsal online.
ii. To provide facility of performing manage operation for both customer/user and admin.

1.4. Scope and Limitation

1.4.1 Scope

The main scope of designing was to provide facility of booking a futsal and fixing opponents matches online without much difficulties, searching opponents online, keeping records on a daily basis of games played and counting one free game after playing 10 games and notifying registered users on upcoming events.

1.4.2 Limitation

Though, the developed system still has few limitations due to not meeting objectives such as; being able to provide facility of searching opponents online, keeping records for free games played, Notifying registered users on upcoming events. But in the future, the application will be also having above features.

1.5. Report Organization

From the start of the project to completion of project, the complete reports of the Futsal Management system have been managed based on chapters with main report's short summary mentioned below:

CHAPTER 1: INTRODUCTION

- Provides information of Futsal Management system, identifying its problems, objectives, scopes and limitation.

CHAPTER 2: BACKGROUND AND LITERATURE REVIEW

- Provides information about futsal and its dimension, and also acknowledging the similar web application with Futsal Management System.

CHAPTER 3: SYSTEM DESIGN AND IMPLEMENTATION

- Provides information of about analysis relating the Requirement (functional and non-function), Feasibility (Technical and Operational), Process Modelling, Data Modelling.
- Describes about the system design relating architectural, schema and interface.

CHAPTER 4: IMPLEMENTATION AND TESTING

- Provides information about how the technical data are tested after implementation,

CHAPTER 5: CONCLUSION AND FUTURE RECOMMENDATION

- Provides information about end result got after making of futsal management system and providing recommendation relating it for the future use.

CHAPTER 2: BACKGROUND AND LITERATURE REVIEW

2.1. Background Study

Futsal is a small place for playing football, usually with at least 5 players (one goalkeeper) in each. Its origin is basically coming from Brazil where football is worshipped as religion.

The futsal is smaller than a normal football pitch of 11 players in each. Most of the people play futsal to improve their ball control and technique for passing ball in small area, playing it quick as possible.

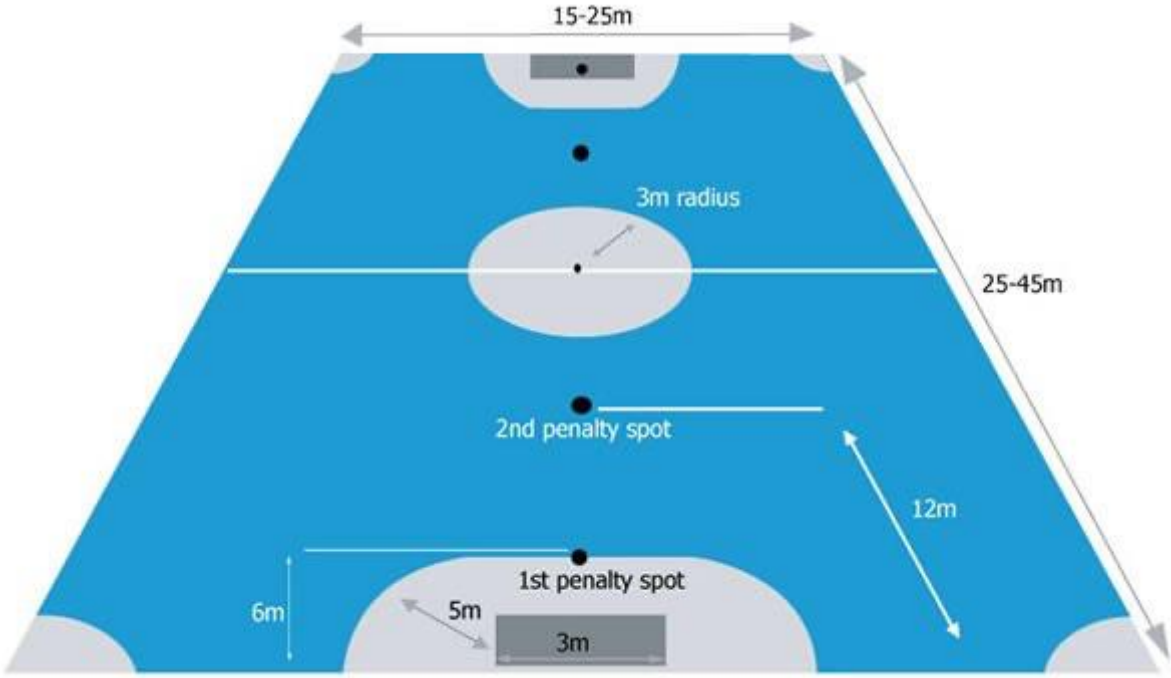

Figure 2.1: Futsal Dimension and Size [1]

In context of Nepal, futsal pitch is made near to above figure dimensions. As for ground materials, grasses mat is often used compared to foam mat, as local games and tournaments are more played than international games.

Furthermore, to facilitate for the management of futsal management software is need. A futsal management system is a system by which a futsal can be managed according to its needs and completing its necessary requirements.

Its development isn't a new one, though its important to create such software's to identify the basic requirements of a futsal on a small budget for a good business flow.

2.2. Literature Review

As compared to many other system software's created, futsal management system is very rare topic to choose for study. As by research, very few places around the world have made contribution to manage futsal with a software.

But in context of Nepal, there hasn't been identified a good managing software yet for booking and adjusting matches online. Very few students have made contribution in similar web-based system software like; Futsal booking system, Futsal matchmaking system, futsal court managing system, etc. where they have conducted researches and made futsal software package using:

i. Application System using Html and CSS.
ii. Data Recording System using MySQL.
iii. Validation using JavaScript

Some of the researches are mentioned below:

Research 1:

Table 2.1: Futsal Matchmaking System Using Rule-Based

Title	FUTSAL MATCHMAKING SYSTEM USING RULE-BASED
Author	MUHAMMAD A'DZIM BIN AZMAN (2018)
Journal	To design and develop a new system which can help to manage player in more organize and to matching players with others players with Rule-Based. This way, the task can be handling according to player choices. Inside the system, Users (players) will able to register and make groups with others players and then matching with others players.
Year	2018
Method	Rule-Based
Advantage	1. Able to gathers players. 2. Able to manage players. 3. Able to provide a status about others players. 4. Able to provide more information to the players.

Research 2:

Table 2.2: A Comparative Study on String Matching Algorithms of Biological Sequences

Title	A COMPARATIVE STUDY ON STRING MATCHING ALGORITHMS OF BIOLOGICAL SEQUENCES.
Author	Pandiselvam.P, Mariuthu.T, Lawrance.R
Journal	String matching is a technique to discover pattern from the specified input string. String matching algorithms are used to find the matches between the pattern andspecified string. For example Let U is an alphabet; the basics of U are called symbols or characters. For example, if U= {A,G} then AGAG is a string. The pattern is denoted by P (1…M) the string denoted by T (1…N). The pattern occurs in thestring with the shifting operation.
Year	2016
Method	String matching algorithms

Research 3:

Table 2.3: The Optimal Location of Inspection Stations

Title	THE OPTIMAL LOCATION OF INSPECTION STATIONS
Author	Kyong-sik Kang, Keneth A. Ebeling , Seuong-houn La
Journal	An expert system has the potential to solve problem using a rule-based system to determine the near optimal location of inspection stations. The prototype expert system is divided into a static database, dynamic database and knowledge base. Based on defined production systems, the sophisticated rules are generated by the simulator as part of knowledge base
Year	1990
Method	Rule-based methodology

[2]

Following the three researches, all of them somewhat related to futsal among which the first research: futsal matchmaking system was significantly similar whose purpose was to find players online and play matches. But the system was lacking to book futsal online which is the main aim of our system to cover. Moreover, this system was developed with similar platform with a very different approach embracing the similar ideas and adding new features.

CHAPTER 3: SYSTEM DESIGN AND IMPLEMENTATION

3.1. System Analysis

3.1.1. Requirement Analysis

i. Functional Requirement

Functional requirements define the capabilities and functions that a system must be able to perform successfully. The functional requirements of this Futsal Management system include:

- The system shall enable the customer to creating an account, login to the system and view booking time.
- The system shall prompt visual confirmation to customer to confirm booking.
- The system shall allow confirmation of pending booking.
- The system shall allow the manager to update booking time for a given day.

ii. Non-Functional Requirement

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. Some of the non- functional requirements include:

- Security: This system uses md5 for password encryption for password security.
- Performance: The system is managed with less code linkage to database to maximize page load time.
- Reliability: The system is designed with reliability as a primary concern.

3.1.2. Feasibility Analysis

This is a planning and analysis of the potential of the proposed project based on extensive investigation and research is to support the process of decision making. The feasibility study is required for preliminary review of the facts to see if it is worthy of proceeding to the analysis phase. From the perspective of system analysts, the feasibility analysis is the main tool for suggesting whether to proceed to the next phase or to discontinue the project.

i. Technical Feasibility Analysis

This study is focused on gaining an understanding of the current technical resources of the organization and their applicability to the expected needs of the proposed system. It is an evaluation of the hardware and software and how it meets the needs of the proposed system. The systems project is considered technically feasible if the internal technical capability is sufficient to support the project requirements such as;

- The limits of current technology for availability of functions in the system within given resource constraints.
- Enough programmers/testers and debuggers for the system.
- Necessary technical expertise and reasonable scheduling.
- Proposed technology being applied to current problems solving and handling solutions.

Since, all the above requirement are met, the proposed system is technically feasible.

ii. Operational Feasibility Study

Operational feasibility is the measure of how well the project will support the customer and the service provider during the operational phase. It is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed and implemented. Thus, the system proposed can be operationally feasible.

iii. Economic

Budget required for creating the futsal management system cannot be calculated correctly, but the cost of items purchased or cost of time spend on project before the start of the projects cannot be measured concurrently.

Taking some assumptions, we have calculated budget to develop our software as follows:

Table 3.1: Budget Estimation to Buy Current Version of Futsal Management System

Working Date	Work Done	Charge Per Hour*Number Hour Worked	Price
February 24-March 3 , 20	Requirement Gatheri	Rs. 200*10 hour	Rs. 2000
March 4- March 11, 202	Analysis	Rs. 200*10 hour	Rs. 2000
March 12- March 29, 20	Design	Rs. 500*25 hour	Rs. 15000
March 30- April 20, 202	Implementation	Rs. 200*15 hour	Rs. 3000
April 21-April 25, 2021	Documentation	Rs. 100* 12 hour	Rs. 1200
			Total Cost= 23200

As calculated above, the expected cost according our demands would be Rs. 23200 as for current version of futsal management system.

Also the cost of documentation while completing the project report is listed below:

Table 3.2: Cost of Printing Document

S.No.	Item	Number of Pages* Price Per Page	Price
1.	1st Proposal Documentation (Corr.)	14*3	Rs. 42≈Rs. 45
2.	2nd Proposal Documentation	14*3	Rs. 42≈Rs. 45
3.	1st Documentation (Corr.)	65*2.5	Rs. 162.5≈Rs. 165
4.	2nd Documentation (Corr.)	38*2.5	Rs. 95
5.	3rd Documentation(final)	33*2.5	Rs. 82.5≈85
			Total= Rs. 435

iv. Scheduling

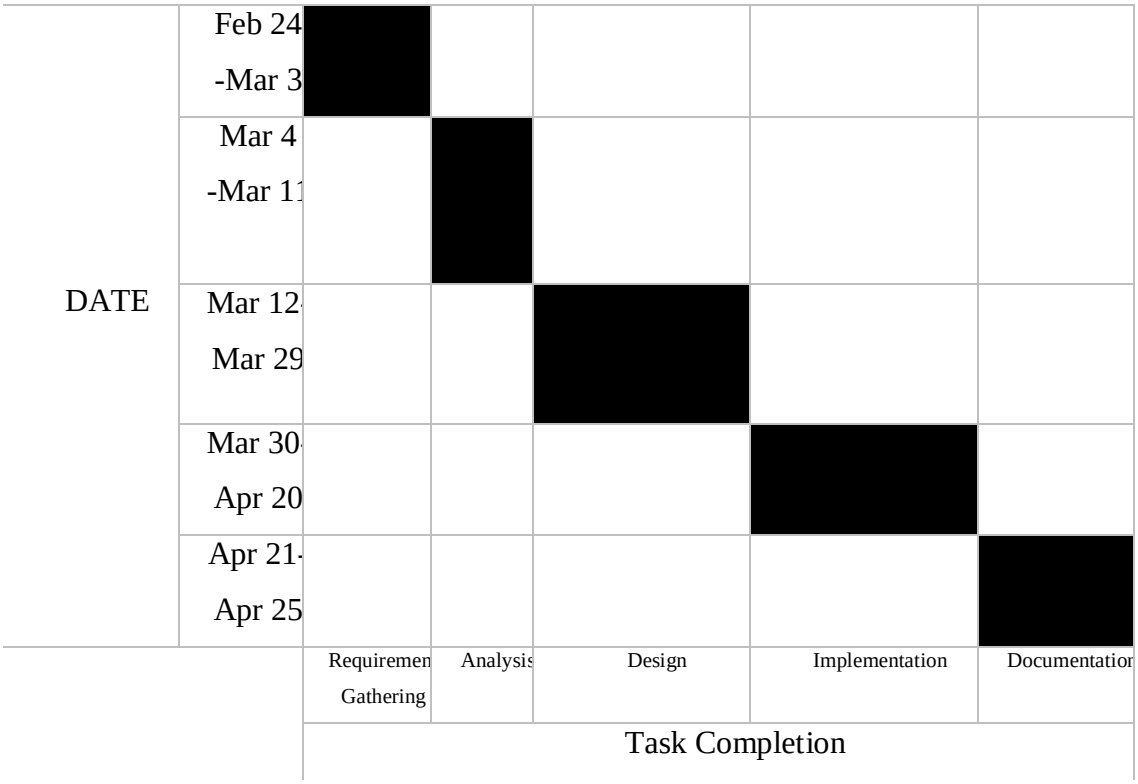

Figure 3.1: Gantt Chart for futsal management system completion time for system development life cycle

3.1.3 Data Modeling

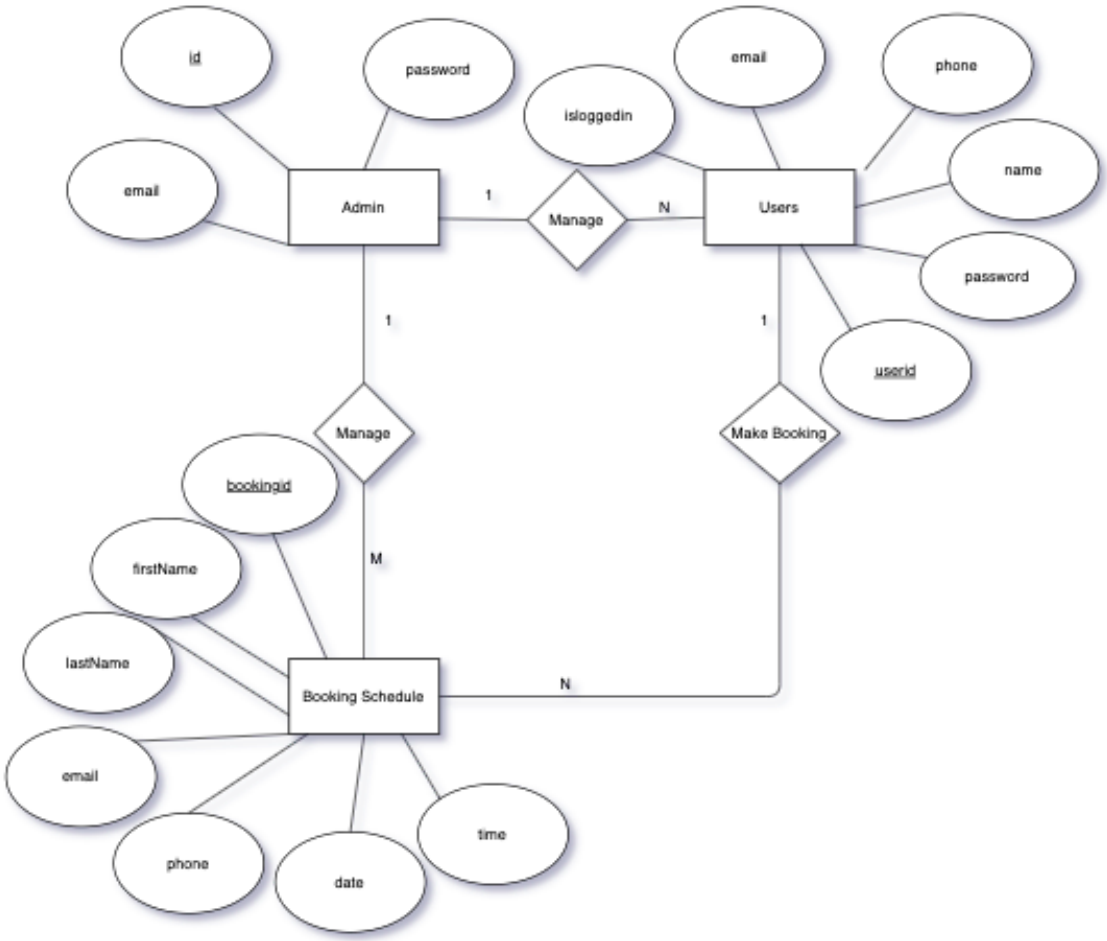

Figure 3.2: Entity Relationship Diagram of Futsal Management System

3.1.4 Process Modeling

i. Context Diagram

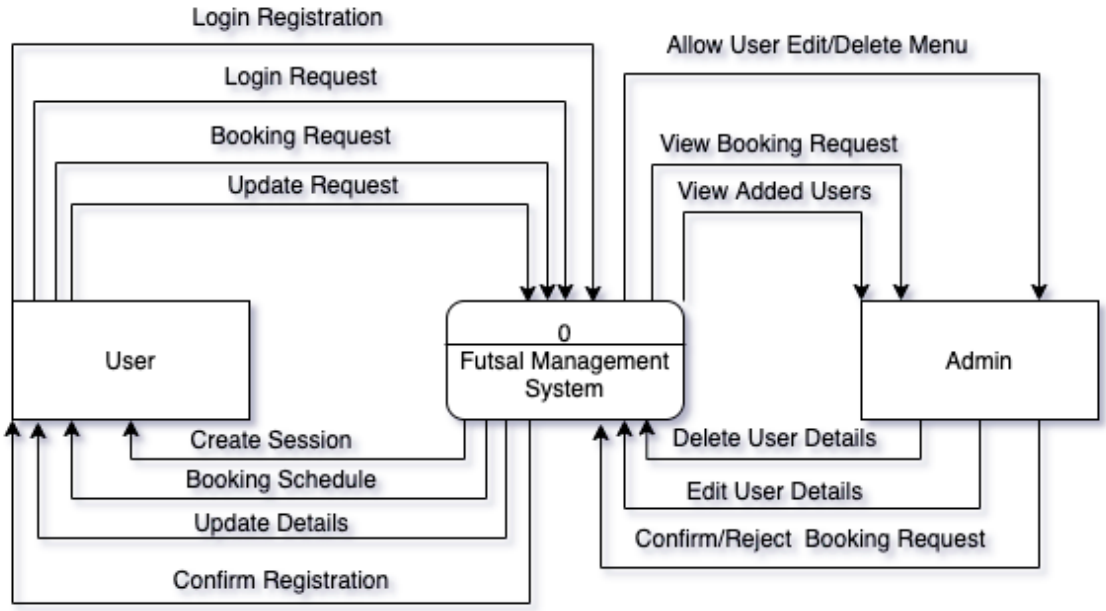

Figure 3.3: Context Diagram of Futsal Management System

ii. Data Flow Diagram

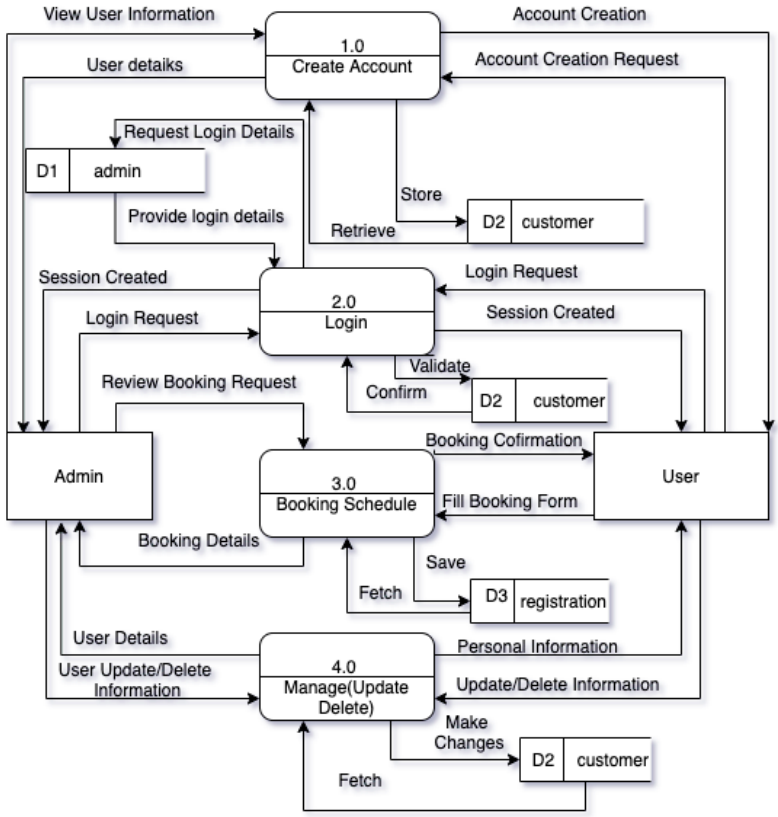

Figure 3.4: Level 0 Data Flow Diagram of Futsal Management System

3.2. System Design

3.2.1. Architectural Design

This design provides the necessary knowledge about how a software is made. As to our Futsal Management System, we also used HTML, CSS and JS for Front End, Php code for Back- End with MySQL Query for Database.

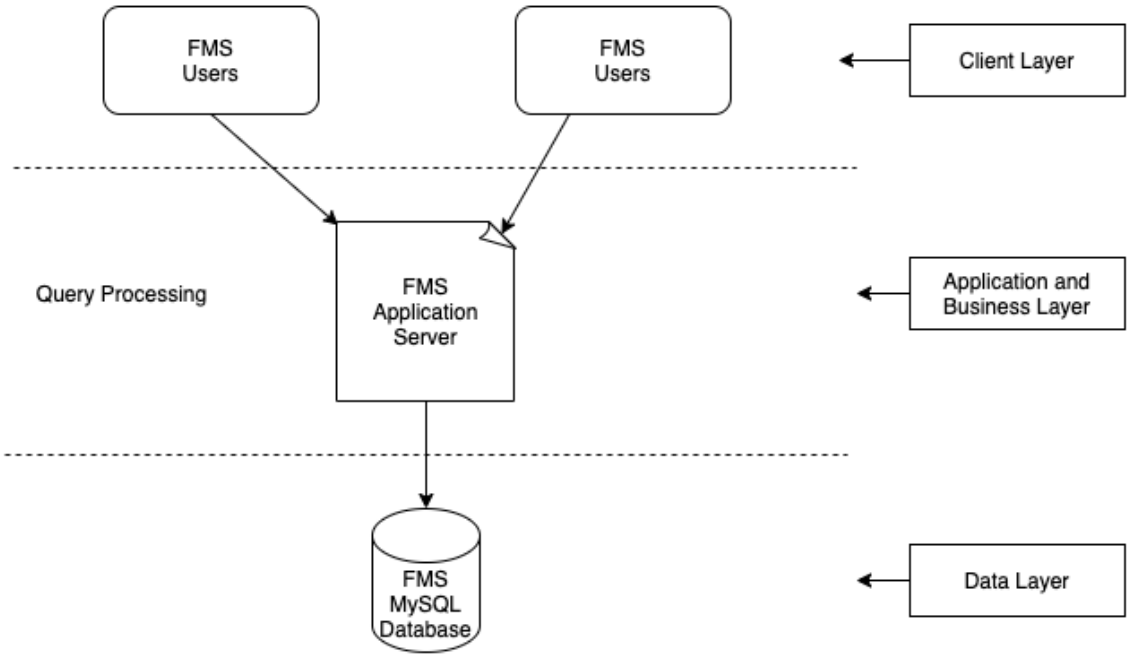

Figure 3.5: Architectural Design of Futsal Management System

3.2.2. Database Schema Design

The data which is stored in the database at a particular moment of time is called an instance of the database. The overall design of a database is called schema. A database schema is the skeleton structure of the database. It represents the logical view of the entire database.

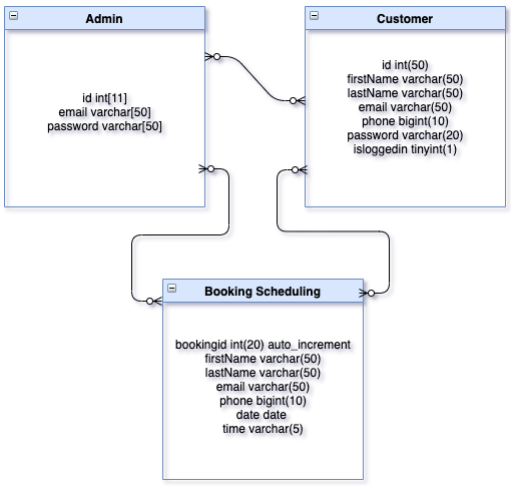

Figure 3.6: Schema Diagram of Futsal Management System

A schema contains schema objects like table, foreign key, primary key, views, columns, data types, stored procedure, etc. A database schema can be represented by using the visual diagram. That diagram shows the database objects and relationship with each other. A database schema is designed by the database designers to help programmers whose software will interact with the database.

3.2.3. Interface Design

The goal of this phase is to define the set of interface objects and actions i.e. Control mechanisms that enable the user to perform desired tasks. Indicate how these control mechanisms affect the system. Specify the action sequence of tasks and subtasks, also called a user scenario. Indicate the state of the system when the user performs a particular task. Always follow the three golden rules stated by Theo Mandel. Design issues such as response time, command and action structure, error handling, and help facilities are considered as the design model is refined. This phase serves as the foundation for the implementation phase.

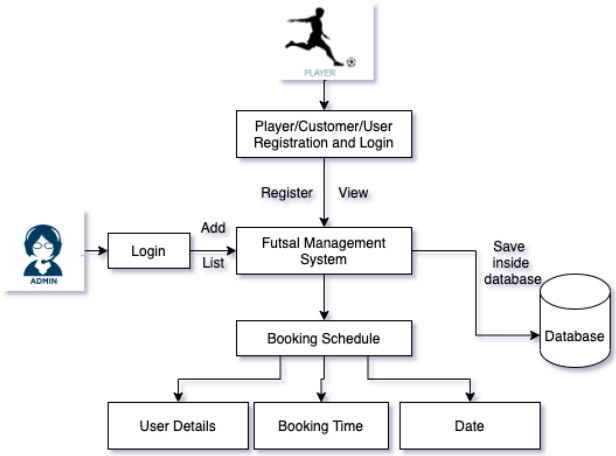

Figure 3.7: Interface Design of Futsal Management System

3.2.4. Physical DFD

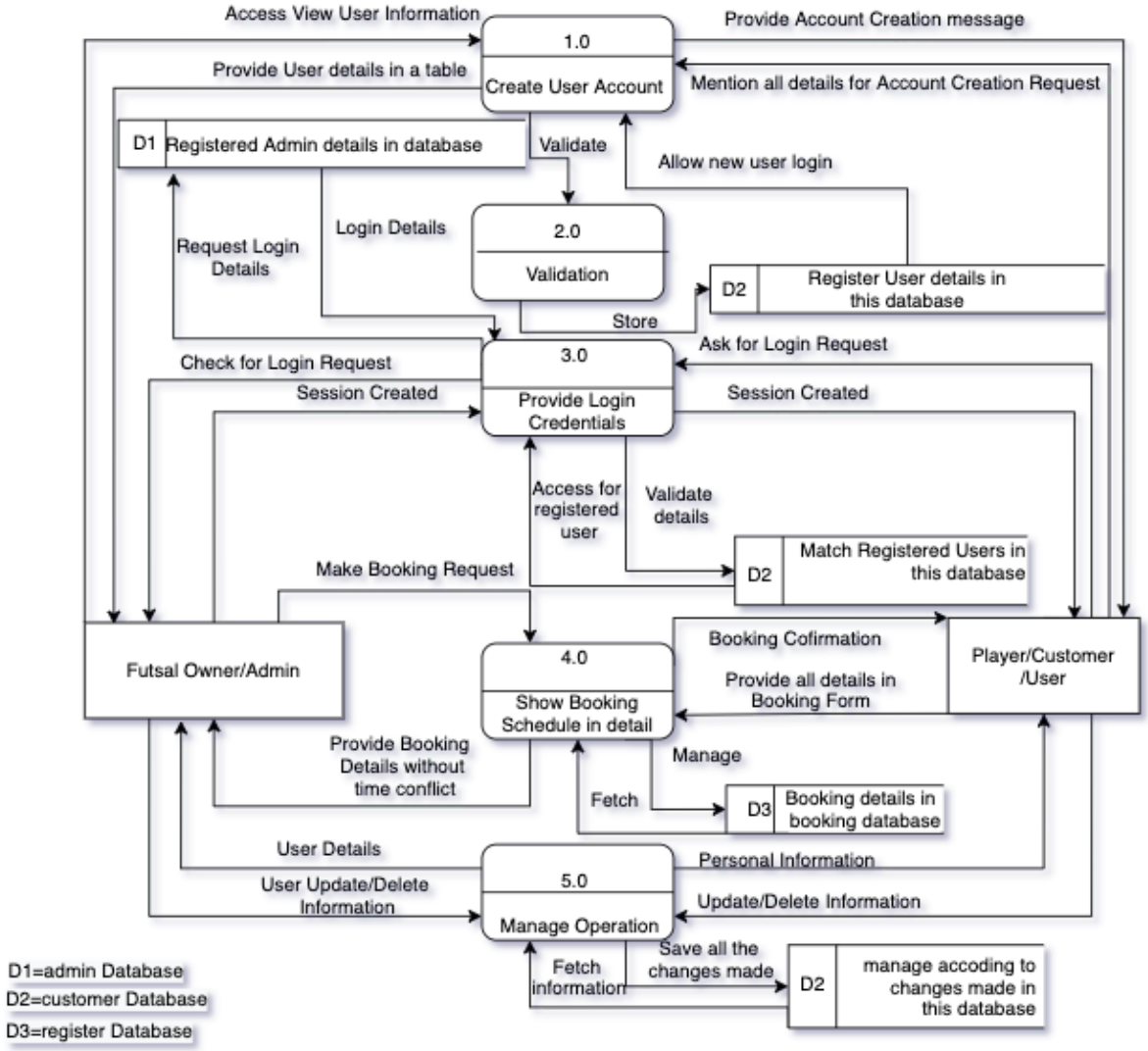

Figure 3.8: Physical DFD of Futsal Management System

CHAPTER 4: IMPLEMENTATION AND TESTING

4.1. Implementation

The software implementation stage involves the transformation of the software technical data package (TDP) into one or more fabricated, integrated, and tested software configuration items that are ready for software acceptance testing. The primary activities of software implementation include the:

- Fabrication of software units to satisfy structural unit specifications.
- Assembly, integration, and testing of software components into a software configuration item.
- Prototyping challenging software components to resolve implementation risks or establish a fabrication proof of concept.
- Dry-run acceptance testing procedures to ensure that the procedures are properly delineated and that the software product /software configuration items (Cis and computing environment) is ready for acceptance testing.

4.1.1 Technique and Tools Used

There are some key tools and techniques that helps to ensure the successful implementation of a project. The planning process was largely a solitary job with few essential deadlines to be met, and few concurrent activities. In the project, our team had tasks need to be assigned for each other where completed tasks were separately recorded and incomplete tasks were rescheduled.

Some of the key techniques in the process of managing our project are mentioned below:

- General management skills
- Futsal knowledge
- Work authorization system
- Regular meetings for Updates
- Project management information system

Some of key tools in the process of managing our project is mentioned below:

- Draw.io
- Microsoft Word 2020

4.1.2. Implementation Details of Module

Draw.io:

It's a free, intuitive, browser-based flowchart builder in which users can drag and drop entity shapes (including the ellipses and parallelograms common to data models) onto a canvas, then join them with connector lines. It's a handy way to get something down quickly, even for someone lacking access to high-powered software. [3]

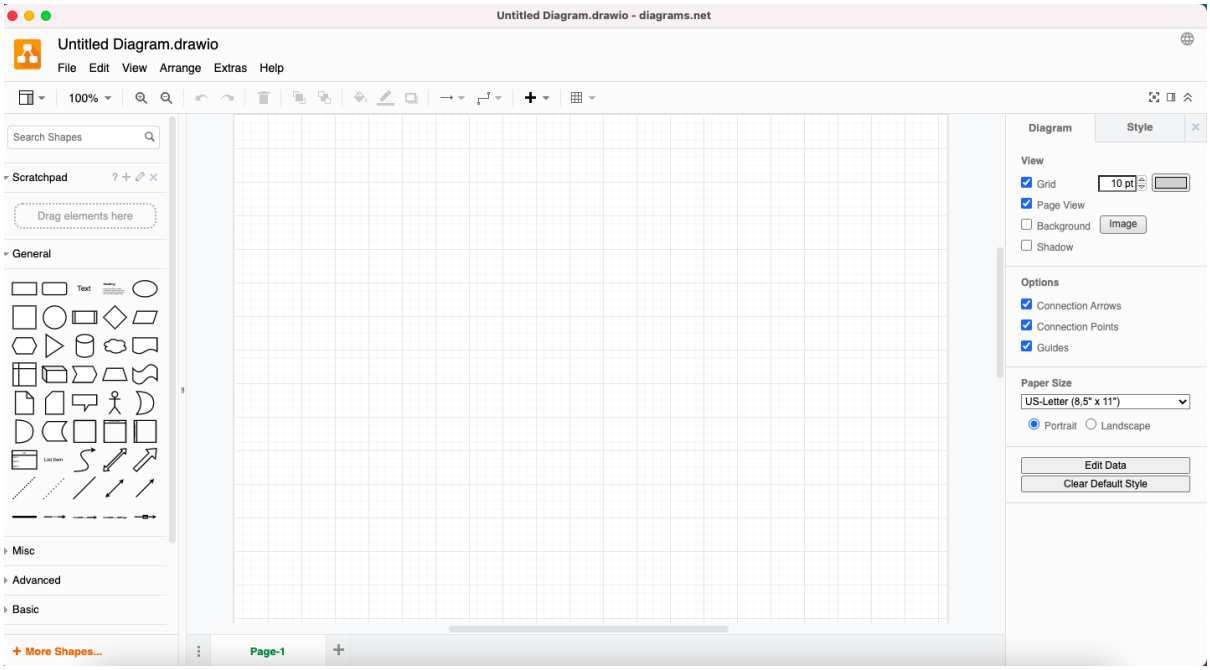

Figure 4.1: Draw.io

Microsoft Word 2020:

Sometimes called WinWord, MS Word, or Word, Microsoft Word is a word processor published by Microsoft. As for our project, it helped us for preparing documentation.

Microsoft PowerPoint:

It is one of the Microsoft packaged software developed by Microsoft for presenting information in slides. As for our project, it helped us in demonstrating our project via slides.

4.2. Testing

4.2.1 Test Case Requirement

Table 4.1: Test Case Design

S.NO.	Description	Requirements
1.	Admin Rights	-Edit/Delete users' details -Schedule Booking Time -Post Upcoming Events
2.	Users Rights	-Creating users (Registration) -View Booking Time -Futsal Booking
. 3.	Duplicate Admin Credentials	-Email with Password must be different.
4.	Duplicate User credentials	-Firstname, Lastname, Email, Phone Number and Password must be different.
5.	Change Password	-User and Admin should be able to change password.

4.2.2 Test Cases for Unit Testing

Table 4.2: Test Case for admin

S.No.	Test Case ID	Test Description	Input Test Data	Expected Result	Actual Result	Test Result
1.	TC-1.1	Open Browser and enter URL	http://localhost/ Futsal/login.php	Must Display Login Page Having input field of Admin email And password	As Expected	Passed

2.	TC-1.2	Enter Valid Admin Credentials /Admin Email and Password	Email: admin@gmail.com Password: **********	Must Redirect Access to Admin Panel	As Expected	Passed
3.	TC-1.3	Enter Data in Email and Password as Empty	Email: Password:	Must Show Error Message	As Expected	Passed
4.	TC-1.4	Enter Data in Email as empty with Password	Email: Password:******	Must Show Error Message	As Expected	Passed
5.	TC-1.5	Enter Data in Email with Password as empty	Email: admin@gmail.com Password:	Must Show Error Message	As Expected	Passed
6.	TC-1.6	Enter Data in Email and Password as invalid	Email: shekhar@gmail.com Password:***	Must Show Error Message	As Expected	Passed
7.	TC-1.7	Updating User Credentials	First Name: Shekhar Last Name: Ghimire Email: shekhar1@gmail.com Phone Number: 9850103103 Password: ******	User's Credentials Successfully Updated	As Expected	Passed
8.	TC-1.8	Deleting User Credentials	First Name: Shekhar Last Name: Ghimire Email: shekhar1@gmail.com Phone Number: 9850103103	User's Credentials Successfully Deleted	As Expected	Passed

			Password: ******			
9.	TC-1.9	Creating Admin Account with all Details in database	INSERT INTO `admin` (`id`,`email`,`password`) VALUES ('2',' shekhar@gmail.com', 'shekhar');	Must Create Admin Account	As Expected	Passed
10.	TC -1.10	Creating Admin Account with any one details empty in database	INSERT INTO `admin` (`id`,`email`,`password`) VALUES ('', ',');	Must Show Error Message	As Expected	Passed

Table 4.3: Test Case for User

S.No.	Test Case ID	Test Description	Input Test Data	Expected Resu	Actual Result	Test Result
1.	TC-2.1	Open Browser and enter URL	http://localhost/ futsal/Customer_login.php	Must Display Login Page having input field of user email and password with Creating Account Field	As Expected	Passed
2.	TC-2.2	Creating Account for Customer Login with all credentials	First Name: Last Name: Email: Phone Number: Password:	Must Create Customer Account Successfully	As Expected	Passed

3.	TC-2.3	Creating Account for Customer Login with all credentials	First Name: Last Name: Email: Phone Number: Password:	Must show Validation module to fill the form	As Expected	Passed
4.	TC-2.4	Enter Valid User Credentials/ User Email and Password	Email:rockynabinshrestha1@gmail.com Password: *	Must redirect access to user panel	As Expected	Passed
5.	TC-2.5	Enter Data in Email and Password as Empty of User	Email:rockynabinshrestha1@gmail.com Password:	Must show error message	As Expected	Passed
6.	TC-2.6	Enter Data in Email as empty with Password of User	Email: Password: *	Must show error message	As Expected	Passed
7.	TC-2.7	Enter Data in Email with Password as empty	Email: shekhar@gmail.com Password:	Must show error message	As Expected	Passed
8.	TC-2.8	Enter Data in Email and Password as invalid	Email: shekhar@gmail.com Password:**	Must show error message	As Expected	Passed
9.	TC-2.9	Updating User Credential in User Panel	First Name: shekhar Last Name: Ghimire Email: shekhar1@gmail.com	Must Update User Credentials	As Expected	Passed

			Phone Number: 9850103103 Password:*			
10.	TC-2.10	Updating User Credential in User Panel	First Name: shekhar Last Name: Ghimire Email: shekhar1@gmail.com Phone Number: 985010310 Password:*	Must Update User Credentials	As Expected	Passed

4.2.3 Test Cases for System Testing

The test performed by the system for compatibility with the platform is known as system testing. Some of the Test Cases for System Testing while making Futsal Management System are mentioned below in the table;

Table 4.4: Black box system testing as per test case

S.No.	Description	Requirements	Result	Test Result
1.	Admin Rights	Edit/Delete User Details	Admin can edit and delete user details	Passed/ Passed
		View Booking Time	Admin can view booking time	Passed
2.	User Rights	Creating User	User can Register with validation	Passed
		View Booking Time	User can view Booking Time	Passed
		Futsal Booking	User can book time for futsal	Passed
3.	Duplicate Admin Credentials	Email with Password must be different	Admin's login with email and password must be different	Passed
4.	Duplicate User Credentials	Firstname, Lastname, Email, Phone number and Password must be different	User's email and password must be different	Passed
5.	Change Password	User and Admin should be able to change password	User and Admin can change password	Passed

CHAPTER 5: CONCLUSION AND FUTURE RECOMMENDATION

5.1. Lesson Learnt/Outcome

With the completion of Futsal Management System, we learnt many things such as;

- Concept of software development life cycle.
- Making a system by integrating codes.
- Managing Database
- Difference between unit testing and system testing
- Making documentation with proper formatting.

Moreover, the outcome from lesson learnt helped us create a project this project "FUTSAL MANAGEMENT SYSTEM" with the main aim for users create account and to book futsal online, and allow admin to handle booking and user credentials.

5.2. Conclusion

It can be concluded that, Booking can be made easily by this system. Information needed in making Booking is provided by the system. Receiving booking with time is possible to be viewed by the admin allowing delete operation if needed .

5.3. Future Enhancement

- Payment Options: Implement eSewa and other payment providers with gift hampers.
- Enhance User Interface by adding more user interactive features.
- Provide Deals and promotional Offer details through home page.
- Provide Best Booking offer time of the Week/Day to Home Page.
- Allow to make booking as guest.

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[2] M. A. B. AZMAN, "FUTSAL MATCHMAKING SYSTEM," [Online]. Available: https://docplayer.net/130681309-Futsal-matchmaking-system.html. [Accessed April 2021].

[3] S. Gossett, "build in Beta," 27 October 2020. [Online]. Available: https://builtin.com/data-science/data-modeling-tools. [Accessed 20 August 2021].

[4] "Software Testing Help," 26 August 2021. [Online]. Available: https://www.softwaretestinghelp.com/system-testing/. [Accessed August 2021].

Appendix

- **Screenshot/User Manual**

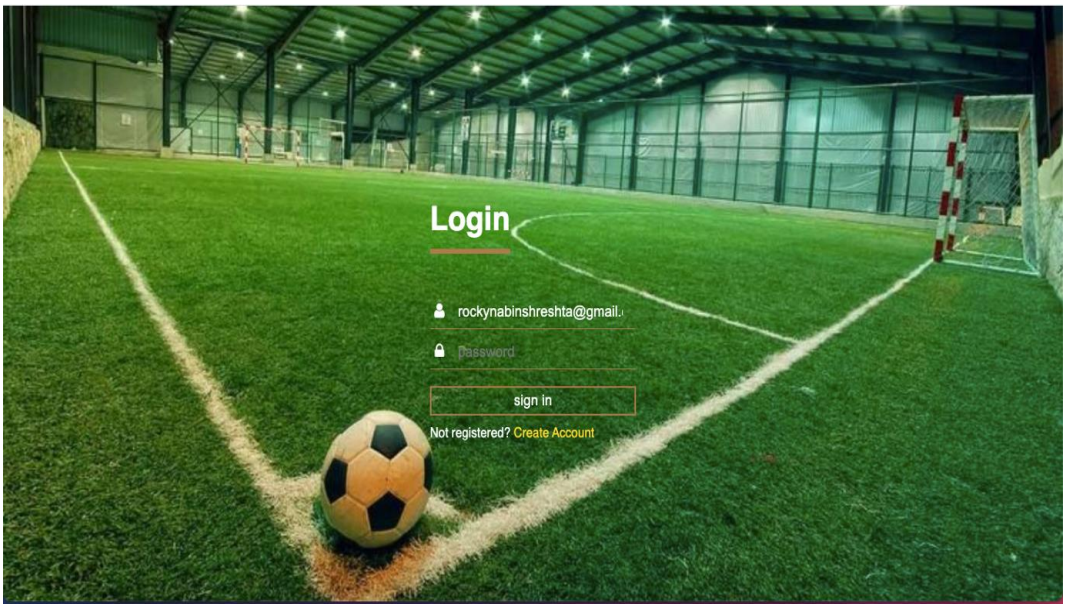

Figure 7.1: Login Page(Admin)

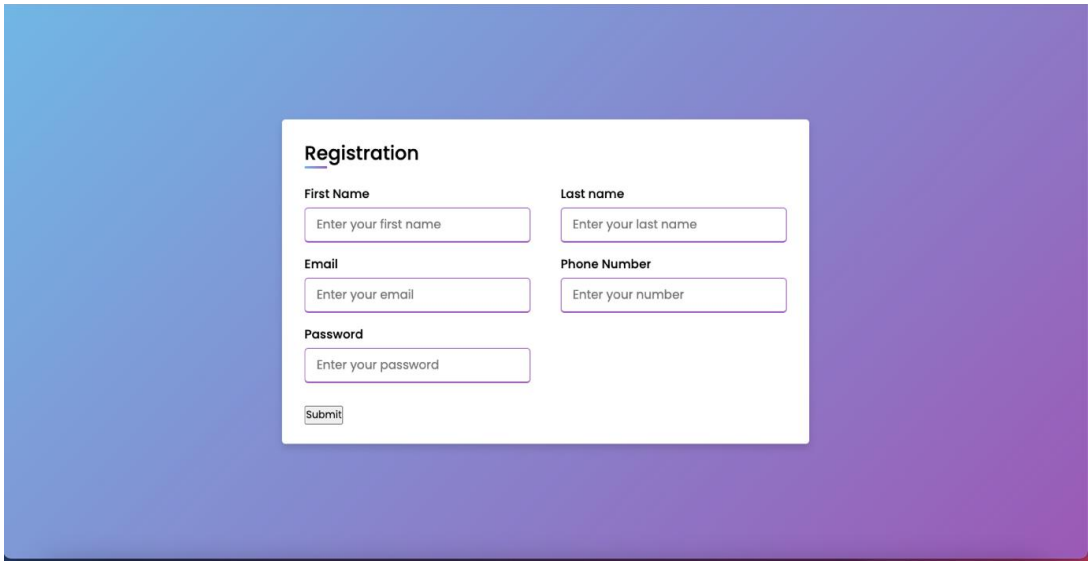

Figure 7.2: Admin Registration Page

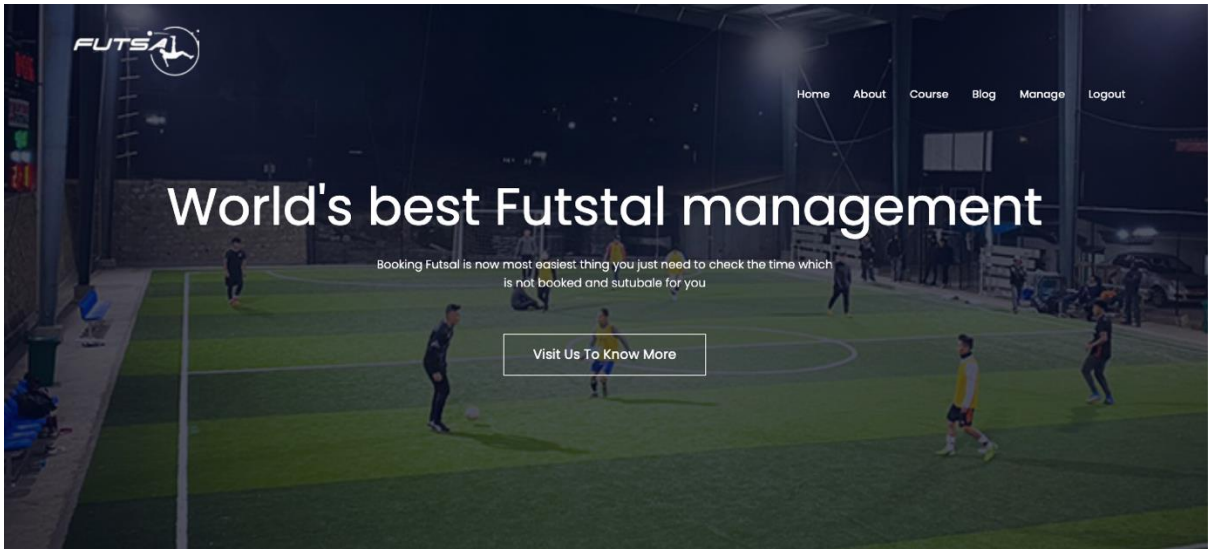

Figure 7.3: Admin Home Page

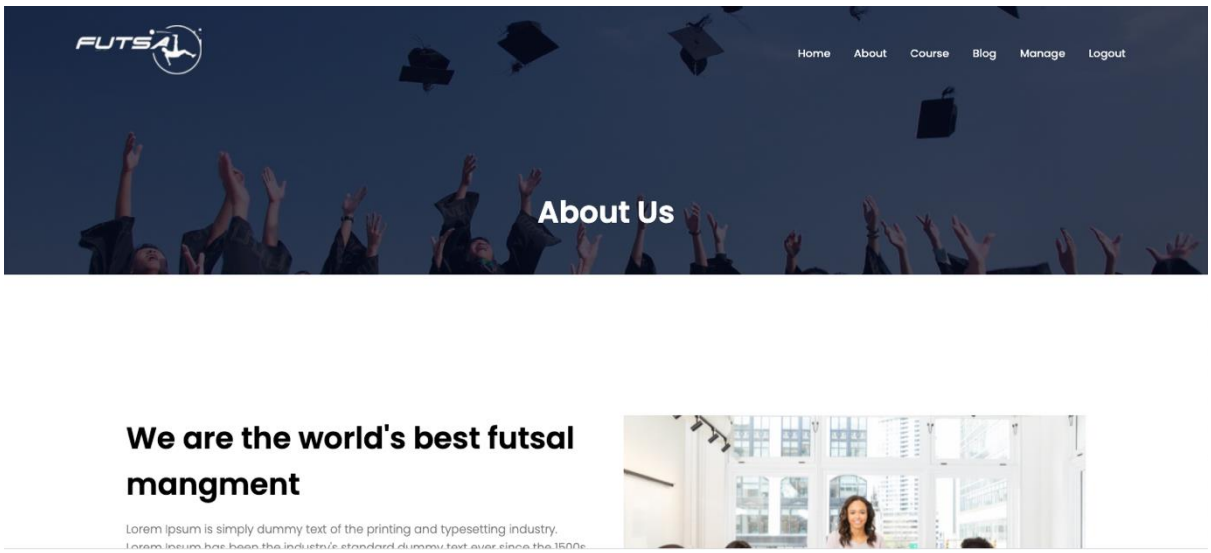

Figure 7.4: Admin About us Page

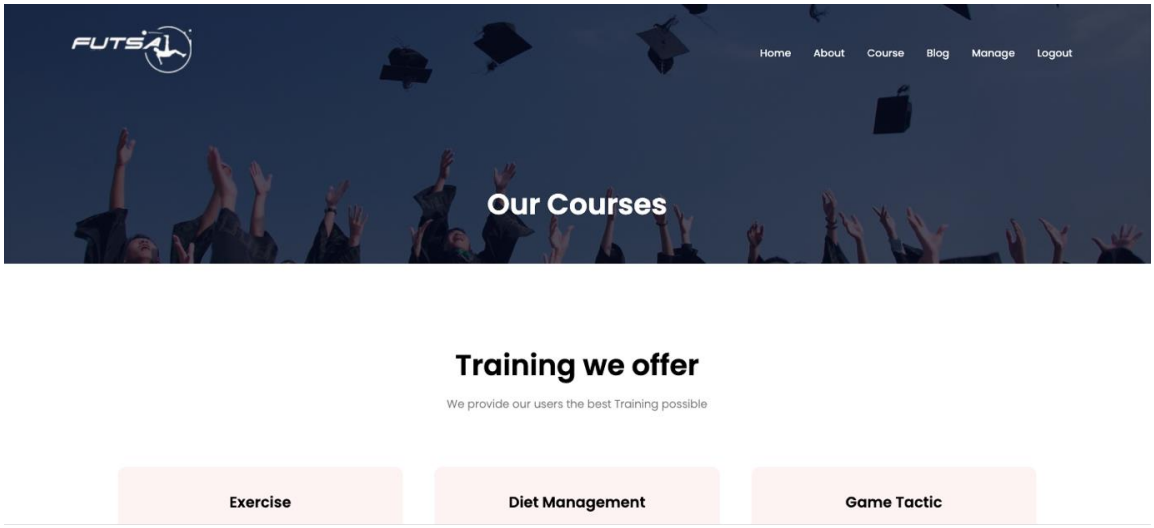

Figure 7.5: Admin Courses Page

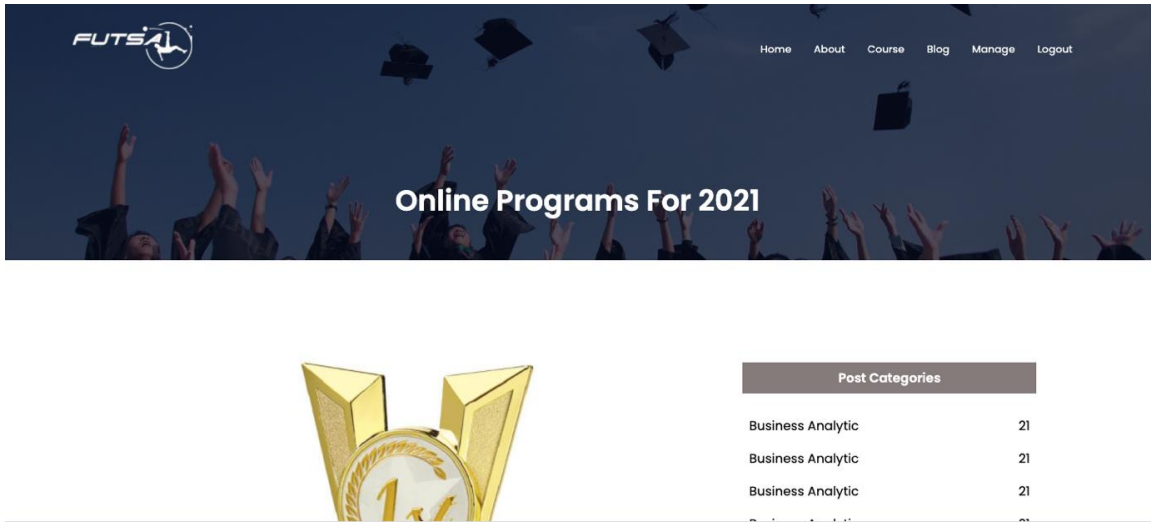

Figure 7.6: Admin Blog Page

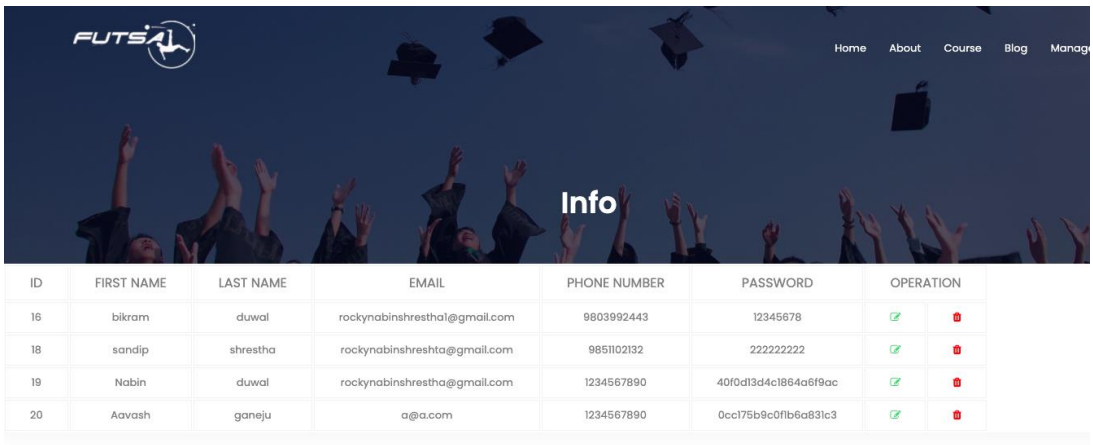

Figure 7.7: Admin Details Page

Figure 7.8: Admin Deletion

Figure 7.9: After Admin Deletion

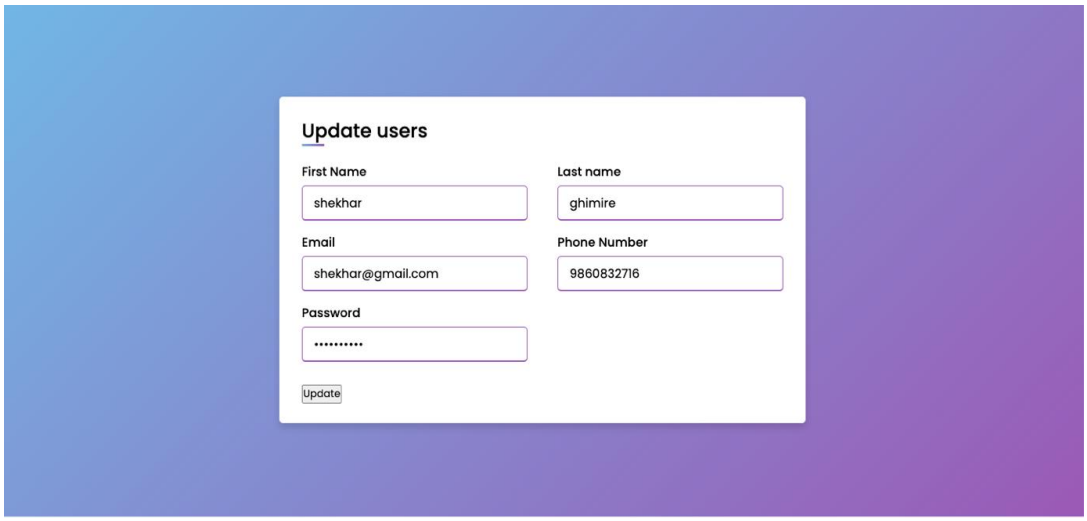

Figure 7.10: Admin Details Update Page

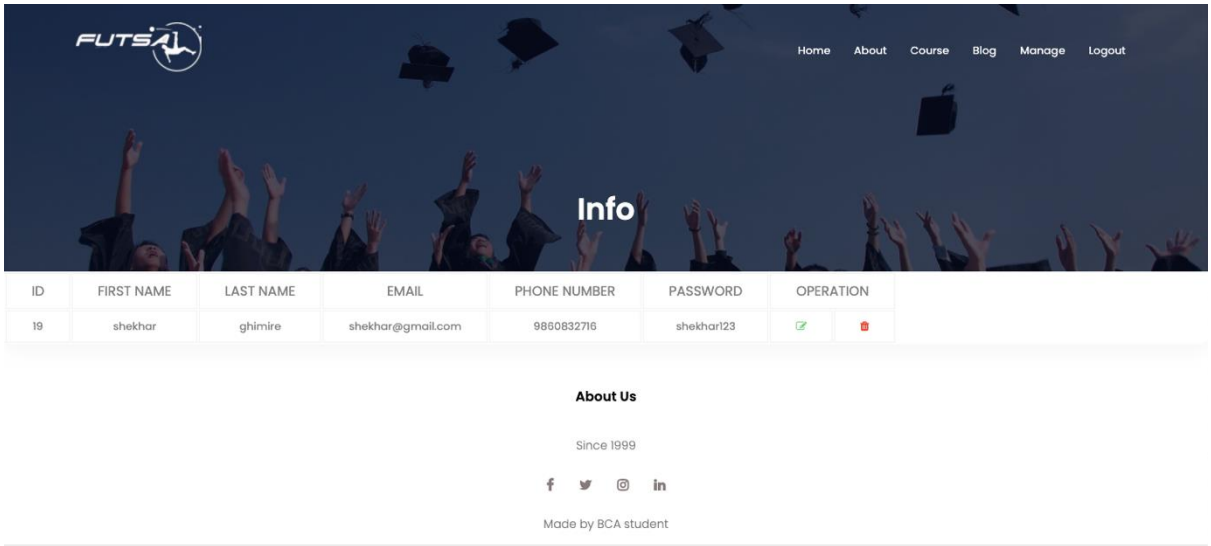

Figure 7.11: Admin Updated Page

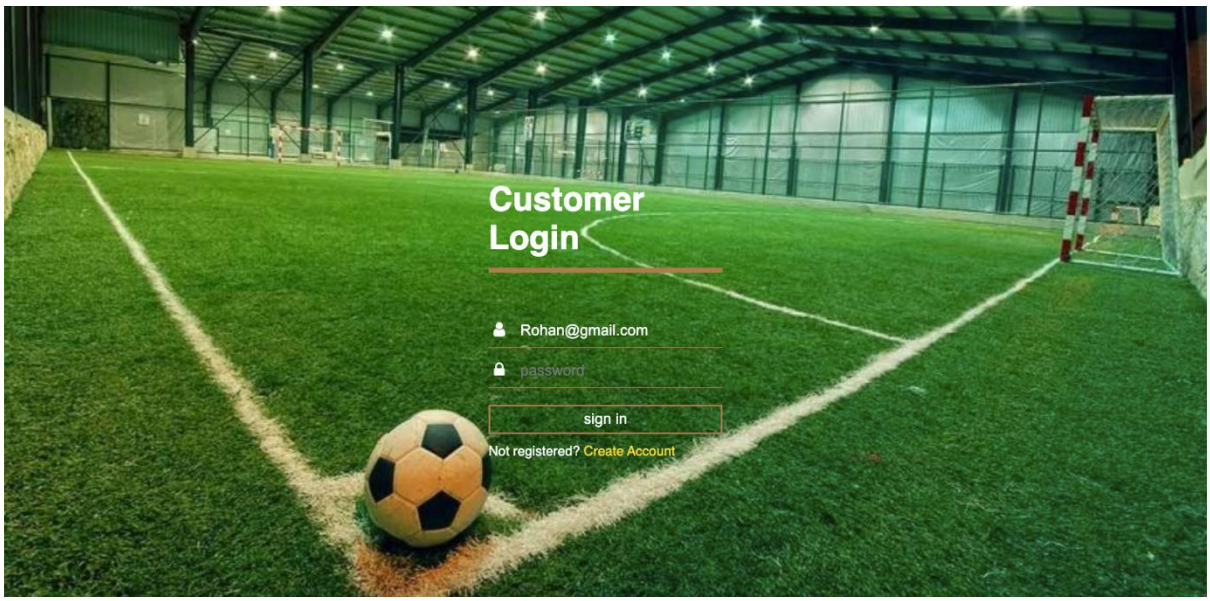

Figure 7.12: Customer Login Page

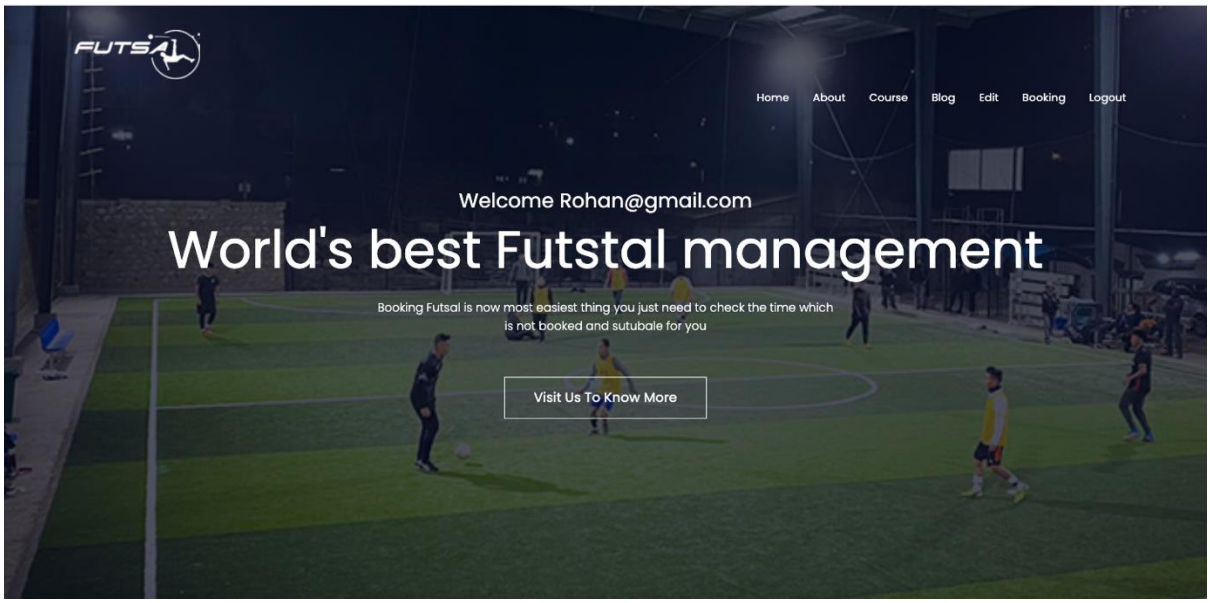

Figure 7.13: Customer Home Page

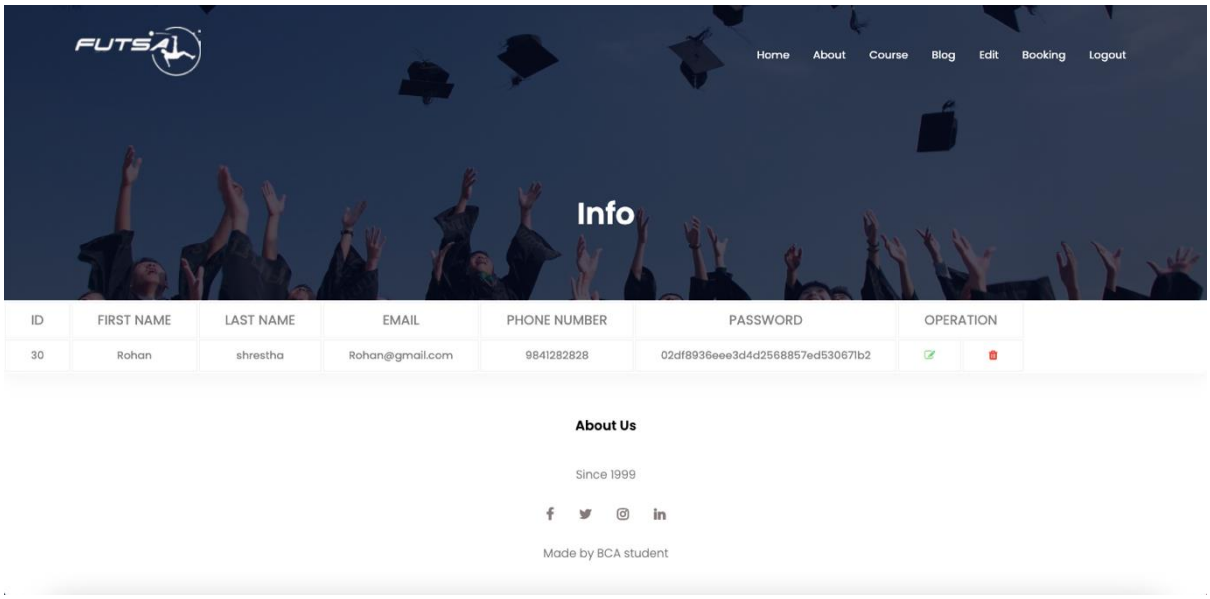

Figure 7.14: Customer Manage/Edit Page

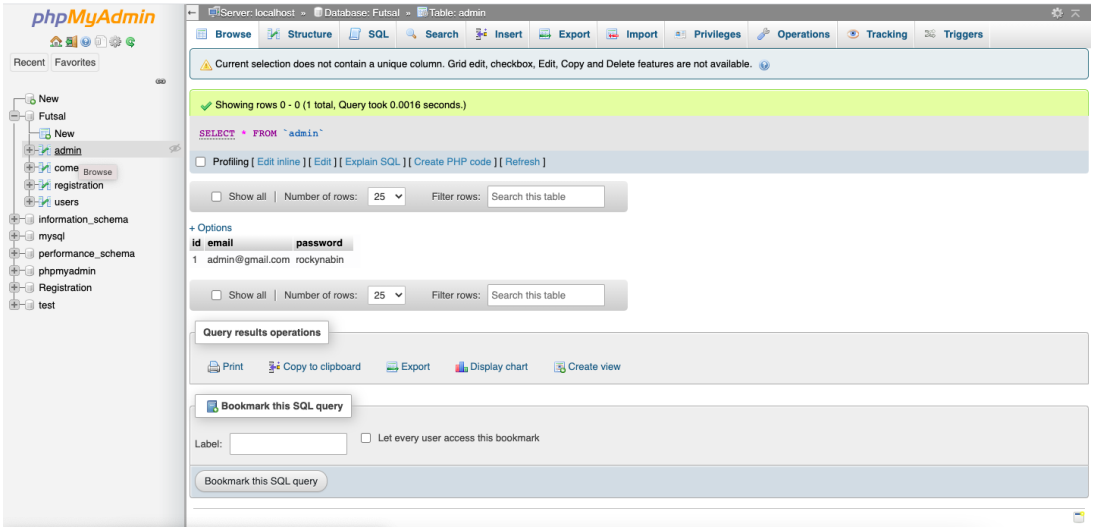

Figure 7.15: Admin Database

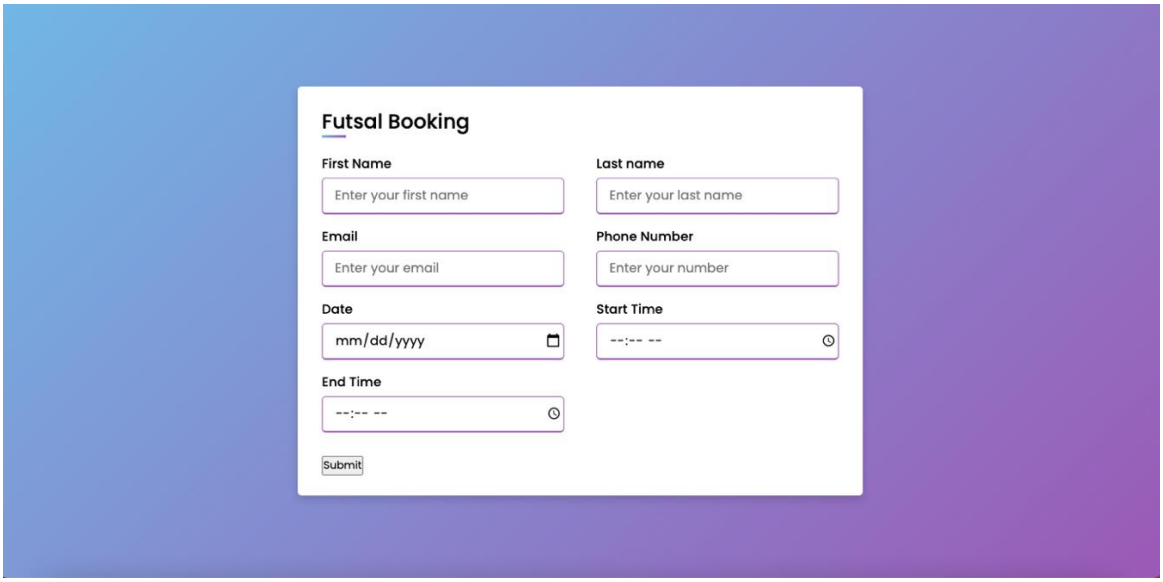

Figure 7.16: Customer Booking Details Page

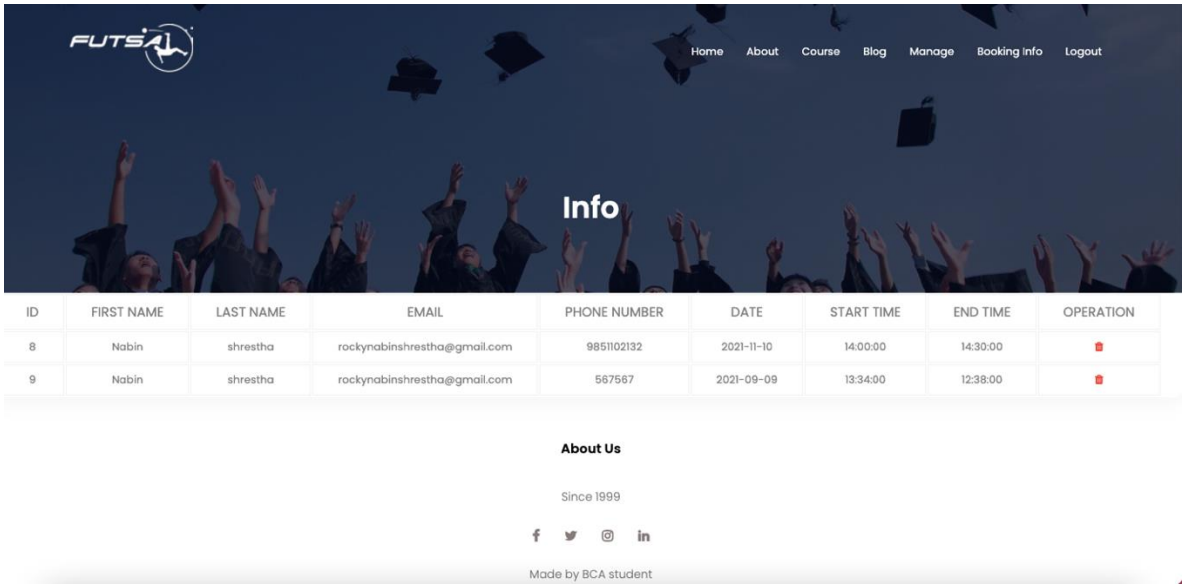

Figure 7.17: Admin Booking Managing Page

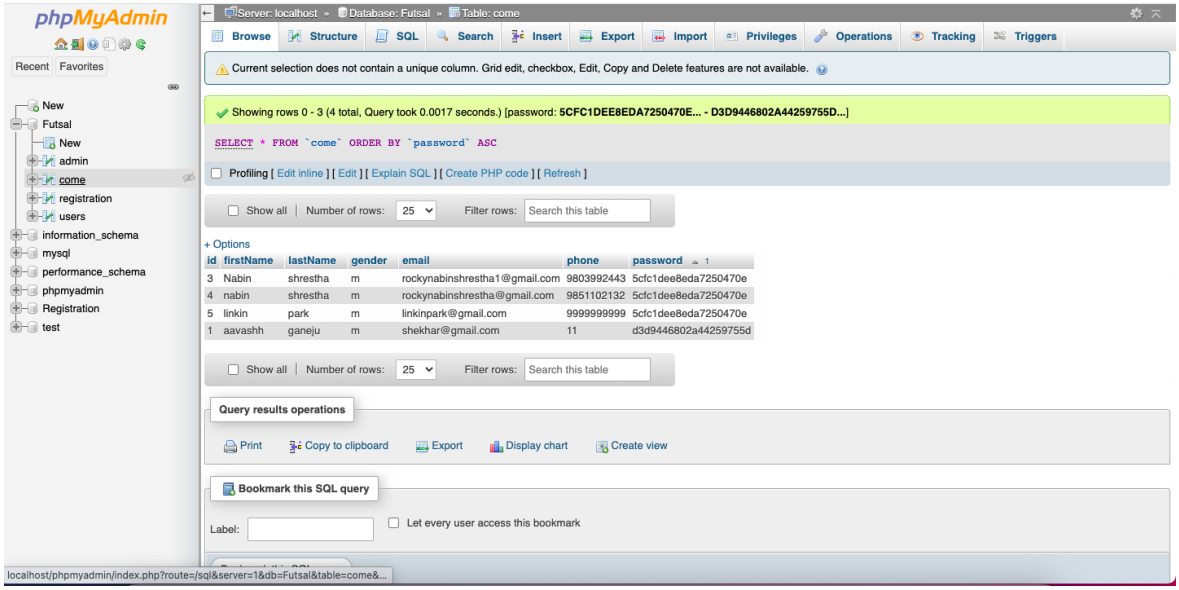

Figure 7.18: Customer Registration Database

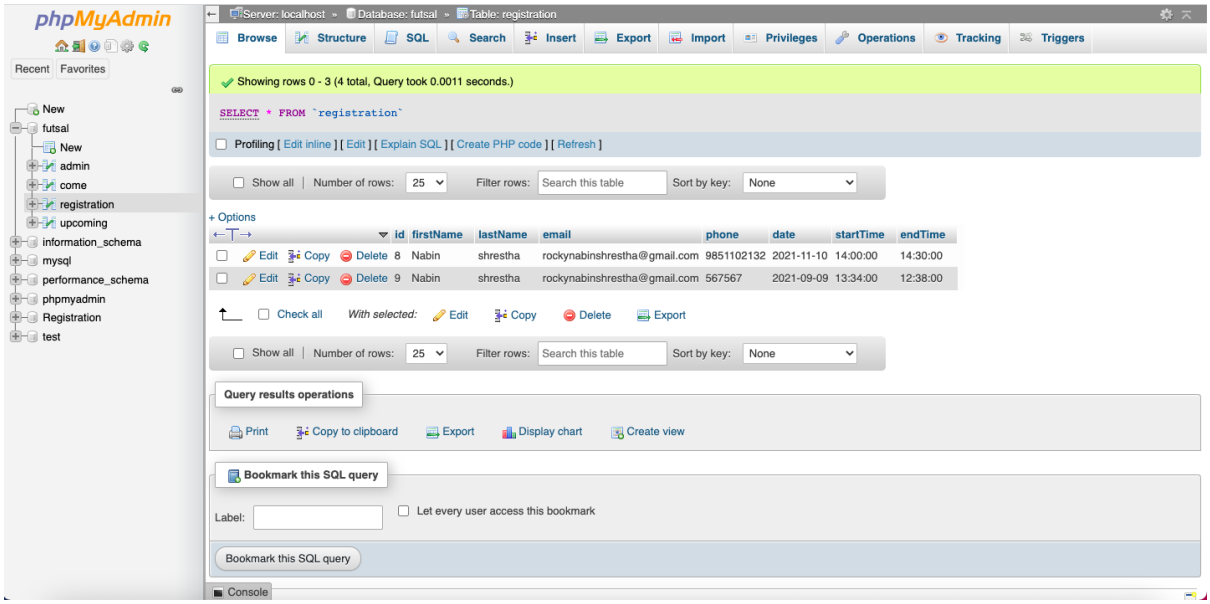

Figure 7.19: Booking Registration Database