Independent University **Bangladesh (IUB)**

IUB Academic Repository

Internship Reports Autumn 2022

2023-02-02

An Undergraduate Internship on Web Application Development of “Young Bird”

Taseen, Elan MD.

Independent University, Bangladesh

https://ar.iub.edu.bd/handle/11348/748

Downloaded from IUB Academic Repository

An Undergraduate Internship on Web Application Development of "Young Bird"

By

Elan MD. Taseen

Student ID: **1831050**

Autumn, 2022

Supervisor:

Mr. Mahmudul Islam

R&D Officer

Department of Computer Science & Engineering

Independent University, Bangladesh

February 2, 2023

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

Department of Computer Science & Engineering

Independent University, Bangladesh

Attestation

I, Elan Md.Taseen, hereby certify that none of the work that has been done in this report is plagiarized or copied from anywhere. Any resources used are mentioned in the reference section of the report. No help was asked for during the completion of the report from a third- party organization except the one that I have worked for in the last 4 months as an intern. For any information, my internship supervisor, Md. Hussain Ibrahim, at my company, Nascenia limited. , can be contacted on hussain@nascenia.com .

02.02.2023

Signature Date

Elan MD. Taseen

Name

Acknowledgement

I am very thankful to The Almighty for providing me the endurance and capacity to work hard, for allowing me to write my report, and for allowing me to conduct my internship at Nascenia Limited . My parents, too, for their unwavering love and support, which has nourished, fostered, and prepared me for this task. I would too like to specific my appreciation to Mr. Mahmudul Islam, R&D officer, Department of Computer Science Engineering, Independent University, Bangladesh, for his guidance and encouragement, compassion, time, insightful comments, and insightful advice regarding various aspects of my internship and preparation of reports.

Letter of Transmittal

02 February, 2023.
Mr. Mahmudul Islam.
R&D Officer
Department of Computer Science and Engineering
Independent University, Bangladesh.
Subject: Internship Report submission Autumn, 2022.

With due honor and respect, I,Elan MD Taseen Autumn, 2022, would like to submit my Internship report. This report is written to kindly inform you that I have completed my internship program and its report. My internship was conducted from 5th October 2022 to date. I completed my internship at Nascenia Limited. This report is based on my experience and the work I did at Group during my internship. The primary goal for my internship was to gain experience in all the different technology related fields of the company, including research and development,documentation,content-writing, software development, and to get acquainted with software development processes and practices.

Over the period of my internship at Nascenia Limited , I found out that I learned and applied a lot of new skills and technologies. The company comprises of a team, wholearn, collaborate, and innovate together.

I would like to thank you immensely for all your guidance and support. I hope and pray that this report fulfills all the requirements and is up to your expectations.

Sincerely,
Elan MD. Taseen
1831050

Evaluation Committee

Peyal 31/01/2022

Signature

Md. Mahmudul Kabir Peyal

Name

Internal Examiner-1 / Panel Member-1

Asif Bin Khaled

Signature

Asif Bin Khaled

Name

External Examiner-2 / Panel Member-2

Tahi

Signature

Mahmudul Islam

Name

Supervisor of the intern

Signature

Name

Head, Department of Computer Science & Engineering

Abstract

As part of my internship with Nascenia, I produced this report. I was a developer for Nascenia as an intern. But I was also included in other aspects of the project that I worked on as an intern for experience and educational purposes. My internship involved working on an travel agency project. My supervisor gave me advice throughout the entire project and the internship. I have included every project-related material that was created in this report. As I work on this project, I learn a lot of new things. I gained knowledge on how to successfully plan and finish a system from beginning to end while working on the development team. Learning how to construct a good system with Ruby serving as the back-skeleton ends were also included in the experience. It was incredibly satisfying to finally put what I had learned during my undergraduate classes into practice. However, I had to learn a few fundamentals first, which I believe was the most crucial aspect of this internship. I learned how to interact with coworkers at work and how to function as a team. But for my future, it was important to understand the office, corporate culture, and professional etiquette. Finally, because I had to contact and stay in touch with clients and other things while working on this project, I gained real-world experience. Overall, I learned a lot from my internship, which will undoubtedly be very beneficial for my future.

Contents

Attestation i

Acknowledgement ii

Letter of Transmittal iii

Evaluation Committee iv

Abstract v

1 Introduction 1

1.1 Overview/Background of the Work 1

1.2 Objectives 1

1.3 Scopes 2

2 Literature Review 3

2.1 Relationship with Undergraduate Studies 3

2.2 Related works 4

3 Project Management & Financing 5

3.1 Work Breakdown Structure 5

3.2 Process/Activity wise Time Distribution 5

3.3 Gantt Chart 7

3.4 Process/Activity wise Resource Allocation 8

3.5 Estimated Costing 9

4 Methodology 11

5 Body of the Project 13

5.1 Work Description 13

5.2 Requirement Analysis 13

5.3 System Analysis 17

5.3.1 Six Element Analysis 17

5.3.2 Feasibility Analysis 17
5.3.3 Problem Solution Analysis 19
5.3.4 Effect and Constraints Analysis 20
5.4 System Design 20
5.5 Testing 30

6 Results & Analysis **33**

7 Project as Engineering Problem Analysis **43**
7.1 Sustainability of the Project/Work 43
7.2 Social and Environmental Effects and Analysis 44
7.3 Addressing Ethics and Ethical Issues 44

8 Lesson Learned **46**
8.1 Problems Faced During this Period 46
8.2 Solution of those Problems 47

9 Future Work & Conclusion **49**
9.1 Future Works 49
9.2 Conclusion 50

Bibliography **51**

List of Figures

3.1 Work Breakdown Structure 5
3.2 Critical Path Method 6
3.3 Process wise Time Distribution Chart 7
3.4 Gantt Chart 8

4.1 Iterative Model 12

5.1 Rich Picture for "Young Bird" 15
5.2 Functional requirements - change password 15
5.3 Functional requirements - Add places by admin 16
5.4 Functional requirements - Add hotels by admin 16
5.5 Functional requirements - Add packages by admin 16
5.6 Functional requirements - Add rooms by admin 16
5.7 Login Process 21
5.8 Adding Places and uploading picture of Places 22
5.9 Adding Hotels and uploading picture of Hotels 23
5.10 Adding Packages and uploading picture of Packages 24
5.11 Adding rooms and uploading picture of rooms 25
5.12 System of Booking 26
5.13 System of Payment 26
5.14 Activity Diagram for Admin 28
5.15 Activity Diagram for User 28
5.16 Entity Relationship Diagram for "Young Bird" 29
5.17 Website Architecture for " Young Bird " 30
5.18 Input for "Young Bird" 31
5.19 O 32

6.1 For User 34
6.2 For Admin 35
6.3 Sign UP Page 36
6.4 Login Page 36

6.5 Home Page 37
6.6 Top Rated And Top Booked Hotels 37
6.7 Places 38
6.8 Packages 38
6.9 Package Details 39
6.10 Hotels 39
6.11 Search Rooms 39
6.12 Available Rooms 40
6.13 Booking System 41
6.14 Payment System With Credit Card 41
6.15 Creating And Writing Blogs 42

List of Tables

3.1 Activity Wise Resource Allocation 9
3.2 Costing 10

Chapter 1

Introduction

Internship provides a student an opportunity to relate their theoretical knowledge with the tough real world environments. I worked at a software company named "Nascenia Limited" where I have completed 3 months of my internship period. In this report, I have discussed my internship period at Nascenia Limited, an overview of the work I have done, my experiences working for a reputed organization, what I have learned and how it has helped me to develop and grow with a professional way.

1.1 Overview/Background of the Work

Normally in travel agency its very difficult to find all information in one place . thats why customer had to find so much difficulties in finding good agencies for travelling . even customer did not have much idea about hotel pricing . so they needed something from where they would get all information in one place and which will be very much easy to use . So This automated online system will bring all the necessary information in one place . Users don't need to search to different website to know about different tours . that's why people will be benefited very highly . this will also reduce their cost . as previously people used to waste a lot of money agents . but in this website people don't need waste any money on agents . they can buy package with a very legitimate amount of money . which will be user friendly .

1.2 Objectives

The main motive of "Young birds" travel agency system is to provide the customer a hassle free tour and easy going tour . From where a tourist can get all the necessary things in one website .This website can become a easy way for a customer buy a to book hotels, flight, train and bus ticket for tour purposes . In this Website , We want make an easier hotel booking system and there will be some package , where users will be

able to buy packages according to their wishes . The tourist places will be mainly based on Bangladesh and India .They can buy different packages for a tourism place . They can go solo . Or by a group . normally in travel agency its very difficult to find all information in one place . thats why customer had to find so much difficulties in finding good agencies for travelling . It is very difficult for a customer to plan a journey because hey dont exactly where to go and which place to visit Our goal is to make travel easy for the users . this tourism industry is hugely upgrading nowadays .and this industry has a lot of opportunities to do great business . By giving good customer support this web application can do great job in enhancing this tourism industry .

1.3 Scopes

This web based travel agency system will permit to register agent(admin) and user. It also provides log in page after registration process. It provides different user interface with different functionality for admin and users. Users can choose different packages for their desired tourist place . Users can see different kinds of hotels with price variation . Users will be able to buy ticket from the website . They can see blog of a tourist place from this website to get to know more about their desired tourist place where people have shared their view on a place . They gave rating . They will also be able to watch videos of a place to know what they can expect from this place . They can directly message and email to the admin to know more about a trip . They can complain about their problems in the complain box . Only Admin will be able change the price tag for hotels ,tickets and tour packages . and he will be able see all the package , tour, hotel and ticket bookings .

Chapter 2

Literature Review

A literature review is kind of a preview or summary of a research which has been done previously . a gives us a history of the working process like what work has been done so far for this project .

2.1 Relationship with Undergraduate Studies

Knowledge and skills gained from undergraduate courses have helped in the development of " Young Bird" Travel agency project. It would have proven more difficult if these courses were not covered before working on this project. Some of the courses are:

• CSE 203- Data Structure:
This is the most basic course that helped us with the ideas of several data structures and their applications such as Stack, Queue, Linked List, Array, Pointer and so on .The skills we got from this course has made handling our job much easier .

• CSE 213- Object-Oriented Programming:
In the developing industry most of the data is represented as an object which was covered in this course. The use of classes and and objects are very much demanding while making any web applications, mobile applications . It also taught how to write modular programs which made codes less repetitive and more reusable.

• CSE 303- Database Management:
This was the course that taught me how to design and plan a project. It covered popular planning and strategy practice such as six element analysis, Problem Analysis, System Development Life Cycle, Rich Picture, Requirement Analysis, Entity Relationship Diagram, Business Process Model, Normalization , dictionary and many more

• CSE 307 - System Analysis and Design:

This course teaches us about functional requirements , use case diagram , non functional requirements . activity diagram etc . this is course where we have learned about analytical things .

•CSE 309- Web Applications and Internet:
This is the course where the development of web applications was taught. It covered very important technologies that are highly in demand in the industry, such as HTML, CSS, Bootstrap, JavaScript,jQuery, Json . all these thing will now help to build a web application . Now it will be very easy for me to use bootstrap for the frontend in my web application .

2.2 Related works

Obokash :
obokash is completely focused on perfect tourism . they have to knowledge of the destinations all around the world . This is one of the leading tour operator in Bangladesh
(https://www.obokash.com)

Amazingtoursbd :
Amazing Tours is one of the leading tour operator in Bangladesh . It has started his journey in 2009 with a view to develop sustainable tours to various destinations in this beautiful Bangladesh and as such you can meet the generous peoples of this country.
(https://www.amazingtoursbd.com)

Talon :
Talon works for the new generation . they work to create the tourism more easygoing . they work with perfect planning .they take preparation for it accordingly . they are now one of the front runners in this business
(https://www.talon.com.bd)

Sharetrip :
Sharetrip is also one of the leading tour operator in Bangladesh . They made it Affordable and easy for the users to travel .
(https://news.shapretri.net)

Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

When we break bigger task to smaller tasks then it is known as work break down structure . work break down structure is very important to work efficiently . it makes a project more manageable . workers can get perfect idea about what to do .

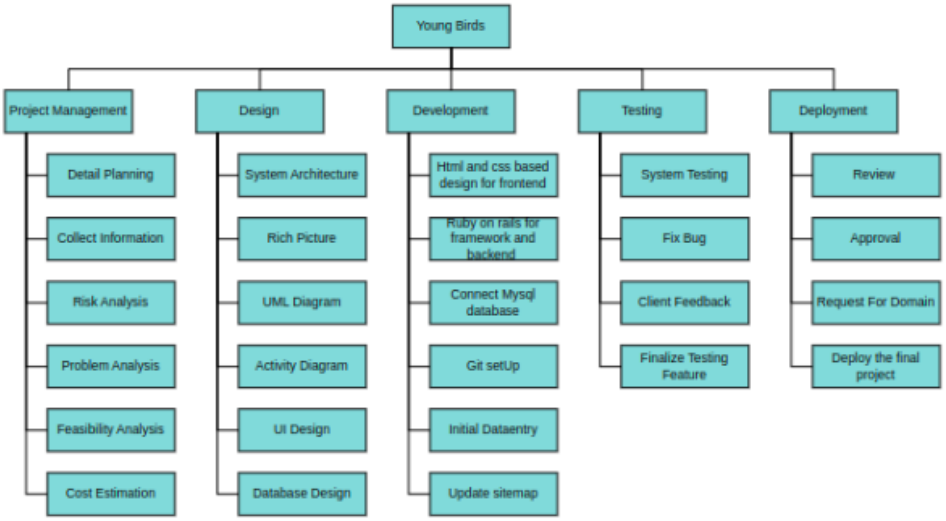

Figure 3.1: Work Breakdown Structure

3.2 Process/Activity wise Time Distribution

The venture will take around 80 days to total, and the forms of each organize are isolated agreeing to that. The time conveyance was made using the basic way strategy. The primary way strategy (CPM) may be a methodology for determining plan adaptability and distinguishing exercises required for project completion. In venture administration,

a basic course is the longest arrangement of operations that must be completed on time in arranging for the extend to be completed.

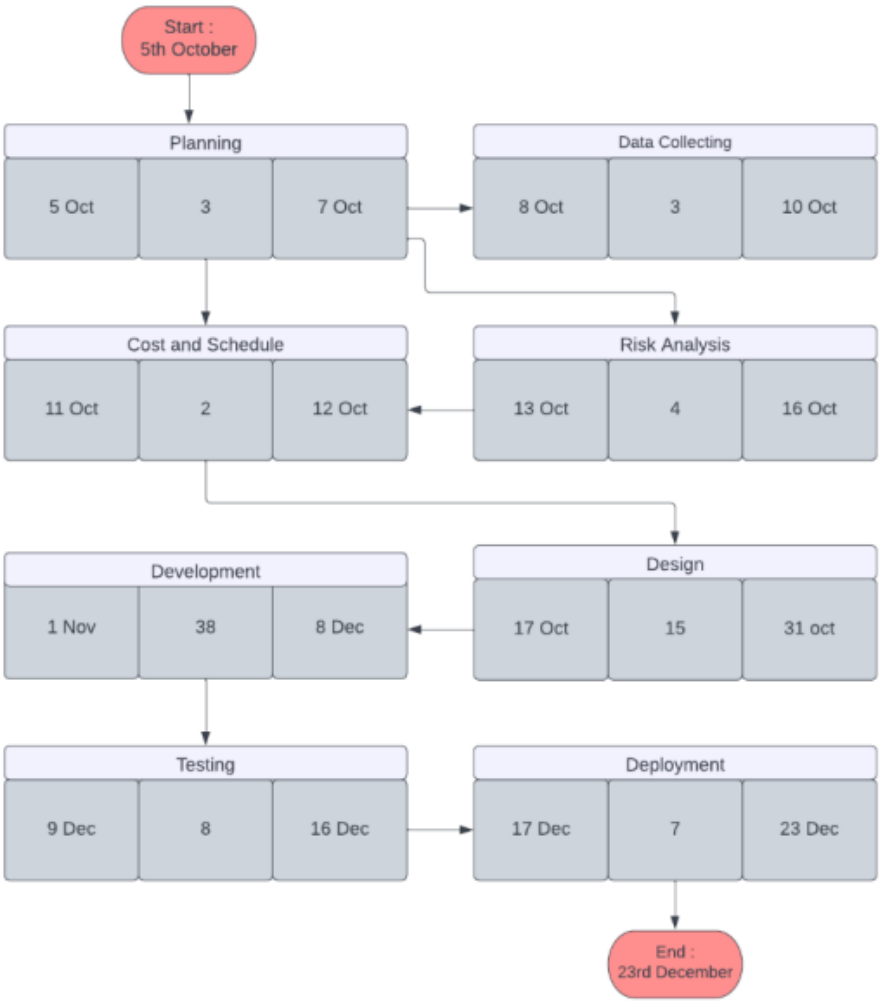

Figure 3.2: Critical Path Method

Here, we need 3 days for project planning, 3 days for data collecting, 4 days for Risk analysis and 2 days for Cost and scheduling. These four are the part of Project management and it considered 15days for designing which is considered 18.75need 8 days (10for Deployment of the project.

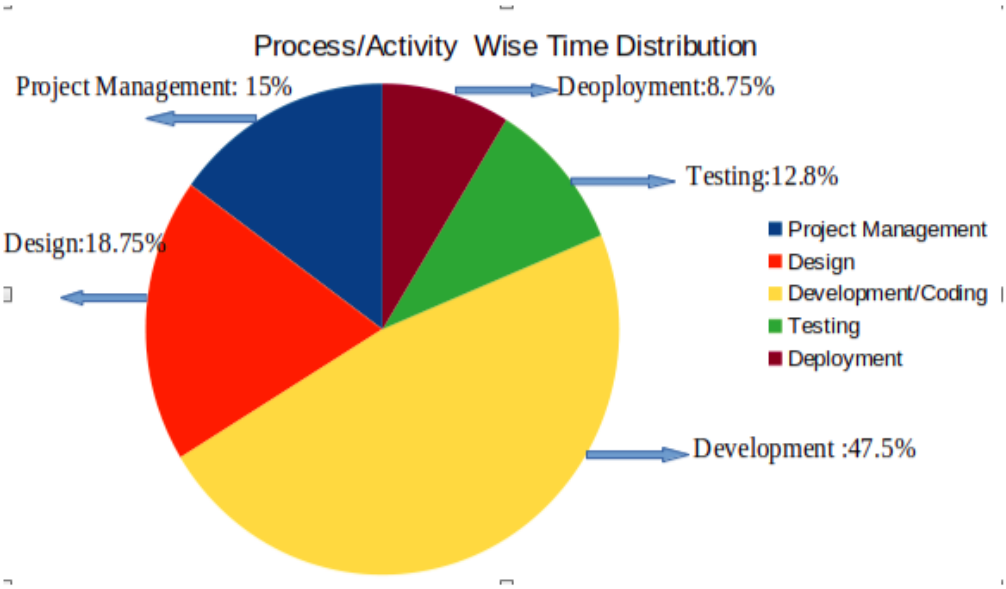

Figure 3.3: Process wise Time Distribution Chart

3.3 Gantt Chart

A Gantt chart, which is broadly utilized for extend administration, is among the most prominent and viable ways to portray exercises (assignments or occasions) against time. A list of the exercises may be found on the cleared-out side of the chart, and an appropriate time scale can be found along the beat. Each activity is spoken to by a bar, whose location and length show the activity's begin, term, and conclusion dates. Gantt charts are used for the following purposes:

- It helps the entire project to be broken down into small tasks.
- A person can know when a project will start and end.
- Monitor and report progress.
- Display milestones and show key events.
- How long a task is suppose to continue.

Figure 3.4: Gantt Chart

Figure 3.4: Gantt Chart

3.4 Process/Activity wise Resource Allocation

This project was broken into numerous stages and phases. As a result, a specified number of staff were assigned to each process or activity, along with funding allocation. For this project, we need total 80 days for building thewhole system. Following are the details of every step of the project: Project management : Project management is the first stage or task. This is where the project's basic idea and purpose, as well as all of the details, are presented. It required 12 working days to handle all of the attributes for this project so that it could begin construction as soon as possible . First 6 days are for requirement analysis and next six days are for planning .

Me and my mentor at Nascenia spent the first few days debating how the project should be built and what language(s) would be used from top to bottom. The project is then broken down into sub-tasks so that time allocation may be planned. Setting goals and other deadlines makes it easier for us to plan and execute the tasks on the project. I also focused on the needs of my clients and conducted some market research. This following part consumed 15 percent of the total work.

• **Designing:** This process will be focused On the Ui design . right now i am working one this part . i am trying to make few diagrams , erd's to plan perfectly for the project . So that in the middle of the project I don't get confused . This following part is one of the most consuming part and consumed 18.75 percent of the total work.

• **Development:**
In this stage, all the planning and designing will be done. Now the entire application will

be implemented into framework and test hundreds of times step by step to verify each and every changes that are made to the application. Both the front-end and the back-end will be developed and will be tested as there can be some changes . At first the front-endis build using embedded Ruby and css and bootstrap and then is connected with the Ruby on Rails framework which is going to handle the back-end task of the application. For the Database MYSQL will be used . Finally all the logic of every front-end page are written down in Ruby using Rails and tested on every changes. This implementation is a long process and it will consume 47.5 percent work of the entire project. Also it will take 38 days to complete this task.

• **Testing:**
For each venture, there's a partitioned testing framework. They ordinarily have 1-2 group individuals. In spite of the fact that the engineer performs various tests as portion of the usage, the project's last testing must be performed by the SQA Of the company. This testing will take put in all of the conditions that are required for the test. On the off chance that troubles are found amid the test, the venture will be returned to the designers, beside the issues found, for redress and, in the event that vital, encourage Usage.

• **Deployment :**
After testing it will be time for Deployment , For deployment, a VPS (Virtual Private Server) and a domain Will be bought to deploy the application on a live server. This will take around 7 days which is almost 40 hours of works and considered 8.75

Activity	Days	Work Percentage
Project Management	12	15%
Design	15	18.75%
Developing	38	47.5%
Testing	8	10%
Deployment	7	8.75%
Backend Developer	80	100%

Table 3.1: Activity Wise Resource Allocation

3.5 Estimated Costing

Costing is calculated by the requirements and features that is going to be offered for the following project .The requirements and features of the project depends on the size, func-

tionalities and design of the website including prototype(s) of the project, designing necessaries(themes, logo designs, custom pictures, etc.), total number of pages, SEO(search engine optimization), database, authentication, etc. Also the cost of developer and resources used have been taken into account. For the entire project, the final estimated cost was 2, 21,100, two lac , twenty one thousand and one hundred BDT.

Features	Costs
Internet Bills	6000
Domain Bills	3500
Hosting Bills	1600
project Manager	50000
Ui/Ux Designer	20000
Frontend Developer	60000
Backend Developer	80000
Total Costs	221100

Table 3.2: Costing

Chapter 4

Methodology

Methodology helps us to get the reliabilty and validity of a topic . Its a study of method that we use to study for a research . When we choose a specific technique to analyze a topic then it is known as Methoodlogy Methodology refers to the overarching strategy and rationale of our project. It involves studying the methods used in our field and the theories or principles behind the selection process to develop an approach that matches our objectives. The methodology is a system of methods that we use in a specific area of study or activity. The methodology is the detailed procedures used to identify, select, process, and analyze information about a subject. The website I have worked on is one of the most complete and fully functional websites, and it is developed using modern web technologies.

Software Development Methodology :
Software Development life cycle (SDLC) is one kind of process which we use to design a system . It is a spiritual model used in project management that defines the stages include in an information system development project, from an initial feasibility study to the maintenance of the completed application. [2] There are different software development life cycle models specify and design, which are followed during the software development phase. These models are also called "Software Development Process Models." Each process model follows a series of phase unique to its type to ensure success in the step of software development.

Iterative Methodology:
we need to create a early prototype for this method . so that the workers can talk and discuss about it . in this method we can build or create a product in different phases . in every phases we can check and review it . for that reason worker can check their at the very beginning

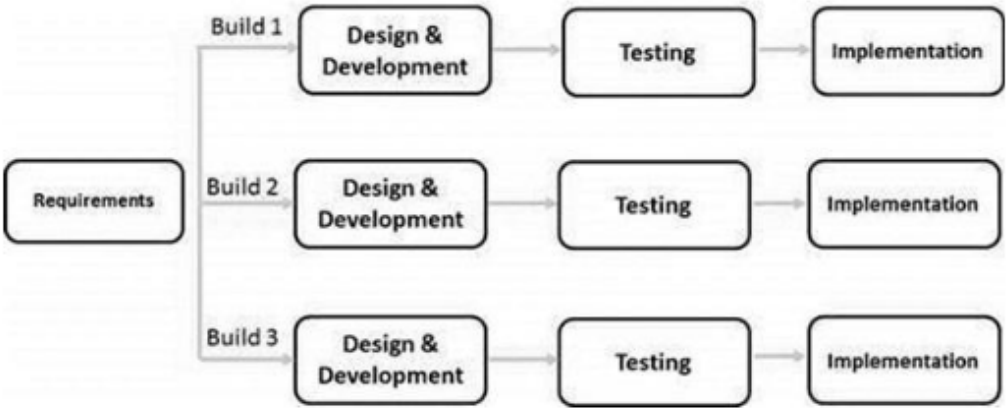

Figure 4.1: Iterative Model

This is how the iterative model works .

Reasons for choosing Iterative methodology :

1. Potential defects are spotted and dealt with early .
2. Functional prototypes are developed early in the project life cycle .
3.If the client want to change anything then it is easy to change
4. Less time is spent on documenting and more on designing . we don't need to spent too much on design and documentation . We can quickly move forward to development.
5. Progress is easily measured : in this method progress can be easily measure because this iteration method depends on a certain number of specific requirements.
6. Changes to project scope are less costly and easier to implement . because there certain set of requirements . In every short stage we can preview the progress . That's why if we need any changes in the project . It doesn't cost us much money
7. Testing,fixing bugs debugging is very easy in this method : as iterations in iterative method is small that's why its easier to test .
8. Parallel development can be planned.
9. when they show their sketches to the client they can get feedback from them 10 . Risk determination is easy in this method

Chapter 5

Body of the Project

5.1 Work Description

"Young Bird" is a travel agency management system where user can easily book hotel rooms , can easily buy packages . This system consists of four modules

1.Registration and Login: Where User can create his account and Login an account with their email and password.
2. Searching Place: Where User can search places
3. Searching Hotels/Packages: Where User can check all the packages or all the hotel
4. Searching Available rooms: by using filters , by using check in date and check out date user check the available rooms in his selected hotels .

5.2 Requirement Analysis

In six elements analysis, we take a certain process and analyze it to find all the six elements that are connected to that particular process. For this project, we had to analyze 5 particular processes to find out more about them, which could be helpful for future developments. The quick development of the social organize hypothesis gives a modern viewpoint for the inquiry about counter-terrorism, be that as it may, current inquiry generally relates to psychological militants and fear-based oppressor organizations. Firstly, the "six-element" examination strategy for fear-based oppressor exercises based on the social systems is proposed in this paper, to be specific, an assortment of sub-networks are built agreeing to the relationship among the six elements—people, organization, time, area, way and occasion. These sub-networks are evaluated by utilizing centrality examination, cohesive subgroup examination, spatial relationship investigation, immunity investigation, and graphic measurement investigation; the characteristics and laws of psychological militant exercises are uncovered from a few diverse points of view .

A project feasibility report is a detailed assessment that evaluates each of a project's 5 areas of assessment. Well-designed feasibility analysis can include information on the company's or project's history, a detail of the goods or service, accounting records, management details, sales forecasting and practices, financial statistics, legal needs, and tax duties. A possibility ponder is conducted to decide whether the venture, upon completion, will serve the organization's reason for the sum of work, exertion, and time went through on it. A possibility ponder empowers the engineer to imagine the project's future and value. An achieve ability think about assesses a framework proposal's work ability, which incorporates the affect on the organization, the capacity to meet client needs, and the productive utilize of assets. To decide the practicality of an thought, a achieve ability ponder is conducted. For case, it can be used to decide whether a venture is lawfully and in fact doable and financially reasonable. It demonstrates whether or not a extend is worth contributing in; in a few cases, it demonstrates whether or not a venture will be completed. Achieve ability thinks about empower businesses to distinguish and organize all of the subtle elements that are required to create a trade fruitful in arrange to maximize benefits. A possibility ponder helps in distinguishing calculated issues, as well as about all other business-related issues and their resolutions. Moreover, achieve ability ponders can result within the improvement of showcasing procedures that convince financial specialists or a bank that investing within the commerce may be a sound venture. A achieve ability think about is conducted to decide the practicality of a proposed framework in terms of specialized.

Rich Picture

From rich picture we can get idea of the project . Its way to define and explore a project . they are also known as situation summaries . From where some one can get the summary of project very easily .

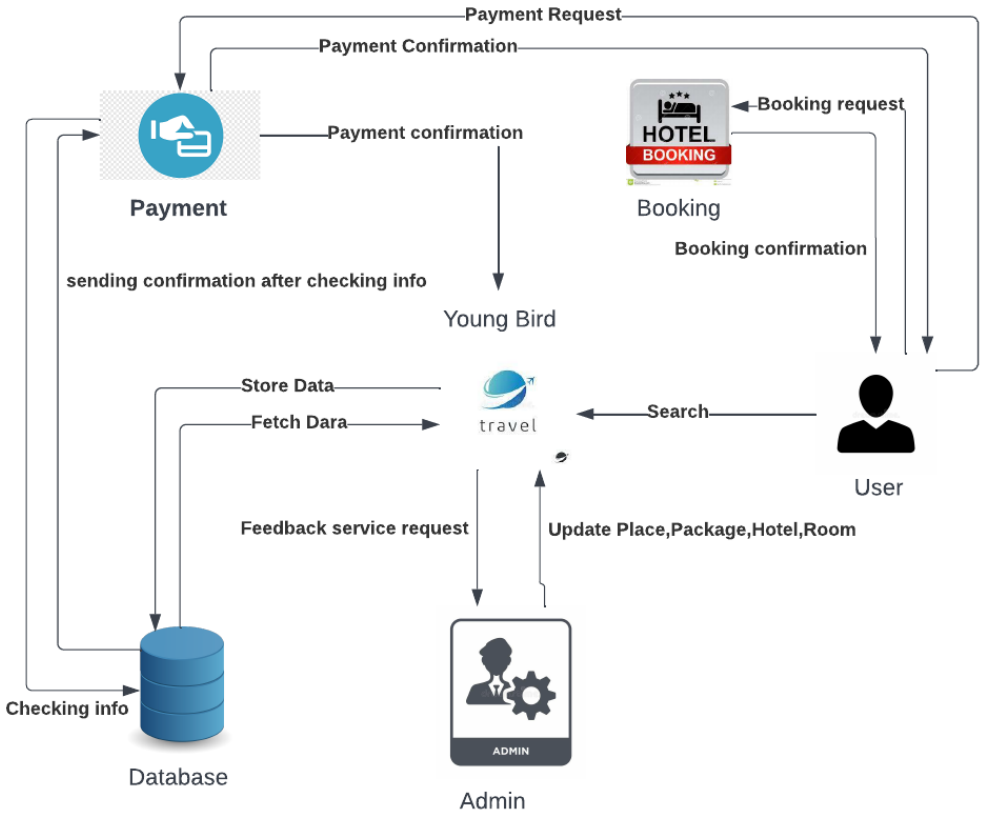

Figure 5.1: Rich Picture for "Young Bird"

Functional and Non-Functional Requirements

Funtional Requirements :

Function : Log In		
Input : Username/ email, password.	Process : Check the log in data and database .	Output : Show user interface successfully
Precondition : User must have internet access with browser .		
Postcondition : User will get error message		

Figure 5.2: Functional requirements - change password

Function : Add places by admin		
Input : place name	Process : Add places and save	Output : Show places successfully
Precondition : User must have internet access with browser .		
Postcondition : User will get error message		

Figure 5.3: Functional requirements - Add places by admin

Function : Add hotels by admin		
Input : hotel name	Process : Check the log in data and database .	Output : Show all hotels successfully
Precondition : User must have internet access with browser .		
Postcondition : User will get error message		

Figure 5.4: Functional requirements - Add hotels by admin

Function : Add packages by admin		
Input : package name	Process : Check the log in data and database .	Output : Show all packages successfully
Precondition : User must have internet access with browser .		
Postcondition : User will get error message		

Figure 5.5: Functional requirements - Add packages by admin

Function : Add rooms by admin		
Input : room no	Process : Check the log in data and database .	Output : Show all interface successfully
Precondition : User must have internet access with browser .		
Postcondition : User will get error message		

Figure 5.6: Functional requirements - Add rooms by admin

Non-Functional Requirements :

1. System must be web based.
2. All the data transferred to the server or vice versa must be encrypted and secure.
3. Any loading page will support 5000 users per every hour

4. Databases should be able to keep at least 100,00,000 users account information.
5. All the databases must back up every 3 hours.
6. The system should be serviceable, future upgrades and updates should be easy to be deployed.
7. System should be really secured, SSL/TLS protocol security should be applied.
8. The whole system must be regulated, must comply under the law of government and international laws.
9. Usability must be very high and for all ages of users.
10. Users should not find the website patronizing or vague.
11. Every unsuccessful attempt by a user to login to the system should be recorded.
12. Information privacy should be audited,, technologies should be restricted .
13. Every login and logout time must be recorded and kept in the system.
14.The website should be as minimalist as possible.
15.The website should be easily maintainable and cost efficient to maintain.

5.3 System Analysis

5.3.1 Six Element Analysis

In six elements analysis, we take a certain process and analyze it to find all the six elements that are connected to that particular process. For this project, we had to analyze 5 particular processes to find out more about them, which could be helpful for future developments. The quick development of the social organize hypothesis gives a modern viewpoint for the inquiry about counter-terrorism, be that as it may, current inquiry generally relates to psychological militants and fear-based oppressor organizations. Firstly, the "six-element" examination strategy for fear-based oppressor exercises based on the social systems is proposed in this paper, to be specific, an assortment of sub-networks are built agreeing to the relationship among the six elements—people, organization, time, area, way and occasion. These sub-networks are evaluated by utilizing centrality examination, cohesive subgroup examination, spatial relationship investigation, immunity investigation, and graphic measurement investigation; the characteristics and laws of psychological militant exercises are uncovered from a few diverse points of view .

5.3.2 Feasibility Analysis

A project feasibility report is a detailed assessment that evaluates each of a project's 5 areas of assessment. Well-designed feasibility analysis can include information on the company's or project's history, a detail of the goods or service, accounting records, management details, sales forecasting and practices, financial statistics, legal needs, and tax

duties. A possibility ponder is conducted to decide whether the venture, upon completion, will serve the organization's reason for the sum of work, exertion, and time went through on it. A possibility ponder empowers the engineer to imagine the project's future and value. An achieve ability think about assesses a framework proposal's work ability, which incorporates the affect on the organization, the capacity to meet client needs, and the productive utilize of assets. To decide the practicality of an thought, a achieve ability ponder is conducted. For case, it can be used to decide whether a venture is lawfully and in fact doable and financially reasonable. It demonstrates whether or not a extend is worth contributing in; in a few cases, it demonstrates whether or not a venture will be completed. Achieve ability thinks about empower businesses to distinguish and organize all of the subtle elements that are required to create a trade fruitful in arrange to maximize benefits. A possibility ponder helps in distinguishing calculated issues, as well as about all other business-related issues and their resolutions. Moreover, achieve ability ponders can result within the improvement of showcasing procedures that convince financial specialists or a bank that investing within the commerce may be a sound venture. A achieve ability think about is conducted to decide the practicality of a proposed framework in terms of specialized, operational, and financial variables. After conducting a possibility ponder, we will pick up a clear understanding of the system's focal points and impediments.

Technical Feasibility

The proposed system is developed using the front-end tools Active Server Page,Ruby , Java Script, HTML, Css and Bootstrap and the back-end tool Ruby and My Sql Database. And Ruby On Rails is used as the framework . The proposed system requires a Personal Web Server to process user requests. The Web browser is used to access web pages contained within the Windows operating system. The proposed system will run on Windows 10, Windows 9, Windows 9x, Windows NT, and Windows 2000. Because Windows is a very user-friendly and graphical operating system, it is extremely simple to use. All necessary hardware and software are commercially available. As a result, the system is technically viable

Operational Feasibility

The proposed system is operationally feasible for the reasons listed below.

- The customer benefits the most because the majority of his time is saved.
- The customer is attended to at his place of employment. ‘
- The proposed system's cost is almost insignificant in comparison to the benefits gained.

Economic Feasibility

the needed hardware and software cost is very low, the initial investment is the only cost

and does not require further enhancements. As a result, it is economic. The system is feasible in every way, which encourages participation in the design process.

Legal Feasibility
This assessment explores on the off chance that any component of the arranged extend damages any directions, such as zoning rules, security law enactment, or social media laws. Expect a company wishes to create a unused office space at a indicated range. Achieve ability examination can discover that the specified site for the company isn't idealize for that sort of trade. That commerce has fair spared a part of time and vitality by finding early on fair that their thought was not possible.

5.3.3 Problem Solution Analysis

The problem solution Analysis :

Define the Problem:

Analyze the circumstance so that your center is on the problem, not fair its indications. Accommodating problem-solving strategies incorporate utilizing flowcharts to distinguish the anticipated steps of a prepare and cause-and-effect graphs to define and analyze root causes. The areas underneath offer assistance clarify key problem-solving steps. These steps bolster the association of interested parties, the utilize of factual information, comparison of desires to reality, and a center on root causes of a problem.

Generate alternate solutions:

By putting off the determination of one solution until a few problem-solving choices have been proposed. Considering multiple alternatives can altogether improve the esteem of your perfect arrangement. Once you have chosen on the "what ought to be" demonstrate, this target standard gets to be the basis for creating a street outline for examining options. Conceptualizing and team problem-solving methods are both valuable devices in this arrange of issue solving.

Once all sources of data have been identified, the business may gain awareness about transferring information to the Enterprise systems. However, it might necessitate a comprehensive cleansing procedure. Companies regularly possess redundant cope of same data in their systems as numerous departments deal with almost the same clients, goods, and transactions. There could be discrepancies in the data, such as location or name errors; some material may be erroneous; and it may include outdated data, such as clients that have subsequently fallen by the wayside.

Implement and follow up the solution :Before transferring data to the Enterprise systems, maintaining quality of the data may become a large effort in and of itself, requiring evaluating the data, clearing out duplication, and replacing missing information. Prior to making final changes into the systems, we evaluated new information properly.

•Develop a workable solution for managing online travel agency management system.
•Establish a communication system that is effective between Customer , admin of the website.
•Coordination device for the activities of travel agency management system.

5.3.4 Effect and Constraints Analysis

The limitations inside an organization are the subject of constraint analysis. According to this viewpoint, a manager should solely concentrate on optimizing the productivity of a bottleneck because the barrier is responsible for the company's entire profitability. Returns are unaffected by focusing on any other part of the firm. This is a crucial idea since bottlenecks can occur anywhere in a company. If sales, for example, need a high level of technical expertise and all salespeople are fully used, a company will not be able to raise sales incrementally until it can hire and educate new salespeople. Similarly, if a vital part is only available from one source and that provider is at full capacity, a corporation will be unable to create any extra units of a widget. There were some constraints that we faced during the development of this project. They also had some quite serious effect on development.

Constraint 1: Workforce Effect: as i had to do all the work completely by myself so here was a shortage of workforce

Constraint 2: Time Effect: As mentioned in previous constraint, due to lack of work force whole project was delayed. It was supposed to take about four months to complete, but stages of development have been pushed more.

Constraints 3: Budget Effect: As more times are being spent on this project more resources are being spent on it every day. Which is causing up more and more of the budget.

5.4 System Design

UML Diagrams

Module- 1: Registration and Login

Actors: Admin and Use
Goal in context: The diagram shown in figure represents the Registration and Login process of Young Bird

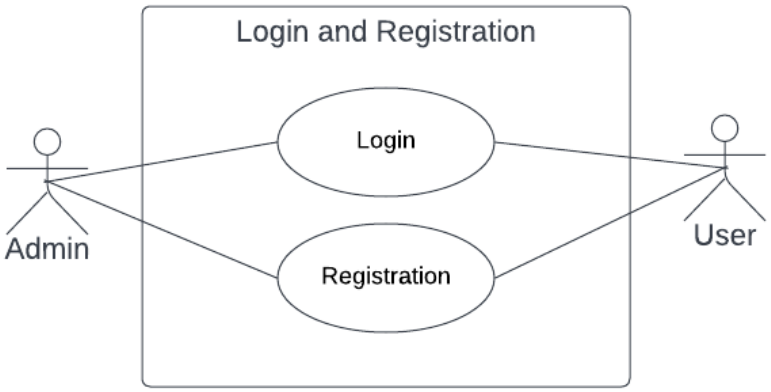

Figure 5.7: Login Process

Module- 2: Places
Actors: Admin
Goal in context: The diagram shown in figure represents Place uploading system of young bird

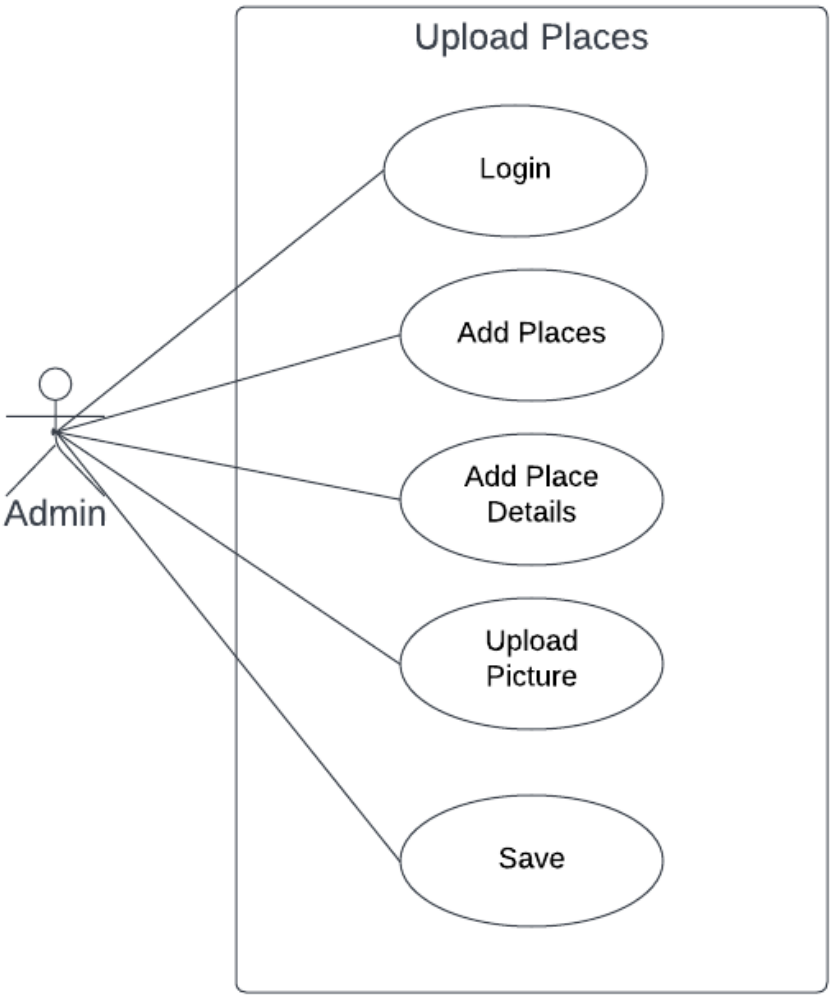

Figure 5.8: Adding Places and uploading picture of Places

Module- 3: Hotels

Actors: Admin

Goal in context: The diagram shown in figure represents Hotels uploading system of young bird

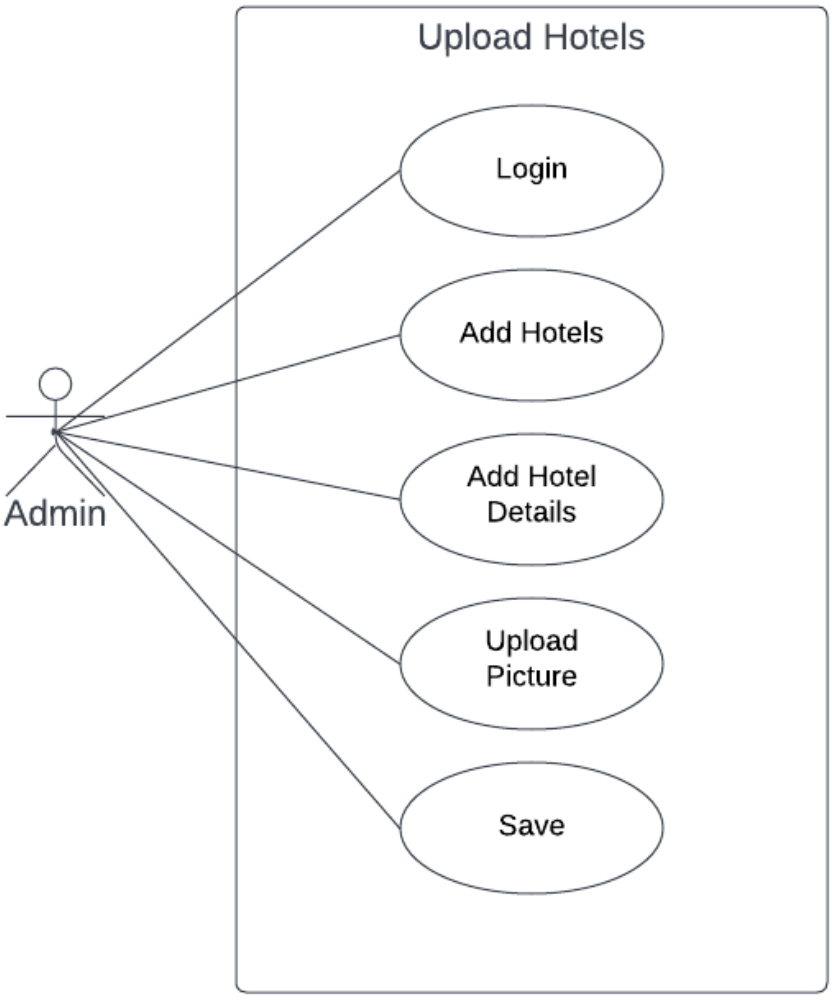

Figure 5.9: Adding Hotels and uploading picture of Hotels

Module- 4: packages
Actors: Admin
Goal in context: The diagram shown in figure represents packages uploading system of young bird

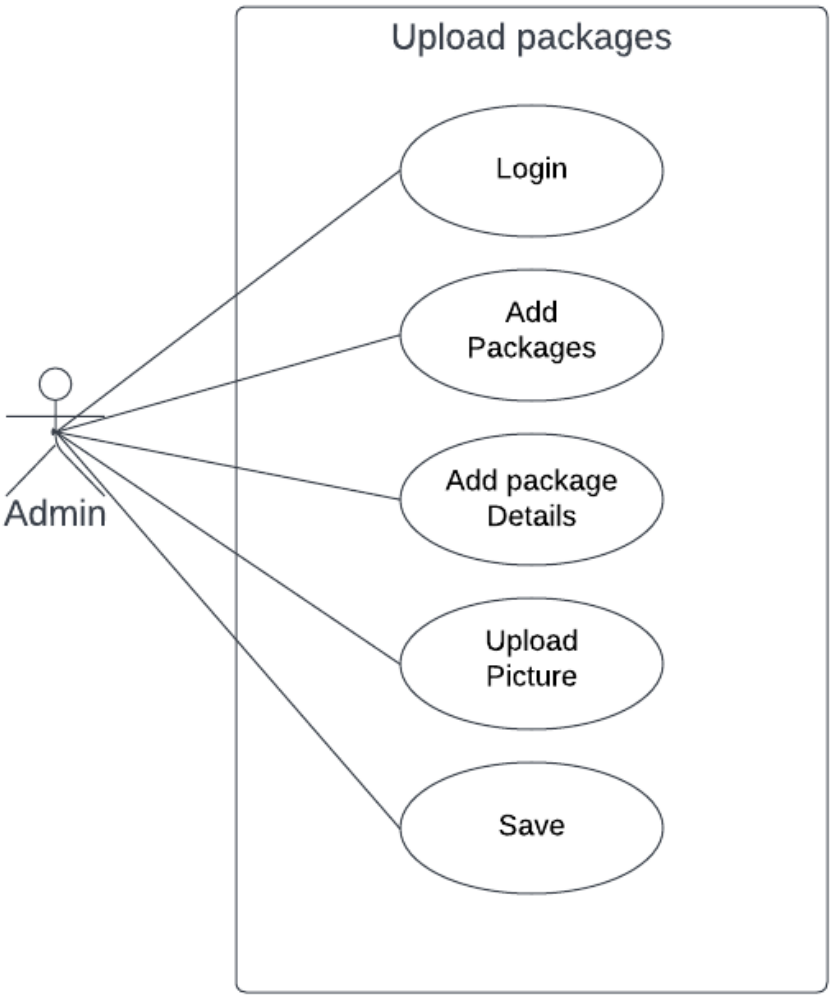

Figure 5.10: Adding Packages and uploading picture of Packages

Module- 5: Rooms

Actors: Admin

Goal in context: The diagram shown in figure represents Room uploading system of young bird

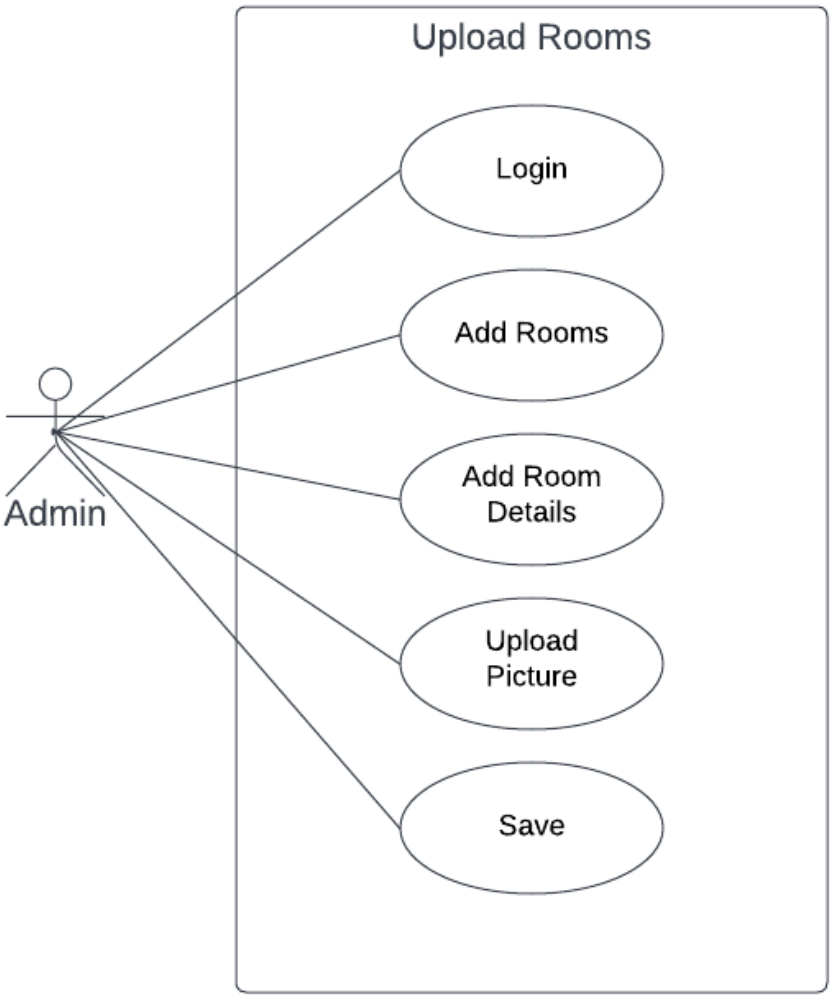

Figure 5.11: Adding rooms and uploading picture of rooms

Module- 6: System of Booking

Actors: Admin, Patient and Doctor

Goal in context: The diagram shown in figure represents Booking System of Young Bird

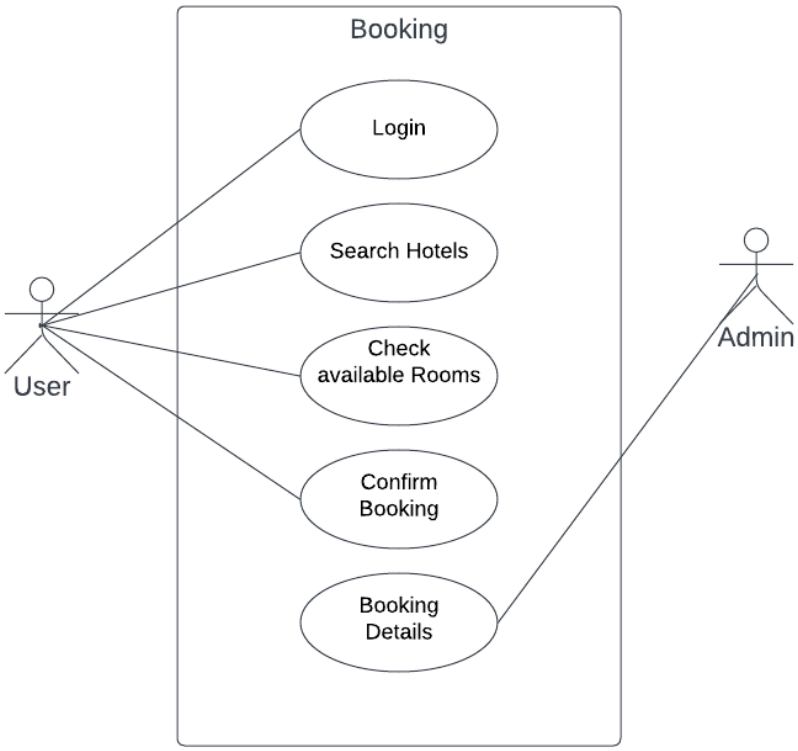

Figure 5.12: System of Booking

Module- 7: System of payment

Actors: Admin, Patient and Doctor

Goal in context: The diagram shown in figure represents Payment System of Young Bird

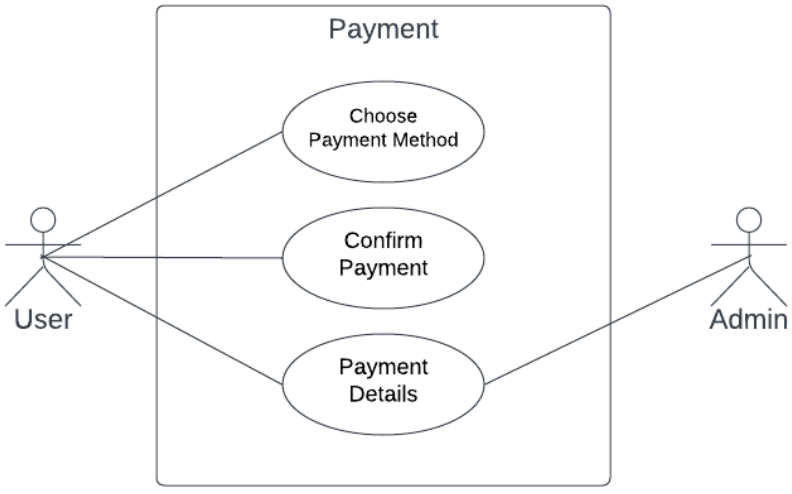

Figure 5.13: System of Payment

Activity Diagram:

The following points describe model elements in movement diagrams: - Exercises: In UML, exercises are holder components that portray the highest level of behavior in an action chart. Exercises contain a few action nodes and movement edges that speak to the arrangement of errands in a workflow that result in a behavior.

Activities:
In UML, an activity speaks to a discrete unit of usefulness in an activity. Activities have approaching and active movement edges that indicate the flow of control and information to and from other action hubs. The activities in an activity start when all of the input conditions are met. Input pins and yield pins can be added to indicate values that are passed to and from the activity when it starts.

Control hubs:
In movement charts, a control hub is a theoretical movement node that facilitates the stream of control in an activity.

Object hubs:
In action graphs, a protest hub is a theoretical movement node that makes a difference to characterize the question stream in a movement. A protest hub demonstrates that an occasion of a classifier could be accessible at a specific point within the activity.

Action edges:
In action graphs, an action edge could be a coordinated connection between two activity nodes. When a particular activity in movement is total, the activity edge proceeds the stream to the following activity within the grouping. The activity diagrams of "young Birds" are given below:

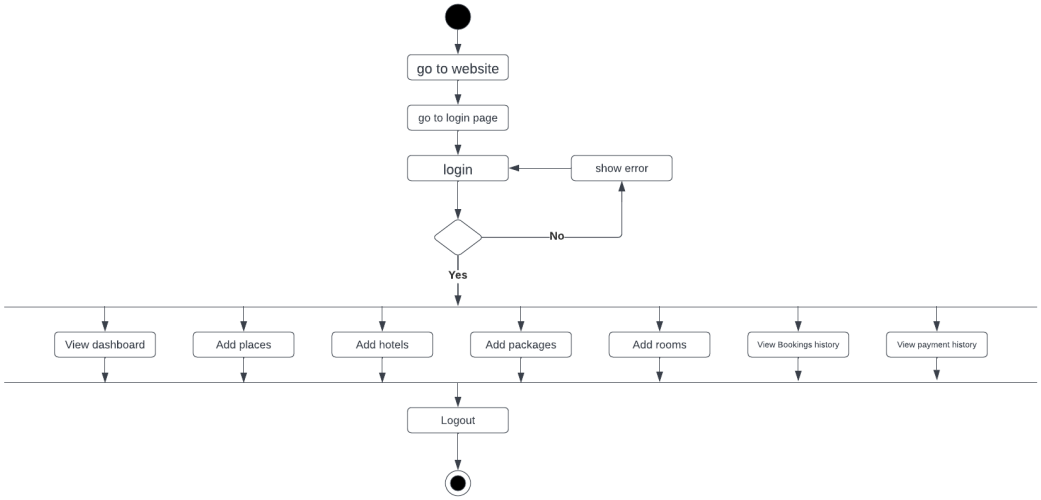

Figure 5.14: Activity Diagram for Admin

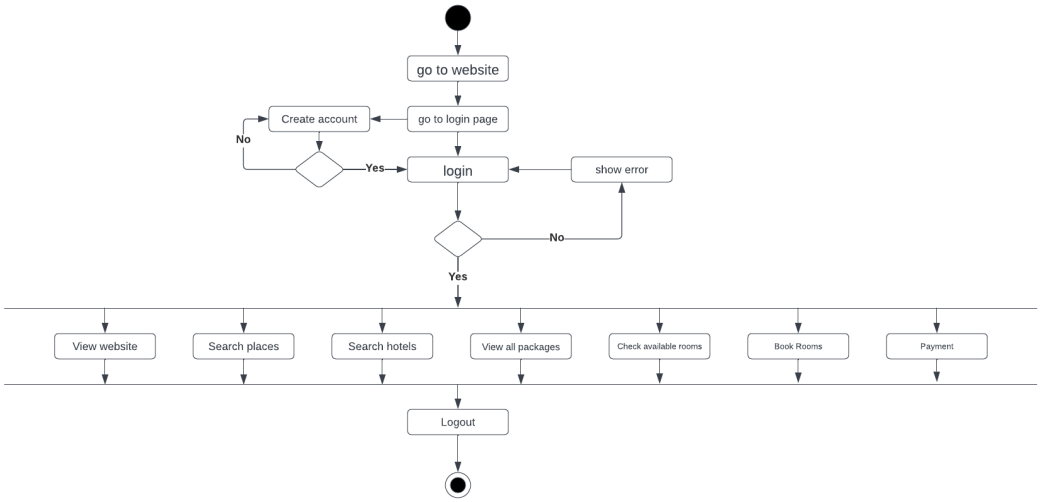

Figure 5.15: Activity Diagram for User

Entity Relationship diagram:

ERD stands for entity relationship graph. Individuals moreover call these sorts of graphs ER charts and Sub- stance Relationship Models. An ERD visualizes the connections between substances like individuals, things, or concepts in a database. An ERD will moreover frequently visualize the qualities of these substances.An ER diagram can offer assistance to businesses record existing databases and in this manner troubleshoot rationale or sending issues or spot wasteful aspects and offer assistance progress forms when commerce needs to attempt commerce prepare re-engineering. ERD can too be utilized to plan and demonstrate un- used databases and make beyond any doubt that engineers can distinguish any rationale or plan blemishes sometime recently they're actualized in a

generation.IDEF1X stands for an coordinates definition for information modeling. This sort of ER graph will appear substances associated to each other without relationship images. The traits for any sub- stance will be recorded as portion of a table interior each substance shape rather than partitioned images.

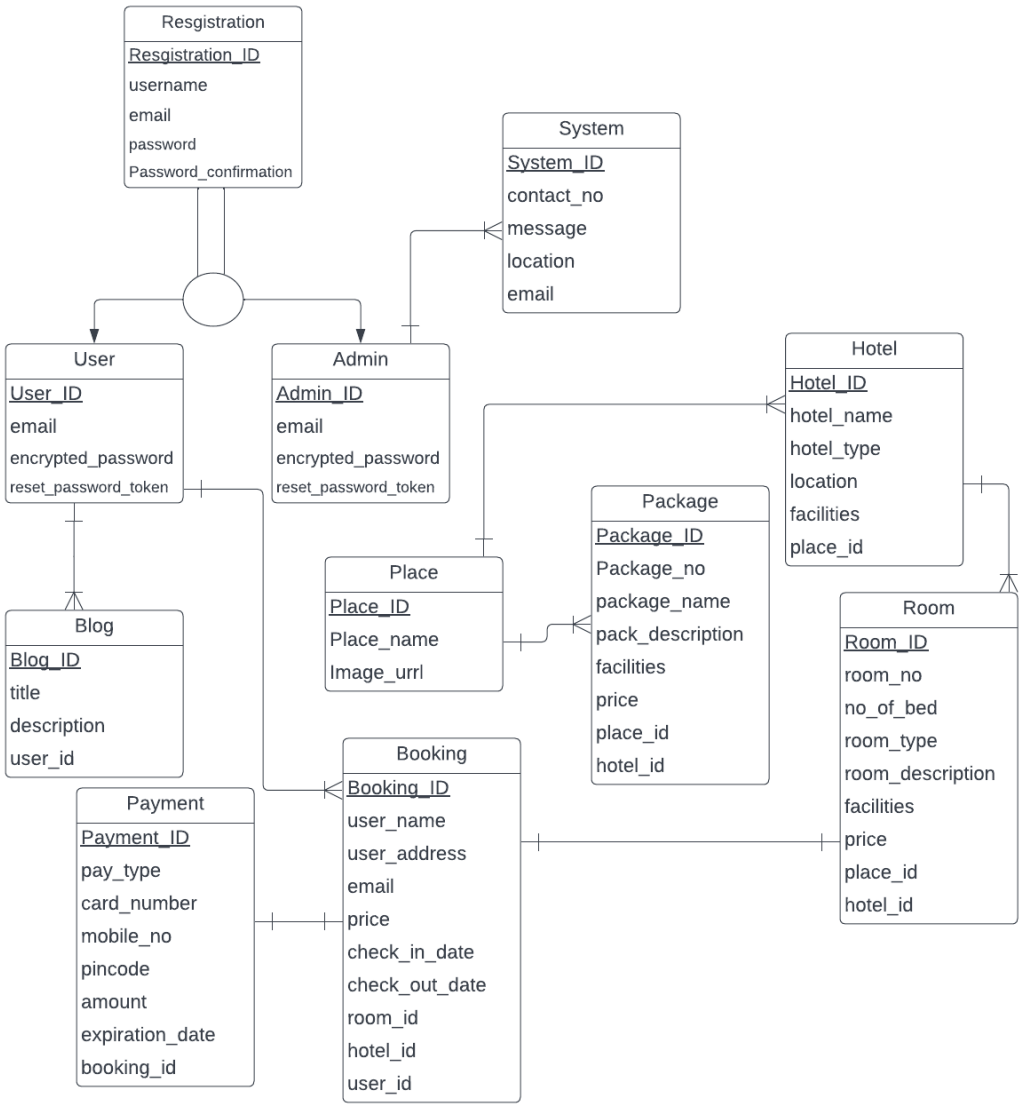

Figure 5.16: Entity Relationship Diagram for "Young Bird"

Architecture

Our new system, which is able be web site, will be facilitated on an web server. The in general engineering is overseen centrally. In this sense, the framework is introduced on a central server and is gotten to, and information collected by means of browsers on different gadgets conveyed all through a dispersed zone, all of which stay associated to the central server. In comparison to existing Online travel agency administration frameworks, the unused framework is outlined to be utilized by different .Online travel agency whereas

keeping up the information security and security of person Online travel agency whereas too giving rise to get to to other information and data, such as client and beneficiary information. The unused framework is planned to be "sent once and utilized anyplace," in differentiate to a few inquire about that recommends administration exercises ought to be carried out on standalone frameworks running on individual computers in Online travel agency . At this point, the trade application rationale might run on the client-side or the server-side.

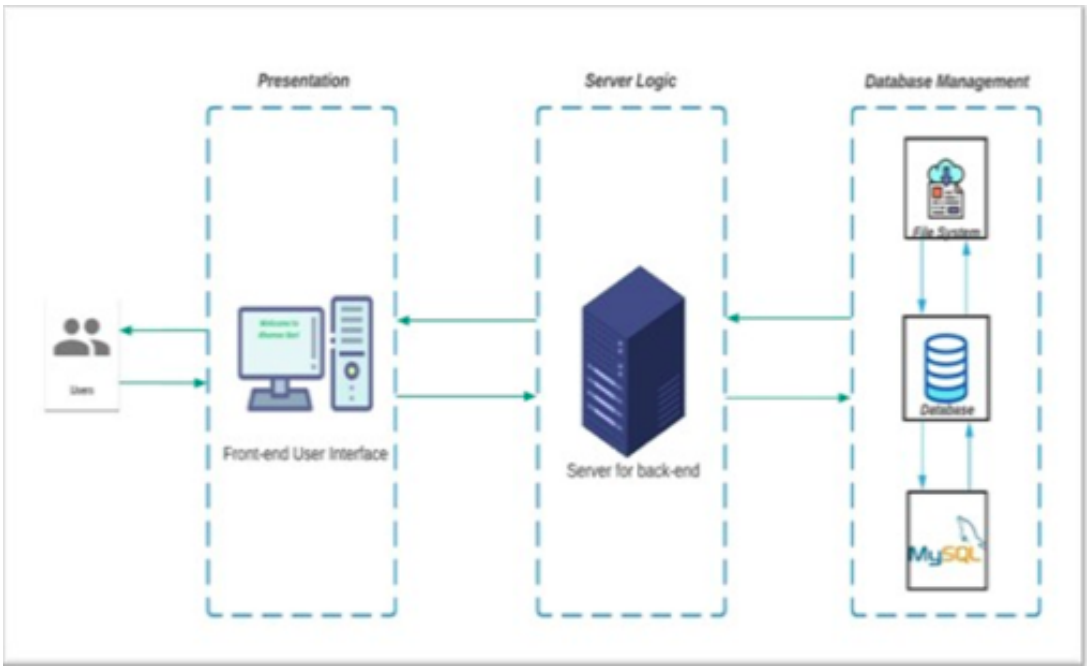

Figure 5.17: Website Architecture for " Young Bird "

5.5 Testing

Input

The following are the Input of "Young Bird "

Input of " Young Birds "	
Process	Filed Type
Log in	User ID-string
Registration	Name - string Email - string Password - string Phone - integer Date of Birth - string Address - string
Search Places	Place Name-string
Search Hotels	Hotel Name- string
Search Available rooms	Room No- string
Booking	Check in Date-Date Check Out Date-Date Price-Decimal
Payment	Card_number - integer Pincode - integer Expire date - date Mobile no - integer

Figure 5.18: Input for "Young Bird"

Output

The following are the Output of "Young Bird"

Output of " Young Birds "	
Process	Filed Type
Log in	On Success -> Redirect to homepage On Fail -> Show Error Message
Registration	On Success -> Show Success Message"Registration successfully done" On Fail -> Show Error Message "Registration successfully not done"
Search Places	On Success -> Show all Places On Fail -> No place Found
Search Hotels	On Success -> Show all Places On Fail -> No place Found
Search Packages	On Success -> Show all Packages On Fail -> No place Found
Search Available rooms	Check in Date-Date Check Out Date-Date Price-Decimal
Booking	On success-> Show success message "Booking has been successfully done!". On failure -> Show error message "Error !! Booking is not done!".
Payment	On success-> Show success message "Payment has been successfully done!". On failure -> Show error message "Error !! Payment is not done!".

Figure 5.19: O
utput for "Young Bird"

Chapter 6

Results & Analysis

For the result we would like to describe the one simple process as a outcome. The process is admin opens up a new proprietors account and add details.Like adding places , adding packages , adding hotels, adding hotel rooms ., The process of admin being able to check feedback and put remarks are also shown as a result.

After the advancement of the framework, a few bugs were found amid the program's testing. This was a little burden that was settled quickly. Test cases were archived when these issues were settled. It is continuously exceptionally important to test a framework after the advancement stage some time recently at last sending it for common utilize. The method of guaranteeing that the created framework meets all the requirements is known as endorsement Program testing's primary reason is to identify faults within the application. All test cases were advocated utilizing testing approaches. The testing was done on a neighborhood server. Some time recently the ultimate sending, the framework will be tested once more, and in the event that essential required changes will be made. Here I am including a few screenshots of a few of the forms that have been tried to guarantee performance accuracy.

Result

Test ID	Test Case	Description	Steps to be executed	Expected Result	Actual Result	Pass/Fail
T1	User Signup	User needs to give info to open account	1.go to login page . 2.Input email,password . confirm password 3.Click on Sign Up	Information will be stored in database and it will open a new account	Information stored in database and opened a new account	Pass
T2	User Login	A User needs sign up with his registered email and password	1.go to login page 2.Input email,password 3.Click on submit	All the Information will be checked in the database if found then it will redirect to the home page	Information matched and it redirecting to the home page	Pass
T3	View/Search Place	User can search places by writing first few words	1.go to the search bar and search it with name	It will show the place which was searched	It showed the searched result	Pass
T4	View Hotel	User can view hotels of a selected place	1.go to place 2. Check hotels	All the information will be checked in the database if found then it will	All the information has been checked in the database then it redirected	Pass

Figure 6.1: For User

Test ID	Test Case	Description	Steps to be executed	Expected Result	Actual Result	Pass/Fail
T1	Admin Login	Admin needs sign up with his registered email	1.go to login page 2.Input email,password 3.Click on submit	All the Information will be checked in the database ,if found then it will redirect to the AdminDashboard	Information matched and it redirecting to the home page	Pass
T2	Add new places/packages/hotels/rooms	Admin can add new places/packages/hotel and rooms	1.Go to admin dashboard and fill up all the information correctly and add new rooms /place/hotels/packages/	Admin can upload all of it	Admin uploaded all the information	Pass
T3	View Booking History	Admin can see booking history	1.Go to the booking page . 2.View the booking history	Information will be stored to the database	Information is stored and admin can see it	Pass
T4	View Payment History	Admin can see payment history	1.Go to Payment page . 2.View the Payment history	Information will be stored to the database	Information is stored and admin can see it	Pass

Figure 6.2: For Admin

This chapter contains screenshots few notable pages of the Website so it can be seen about how the actual website looks like.

Graphical User Interface Result :

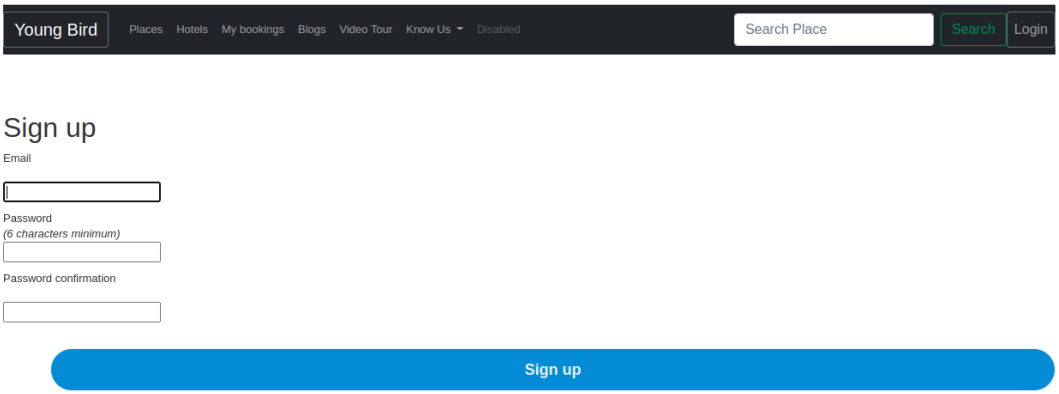

Figure 6.3: Sign UP Page

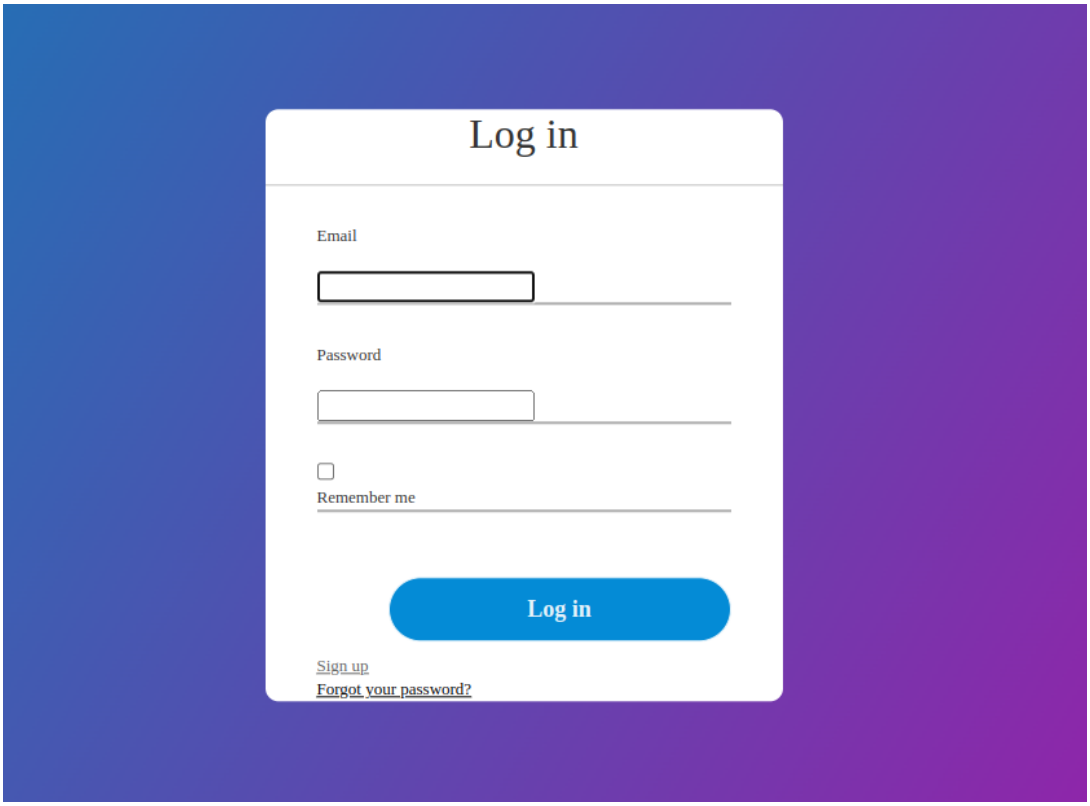

Figure 6.4: Login Page

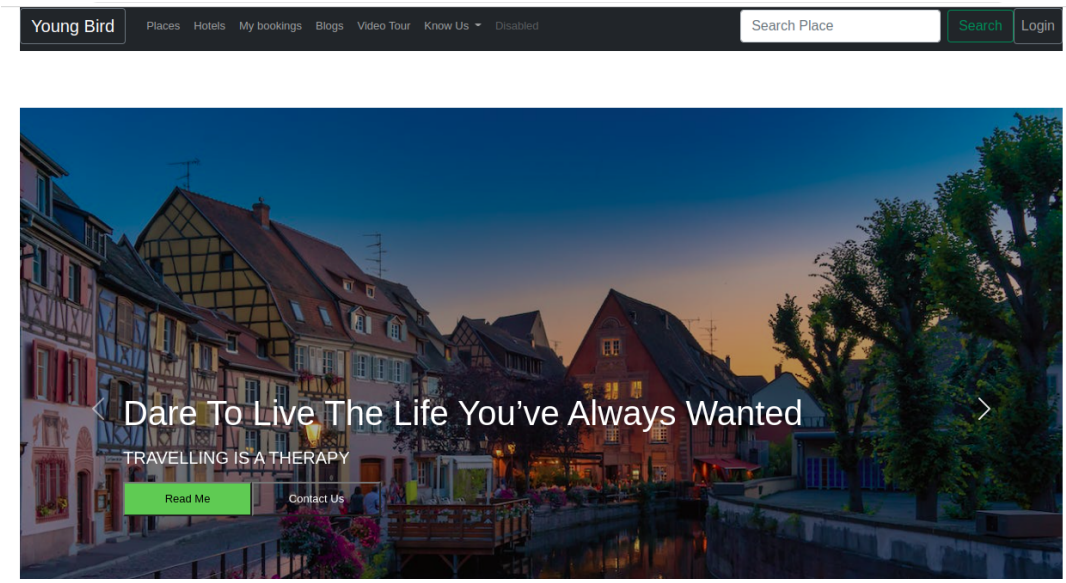

Figure 6.5: Home Page

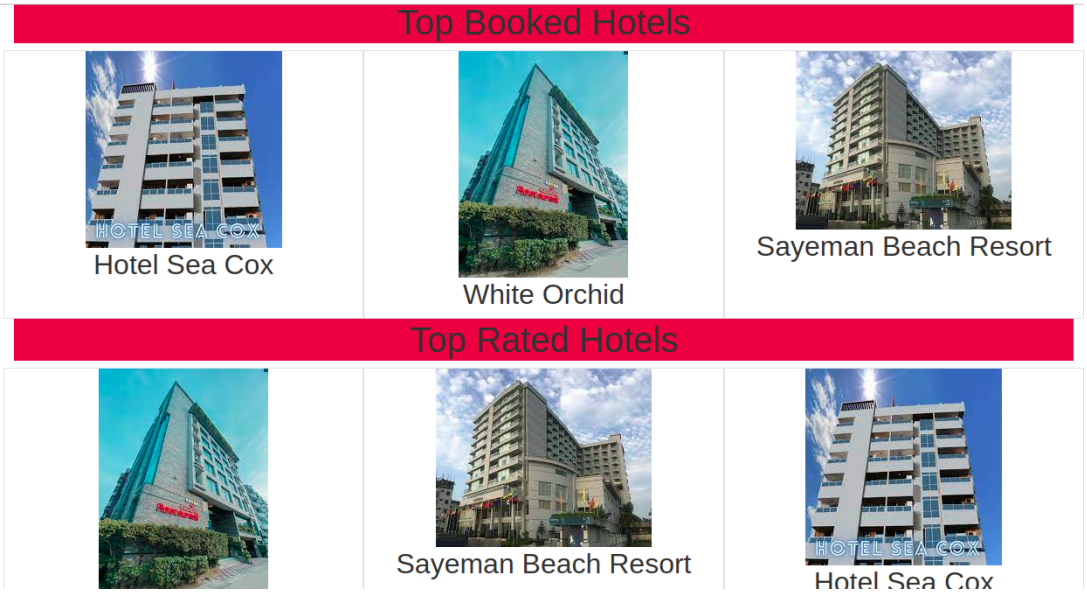

Figure 6.6: Top Rated And Top Booked Hotels

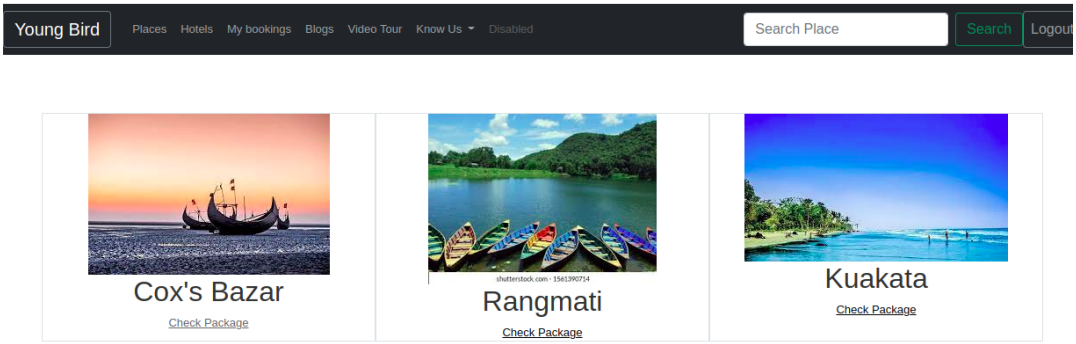

Figure 6.7: Places

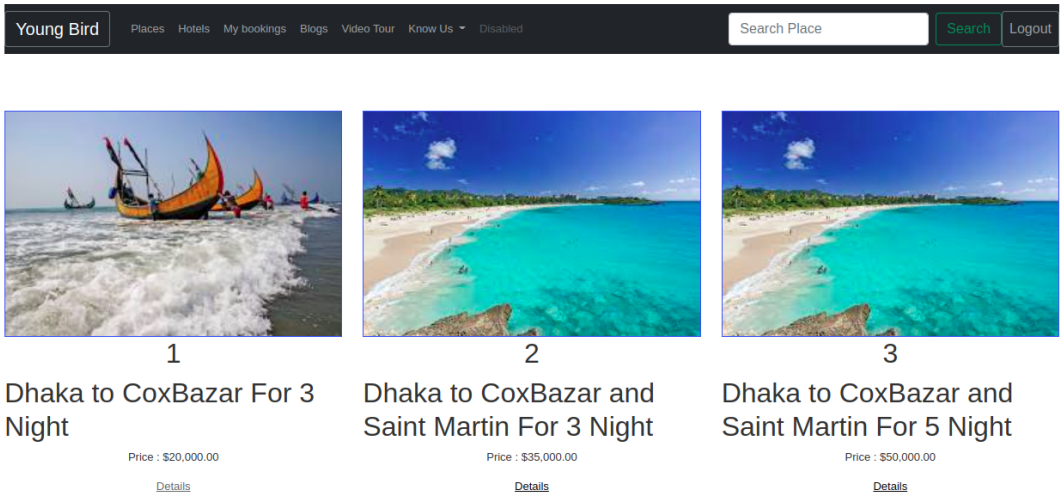

Figure 6.8: Packages

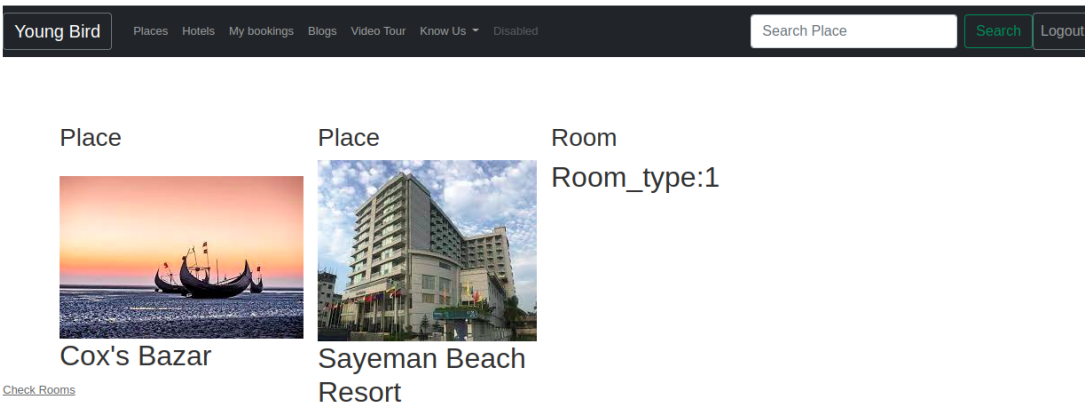

Figure 6.9: Package Details

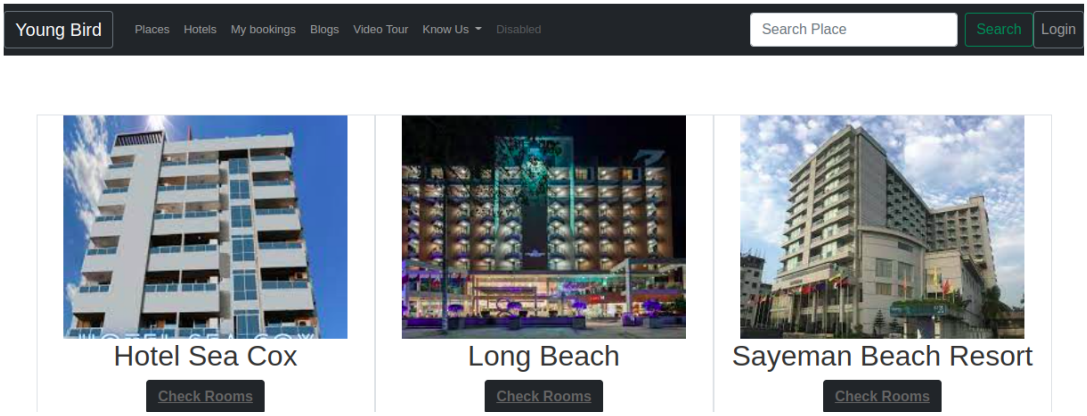

Figure 6.10: Hotels

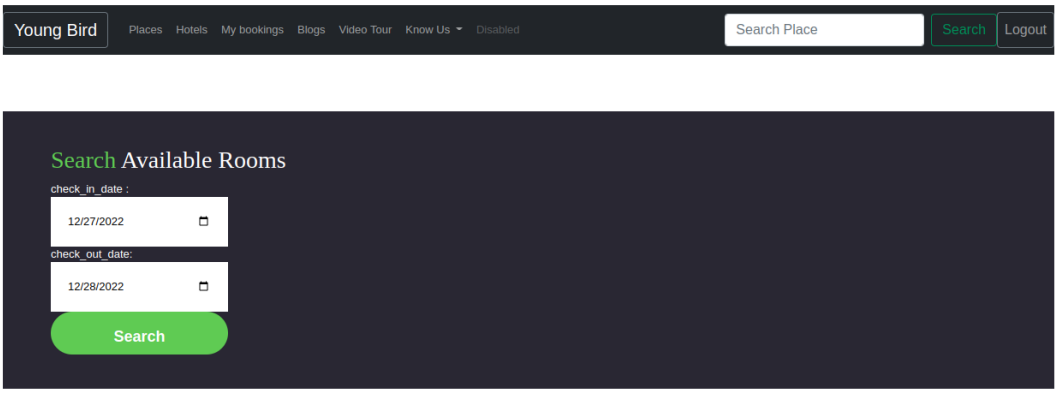

Figure 6.11: Search Rooms

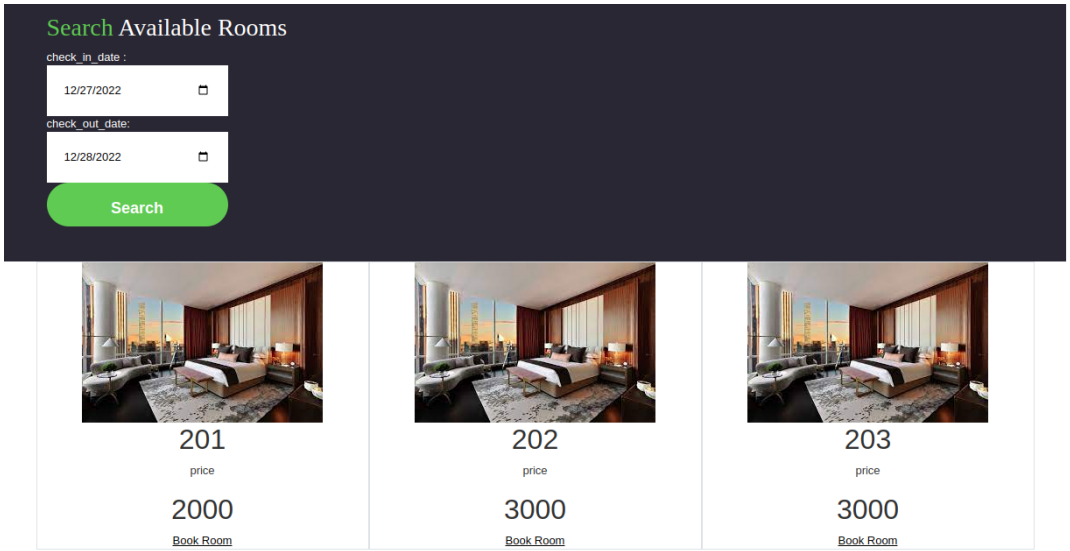

Figure 6.12: Available Rooms

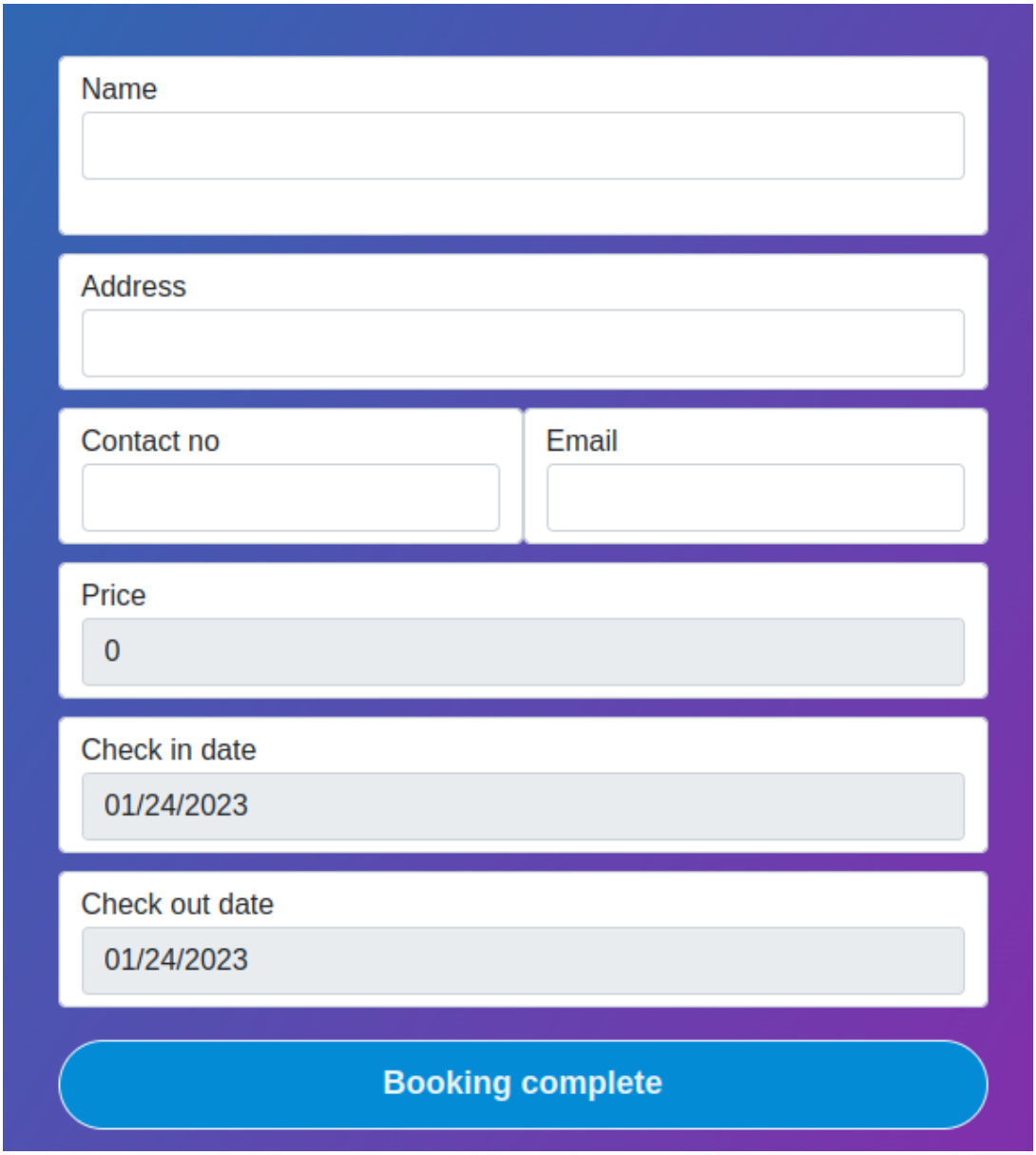

Figure 6.13: Booking System

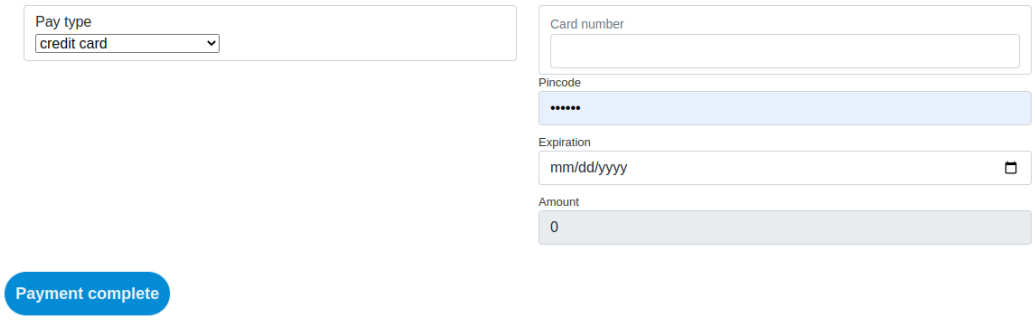

Figure 6.14: Payment System With Credit Card

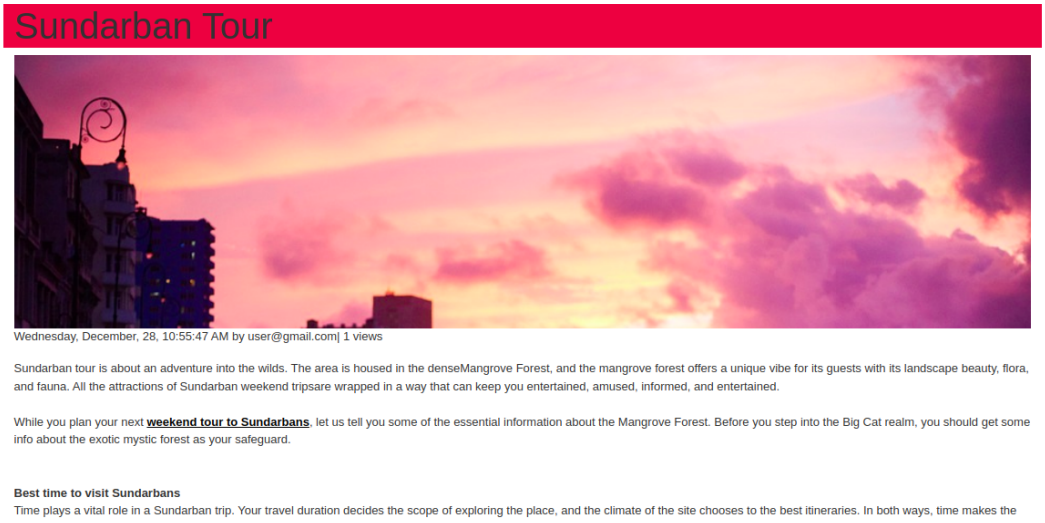

Figure 6.15: Creating And Writing Blogs

ANALYSIS

From our manual testing and bug fixing we found that our initial version was working properly. But, there were few more functionalities left to add from the requirements. So, still some of the works are being on process. Identifying and Fixing Bugs: As for reacting, there were lots of bugs there I have faced while implementing for the front-end. software testing can be described as the process of verifying and ensuring that software or application is loose of distractions, meets technical necessities as directed for its layout and development, and meets consumer necessities effectively and efficiently with the aid of managing all unusual situations and restrictions. Debugging the application made a crucial and significant change on both the front-end and the back-end development of the application. There were various test cases that were performed exactly as it was planned from before. The project did not moved forward in terms of development until each test cases return the expected output. By using this method, the application was slowly and gradually brought to life.

Chapter 7

Project as Engineering Problem Analysis

7.1 Sustainability of the Project/Work

One of the essential parts of a project is sustainability. Sustainability of a project means maintaining the application or software or monitoring the project when gets any problems try to fix that problems. This project's accounting system is now under development, but after launching the app, the app will be regularly maintained by the company. Also, the team will find new features and new technologies to implement those things in this project. The team will also monitor the customer review and depending on the customer expectation team fixed if any bug reports are found or update those features. Project sustainability can measure by two parameters.

1. Business Sustainability.
2. Environmental Sustainability.

Business Sustainability :
From this perspective, we have to be consider in case and how the project will create budgetary picks up or benefits and proceed to operate on earned salary. This may moreover be a cross-cutting topic in vocation development-type ventures. For our project, we aim for providing the finest administration. Our clients and clients will get hassle-free conveyance. In conjunction with every arrange, our app will get a small exchange charge, which can offer assistance to our framework to maintain its commerce demonstration.

Environmental Sustainability :
In this angle, we ought to talk about the assets that our venture employments in a such way that the required assets will never vanish. This is often as it were in uncommon cases a sort of project maintainability.

7.2 Social and Environmental Effects and Analysis

The social effect of travel agency can be measured by fulfillment and trust based on the taking after variables: Expanded Web utilization Understudies and youth are the fastest expanding statistic segment and they are the foremost progressed clients of advanced applications and online technology. On the other hand, this venture does not truly alter the effect on the environment directly.

Social Effect :
Travelling has become a new trend nowadays . people now like to go on a tour with their family and friends . Everytime they get vacation they try to find friends to go out on a tour . so travel agency effect a lot socially . Online travel agency management system makes a difference organizations to supply way better client administrations. Online travel agency management system/hotel booking system makes a difference to rearrange trade forms and makes them quicker and more effective. It decreases the printed material and increments the efficiency of organizations. you'll moreover compare the quality of a hotel and its characteristics with another competitive hotel accessible within the advertise along with the criticism result of other users.Online-travel agency can well facilitate, collaborate and oversee e-commerce exercises but it may have a few negative impacts like discuss contamination, destructive radiation etc.

Environmental Effects:
Online agency is Good for the Environment . This technology is also in- credibly eco-friendly Saving Fuel By not driving. there is another if less people drive the cars there will not be too much traffic in the road, that means its also good for avoiding traffic jam and it is also very eco friendly as there wont be too much gas in the air. They can book any hotel or buy any package by just staying at home . even it is also very useful for the admin side

7.3 Addressing Ethics and Ethical Issues

The code of conduct in everyday life serves as a moral code, which includes code of conduct that describes behavior as right or wrong. The Web offers a great store of information combined with great communication power, and unscrupulous users can use these skills to gain personal and financial benefits at the expense of others. The Code of Conduct for the Internet provides a guide for appropriate online behavior, adjusting the general ethical standards to provide a framework for roaming the Internet. Moral issues are situations in which moral conflict arises and must be resolved. In other words, it is a time when moral values can be questioned. When we create a website,although it is not

the first thing we have in mind. Because technology has become such an integral part of our daily lives, it is impossible to separate it from the ethical issues that it raises. They influence how we consume and create. Some of the common ethical issues that are faced by developers were kept in mind when doing this project .

Customers' information assurance:
Since of the touchy data that our clients entrust us with, in the current security is one of the big issue . So, information security was given the most extreme need when making this project.

Copyright ownership:
As the code of this extension is the property of the company without their authorization, no one can duplicate, convey, show, or alter it. As an intern sometime recently working on their company venture, I had to sign a copyright agreement with the company.

Managing database security:
The back-end server and database is as they were available to the senior engineers of the company. As an Understudy, I did not have any direct knowledge of it .

Fraud and Identity Theft:
Allowing third-party software are excluded for this websites that can be a potential risk for both the application and the database of the application.The order option shows the customer to see the contact number to place the order when needed. Therefore, there is no payment gateway implemented to the system. A problem can be solved by well analyzing it and producing but solutions of the problem and deciding which one would be most suitable solution. Constructing the problem tree, identifying the overriding problem and cause and effect, and creating multiple effective solutions is known as engineering the problem analysis.

Chapter 8

Lesson Learned

8.1 Problems Faced During this Period

Each one of us must overcome challenges in arrange to realize our objectives. The same thing happened to the project and to me. It was an entirely unused experience for Me .

Adapting to office environment :
For someone like me who is working on a office for the first time is always tough .Since my usual official starts at 10:00 a.m and it ends at around 7:00 p.m and i have to go there 6 days a week . even most of the days i had to stay in the office after 7 pm . so it was hard for me to get time for myself and working on he internship report and also i had to study for my university courses .. though my office colleague were really helpful but its always tough to get used to new environment .

New Languages and Frameworks :
My company's most of the work is based on Ruby on rails . for this reason i had to adapt a new language and i had to learn a new frame work . before that i have never worked on a frame work . i had to learn it from the scratch. I had to understand the logic behind mvc . so it took me lot of time to get familiar with with those things . i started very late for this reason . i also had learn jquery and ajax to work on this project .

Slow start :
My supervisor on this project was basically focusing more on logic . he used to give task based on logic . the main focus of him was to make my basic more clear . so while i was working on the website . it took me more time to work on it because sometimes i could have finished some feature in a more easier way . but my super visor tried to make sure i understand the logic behind all of these things thats why it took me a lot of time to built one feature . thats why it took me lot of time to work on this project and there are still some unfinished work .

Identifying and Fixing Bugs:
Identifying and fixing bugs was a big issue . it took me a lot of time to find those bugs and fixed those bug . because once i worked on one feature some times i forgot what code i wrote there . so i had to check it again how the codes are working thats why it took me a lot of time to fix it .

8.2 Solution of those Problems

Actually, it took me a little time to urge myself into the swing of things. Everything started to drop into put exceptionally rapidly. Arranging my day and my possessions incredibly helped me in settling all of my issues. Working all through the episode made things more regrettable, to begin with.

Solution for those problems are listed below:

Adapting to office environment :
Talking to the senior people in the office helped me a lot to get used to with the environment . In this field the more help you can seek from other people . it will always make your work more easy . it will also reduce your work and time as well . so people need to learn how to take help when its necessary . because when you are stuck with one problem for like few days its always better to ask for help rather than sitting some where and try it by your self . it will only waste time .Making a perfect routine also a key to work in office in environment .

New Languages and Frameworks :
As i was not familiar with any framework so had face a lot of problems . so i think in our university courses like web application and other courses we need to work on more frame works and languages . so that it becomes easy for us in the office work . also we should also can learn it by ourselves in our leisure time to make our skill more strong .

Solving coding problems :
The more time we will spend on solving coding problems it will become more easier for us to think logically and solve more complex problems . while i was working on the project i had faced many complex problems and it took me lot of time to understand those problems . but people who can solve coding problems it becomes more easier for them to solve those complex problems

Giving more time on project :
Giving more time on the project can be a solution . Like the more time we will give . the more time we will get to understand the problems . Concentrate on your requirements:

To achieve the best payback, identify the key competencies you need to improve and the time limit for achieving your training goal. Keep track of the outcomes: A training program will be ineffective unless its progress is tracked. Choose a metric to determine your return on

Chapter 9

Future Work & Conclusion

9.1 Future Works

With the current computing trend toward cloud technology, system was designed with the future in mind. As a result, it is scalable and easily transformable into a cloud server that can be accessed by multiple online agency to obtain required data and utilize various functionalities. However, in the short term, we will examine SMS integration, which will enable users to receive alerts and notifications via their mobile phones. This project, "Online Travel agency Management System" is still in its early stages of growth, with several more features planned for the near future. Here are a few examples:

1: Online Payment system from online Banking.
2: SMS service support.
3: Chat Service Support.
4: Add various kind of more hotels
5: Adding live chat system.
6: Adding Background Videos.
7: Develop Registrations system(direct registration from google account) and forget password system.
8: Connecting user profile with their social media account.
9: A chat option for quick responses among client, admin and customer for better services.
10: Adding premium version for more features.
11. Add payment gateway.
12 .Improve existing features
13. Add ticket buying system .

Along with adding new features, our consistent practice would be updating and maintain already implemented functionalities. Having client feedback's and also working on improving their experiences would be an huge part of it.

9.2 Conclusion

As Computer Science and Engineering(CSE) have numerous branches it was very difficult for me to decide what I am really energetic approximately. But whereas doing the core courses all through the four a long time of my scholastic travel, my intrigued developed more within the web improvement division. That's why I chosen to do an internship in this division so that I can win real-time involvement in this field by working with a professional group and accumulating communication and interaction aptitudes. I have continuously wanted to be a portion of the corporate world. So, I took my to begin with step through this internship. At the exceptionally conclusion of this internship, I can say that this was a really wonderful encounter for me. Amid this internship, I learned a parcel of modern things from my seniors. This report was made as portion of my internship at Nascenia Ltd.And I want thank Nascenia from the bottom of heart for giving me this opportunity to work with such magnificent team. Within these time period, I learnt so much from everyone from the team. I specially want to thank Mr. Hussain Muhammad Ibrahim , my supervisor, for helping and teaching me on every stage of this course. He pushed me so much to adopt the corporate culture and helped me to boost my confidence. His guidance was much needed for a fresh intern like me. Finally, working there and seeing these project come to life was a great experience for me.As a use case, the report presents the application of the approach to the online travel agency web site. The investigation carried out has permitted us to distinguish a few issues and to propose enhancements with respect to the item categorization and the organization of a few of the site segments, which have been exchanged to the office directors.The report is strongly related to that site, the proposed approach is common and the strategy is pertinent to organized online travel agency web site. The primary stage of the strategy, the pre-processing stage, is the one that is particular for each travel agency website . .As Computer Science and Engineering(CSE) have numerous branches it was very troublesome for me to decide what I am really enthusiastic approximately. But whereas doing the center courses all through the four a long time of my scholastic travel, my intrigued developed more within the web advancement segment. That's why I chosen to do an internship in this segment so that I can win real-time involvement in this field work with a proficient group and accumulate communication and interaction abilities. I have continuously needed to be a portion of the corporate world. So, I took my to begin with step through this internship. At the exceptionally conclusion of this internship, I can say that this was a really brilliant encounter for me. Amid this internship, I learned a part of modern things from my seniors. The IT group is full of lively and accommodating people who made a difference me to come up with the office environment Working on a extend beneath the group made me home my existing coding aptitudes and improve them.

Bibliography

[1] H. Gantt, “Gantt chart,” 2015.

An Undergraduate Internship/Project on travel agency " Young Bird "

By

Elan MD Taseen

Student ID: 1831050

Autumn, 2022

Consent from Supervisor

The student modified the internship final report as per the recommendations made by his/her academic supervisor and/or panel members during and/or before final viva, and the department can use this version for archiving as well as the OBE course material for CSE499.

.....

(Signature of the Supervisor)

Mr. Mahmudul Islam

R&D Officer

Department of Computer Science & Engineering

School of Engineering, Technology & Sciences

Independent University, Bangladesh