



American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

**ABC Travel Agency**

A Software Engineering Project Submitted

By

Semester: Spring_23_24		Section: H	Group Number: 5	
SN	Student Name	Student ID	Contribution (CO3+CO4)	Individual Marks
	SHA MOHAMAD YEAHIA IDRIS	22-46787-1		
	MD YEASIN NEWAZ	22-46803-1		
	MD. RIYADH ULLAH	22-47725-2		
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	MD. MINHAIJUN NABI SHIAM	22-47830-2		

The project will be Evaluated for the following Course Outcomes

<b>CO3:</b> <i>Select</i> appropriate software engineering models, project management roles and their associated skills for the complex software engineering project and evaluate the sustainability of developed software, taking into consideration the societal and environmental aspects	Total Marks	
Appropriate Process Model Selection and Argumentation with Evidence	[5 Marks]	
Evidence of Argumentation regarding process model selection	[5Marks]	
Evaluate the sustainability of the developed software in terms of both society and the environment (Impact identification)	[5Marks]	
Submission, Defense, Completeness, Spelling, grammar and Organization of the Project report	[5Marks]	
<b>CO4:</b> <i>Develop</i> project management plan to manage software engineering projects following the principles of engineering management and economic decision process	Total Marks	
Develop the project plan, its components of the proposed software products	[5Marks]	
Identify all the activities/tasks related to project management and categorize them within the WBS structure. Perform detailed effort estimation correspond with the WBS and schedule the activities with resources	[5Marks]	
Identify all the potential risks in the specific project and prioritizing/categorizing those to overcome the risk factors.	[5Marks]	

## Description of Student's Contribution in the Project work

<p>Student Name: SHA MOHAMAD YEAHIA IDRIS</p> <p>Student ID: 22-46787-1</p> <p>Contribution in Percentage (20%):</p> <p><u>Contribution in the Project:</u></p> <ul style="list-style-type: none"> <li>▪ SDLC</li> <li>▪ Sequence Diagram</li> </ul> <p style="text-align: center;">_____ Idris</p> <p>Signature of the Student</p>
<p>Student Name: MD YEASIN NEWAZ</p> <p>Student ID: 22-46803-1</p> <p>Contribution in Percentage (20%):</p> <p><u>Contribution in the Project:</u></p> <ul style="list-style-type: none"> <li>▪ SDLC</li> <li>▪ Sequence Diagram</li> <li>▪ State Chart Diagram</li> </ul> <p style="text-align: center;">_____ Yeasin</p> <p>Signature of the Student</p>
<p>Student Name: MD. RIYADH ULLAH</p> <p>Student ID: 22-47725-2</p> <p>Contribution in Percentage (20%):</p> <p><u>Contribution in the Project:</u></p> <ul style="list-style-type: none"> <li>▪ Project Proposal</li> <li>▪ Requirement Analysis</li> <li>▪ Class Diagram</li> </ul> <p style="text-align: center;">_____ Riyadh</p> <p>Signature of the Student</p>
<p>Student Name: SHUSMITA ANJUM AZIZ</p> <p>Student ID: 22-47733-2</p> <p>Contribution in Percentage (20%):</p> <p><u>Contribution in the Project:</u></p> <ul style="list-style-type: none"> <li>▪ Project Proposal</li> <li>▪ Requirement Analysis</li> <li>▪ Use Case Diagram</li> </ul> <p style="text-align: center;">_____ Shusmita</p> <p>Signature of the Student</p>

Student Name: MD. MINHAJUN NABI SHIAM

Student ID: 22-47830-2

Contribution in Percentage (20%):

Contribution in the Project:

- Project Proposal
- Requirement Analysis
- Activity Diagram

\_\_\_\_\_Shiam\_\_\_\_\_  
Signature of the Student

## 1. PROJECT PROPOSAL

### 1.1 Background to the Problem

The travel industry is witnessing a significant transformation with the advent of online travel agencies. Traditional travel planning methods are being replaced by digital platforms that offer convenience and efficiency to travelers. However, amidst this transition, several challenges persist. Fragmented information, lack of personalization, and suboptimal user experiences are some of the key issues faced by both travelers and travel agencies. Addressing these challenges is crucial to enhance customer satisfaction and drive business growth.

The root cause of these problems lies in the complexity of travel planning and booking processes. With an abundance of options available, travelers often struggle to find relevant information tailored to their preferences. Furthermore, traditional travel agencies face difficulties in streamlining operations and delivering personalized services at scale. Addressing these challenges is imperative to meet the evolving needs of modern travelers and maintain competitiveness in the market.

### 1.2 Solution to the Problem

- **Project Objective:** The objective of this project is to develop an innovative online travel agency software that addresses the aforementioned challenges (Category B). The focus will be on user-friendly interfaces on travel booking process and enhance user experience.
- **Proposed Solution:** The proposed solution will include features such as intuitive search functionality, customizable booking options, and real-time updates on travel arrangements. By prioritizing simplicity and usability, the software aims to provide a seamless booking experience for travelers while empowering travel agencies to efficiently manage their operations.
- **Description of proposed solution:**  
**Functionalities of the proposed solution:**  
**Intuitive Search Interface:** Develop a user-friendly search interface that allows travelers to easily find and compare travel options based on their preferences.

**Customizable Booking Options:** Provide flexible booking options for flights, accommodations, and activities, allowing travelers to tailor their itinerary according to their needs.

**Real-time Updates:** Implement real-time updates on travel arrangements, including flight statuses, accommodation availability, and local events, to keep travelers informed throughout their journey.

**Impact on Societal, Health, Safety, Legal, and Cultural Issues:**

**Societal Impact:** The software will democratize access to travel information and services, empowering individuals from diverse backgrounds to explore new destinations and cultures.

**Health and Safety:** By providing real-time updates and alerts, the software enhances traveler safety by keeping them informed about potential risks and emergencies during their journey.

**Legal Compliance:** The solution will adhere to all relevant legal regulations and compliance standards to ensure data privacy, consumer protection, and fair business practices.

Overall, the proposed solution is poised to have a significant impact on various societal, health, safety, and legal issues by facilitating safe, seamless, and culturally enriching travel experiences for users.

**Deep Insight:**

The proposed solution not only addresses the practical challenges of travel planning and booking but also taps into the emotional and social aspects of travel. By prioritizing simplicity and usability, it provides a seamless experience for travelers while empowering travel agencies to deliver personalized services efficiently. Moreover, by promoting cultural awareness and ensuring legal compliance, the solution contributes to a more inclusive and responsible travel industry, enriching the travel experiences of users worldwide.

- **Target Group of Users:**

The target group of users for this solution includes individual travelers, families, corporate travelers, and travel agencies. They will benefit from the user-friendly interface, customizable options, and efficient management tools offered by the software, ultimately leading to a more satisfying travel experience.

- **Contribution to the development of scientific result:**

This project contributes to the development of scientific results by exploring efficient algorithms and user-centric design principles in the context of online travel agency software. The findings and methodologies employed in this project will be documented and shared through academic publications and industry forums, thereby enriching the knowledge base in the field of travel technology.

- **Literature Review:**

Previous studies in the literature have discussed various aspects of OTA software, including usability, customization, and efficiency. This study builds upon existing research by emphasizing the importance of simplicity and usability in addressing the challenges faced by travelers and travel agencies.

- **Existing Studies presented in the problem area and existing software solution:**  
**Fragmented Information:**

Existing studies have highlighted the issue of fragmented information across different travel platforms, leading to confusion and inefficiencies for travelers.

Software solutions such as Expedia, Booking.com, and TripAdvisor attempt to aggregate travel information from various sources to provide comprehensive search results for users.

[1][2][3]

- **Lack of Personalization:**

Research has identified a lack of personalized recommendations and itineraries as a common challenge in online travel planning.

Software solutions like Airbnb, Kayak, and Google Flights utilize user data and preferences to offer personalized travel suggestions and tailored booking options.<sup>[4][5]</sup>

- **Security and Compliance:**

Studies have addressed concerns related to data privacy, security, and legal compliance in the online travel industry, particularly with regards to payment processing and personal information handling.

Software solutions such as PayPal, Stripe, and Braintree provide secure payment gateways and adhere to strict compliance standards to ensure the safety of user data and transactions.<sup>[6]</sup>

- **Cultural and Social Impact:**

Some studies have explored the cultural and social implications of online travel planning, including the promotion of sustainable tourism practices and the preservation of local cultures. Software solutions like Responsible Travel, Culture Trip, and Airbnb Experiences emphasize authentic travel experiences and community engagement to promote cultural awareness and responsible tourism.

- **How the proposed solution extends the existing software solution in providing more benefits to user:**

Existing software solutions in the online travel agency space, such as Expedia, Booking.com, Airbnb, and TripAdvisor, have significantly transformed travel planning. However, there are still areas for improvement.<sup>[1][2][3][4]</sup>

Our proposed solution aims to streamline the user experience with a simpler interface, offer more personalized recommendations using advanced data analytics, provide real-time updates on travel arrangements, and enhance collaboration features, and bolster security through updated technology. These enhancements will provide users with a more efficient, personalized, and secure travel booking experience compared to existing platforms.

## 2. SOFTWARE DEVELOPMENT LIFE CYCLE

### 2.1 Process Model

#### Why Feature Driven Development (FDD) is a Great Fit for Travel Agency Software?

Travel agency software development thrives on clear functionalities and iterative improvement. Here's why FDD shines in this environment:

##### Analysis of Travel Agency Software:

- **Nature:** Travel agency software involves complex features like flight searches, hotel bookings, package creation, and integration with various travel service providers.
- **Environment:** User needs can evolve quickly – new destinations, travel restrictions, and customer preferences emerge constantly.

##### Suitability of FDD for Travel Agency Software:

Here's why FDD is a strong contender for developing our travel agency software:

- **Focus on Features:** FDD breaks down the software into small, well-defined features that can be prioritized, developed, and delivered iteratively. This aligns perfectly with the need for clear functionalities in travel agency software.
- **Iterative Development:** FDD emphasizes delivering working features in short cycles. This allows us to gather user feedback early and adapt the software to meet evolving needs in the travel industry.
- **Strong Collaboration:** FDD promotes close collaboration between developers, business stakeholders, and potentially even travel service providers. This is crucial for ensuring the software integrates well with various services and fulfills user requirements in a travel context.
- **Improved Quality:** FDD's focus on detailed feature models and pair programming helps catch defects early, leading to higher quality software. This is essential for a system handling sensitive user data and travel bookings.

##### Evidence Supporting FDD for Travel Agency Software:

- Case studies and success stories of FDD adoption in software development projects, showcasing its effectiveness in delivering high-quality software within budget and schedule constraints.
- Testimonials from industry experts and practitioners highlighting the benefits of FDD in managing complexity, mitigating risks, and ensuring stakeholder satisfaction.
- FDD's structured approach aligns well with the need for clear functionalities and integration with multiple travel service APIs.

### **Comparison with Other Methods:**

While FDD is a strong choice, consider these alternatives:

**Scrum:** Similar to FDD in its iterative nature, but Scrum requires a more flexible product backlog which might not be ideal for clearly defined features in travel software.

**Waterfall:** This traditional method lacks the iterative nature needed to adapt to changing user needs in the travel industry.

**Spiral Model:** The Spiral model combines elements of both waterfall and iterative development by incorporating risk analysis and prototyping. While the Spiral model allows for iterative refinement based on feedback and risk management, it may introduce complexities not suitable for all projects, especially those with well-defined features like travel agency software.

**RAD (Rapid Application Development):** RAD aims to expedite the development process by emphasizing prototyping, iterative development, and user involvement. It shares commonalities with FDD in its iterative approach. However, RAD's reliance on prototyping might pose challenges in ensuring the scalability and robustness of travel software, especially as system complexity increases.

## **2.2 Project Role Identification and Responsibilities**

In software development projects, key roles and their responsibilities include:

1. **Project Manager:** Oversees project planning, execution, and delivery; manages scope, schedule, budget, and risks; facilitates team communication.
2. **Product Owner:** Represents stakeholders, prioritizes requirements, collaborates with the team, accepts completed work, and ensures the product meets user needs.
3. **Development Team:** Comprising developers, testers, designers, and DevOps engineers; responsible for coding, testing, designing, and deploying software.
4. **Stakeholders:** Including clients, end-users, business owners, and subject matter experts; provide input, feedback, and domain expertise throughout the project.
5. **Technical Architect:** Designs system architecture, sets technical standards, ensures alignment with requirements, and collaborates with the team on implementation.
6. **Business Analyst:** Gathers and analyzes requirements, documents user stories, facilitates communication, and assists in backlog prioritization.
7. **Support and Maintenance Team:** Provides ongoing support, addresses issues, monitors performance, and ensures customer satisfaction post-deployment.

### 3. Requirement Analysis:

#### 3.1 Login:

##### **Functional**

- The user can log in to the system by entering a username and password.
- The system verifies the given username and password. If the username and password are valid, then the system allows the user to book tickets for transportation and hotels.
- If the given username or password is wrong, the system notifies the user by showing a message box. The message box contains a reset password button by which the user can change the password by verification with an email account.

Priority Level: High

Precondition: User needs to provide correct username and password.

##### **Nonfunctional**

- **Performance:** The login process should take no more than 3 seconds to authenticate the user.
- **Security:** User passwords must be stored securely using encryption techniques such as hashing with salt.
- **Accessibility:** The login page should be designed to be accessible to users with disabilities, following WCAG guidelines.

#### 3.2 SignUp:

##### **Functional**

- A user can sign up by providing the required information, e.g. name, username, email, phone number, gender, password, confirm password, and address.
- Password must have a length of at least 8 characters and must contain special characters and digits.
- The username must contain at least one special character and digit. The system checks if the given username matches with any existing username. If the username matches or is not valid, the user will be notified.
- If all the required information is given, the account is created, otherwise it will notify the user about the specific unfilled item.

Priority Level: High

Precondition: User needs to provide all valid information.

##### **Nonfunctional**

- **Usability:** The signup process should be intuitive and easy to understand, with clear error messages for incorrect input.
- **Performance:** Account creation should be completed within 5 seconds of submitting valid information.



- **Data Validation:** Ensure data validation is in place to prevent SQL injection attacks and other security vulnerabilities.

### 3.3 Logout:

#### **Functional**

- By clicking the logout button, logging out will succeed after confirmation, and the system will return the user to the home page.

Priority Level: Low

Precondition: User needs to login first.

#### **Nonfunctional**

- **Security:** Ensure that all session data is cleared upon logout to prevent unauthorized access.
- **Usability:** The confirmation dialog for logout should provide clear instructions and options for the user.

### 3.4 Profile:

#### **Functional**

- In the profile all the information will be shown where the user can edit his/her information.
- There will be an option to upload his image to the profile which is not mandatory.

Priority Level: Medium

Precondition: User needs to login first.

#### **Nonfunctional**

- **Performance:** The profile page should load quickly, even when loading large user images.
- **Privacy:** Users should have control over the visibility of their profile information to other users.
- **Compatibility:** Profile image uploads should support common image formats and sizes.

### 3.5 Home Page:

#### **Functional**

- Initially homepage will appear and show some information about the services.
- The home page will contain a short introduction and branding part. This page will also have a logo, search bar, quick menu bar and so on.
- The menu bar button will show bus, train, flight, hotel, activities, packages, wallet, booking information and about.
- On the home page, the user will find featured deals, destination details and ratings of the services made by other users.
- The home page will also contain a sign-in and sign-up button if the user is not signed in yet, else the sign-in and sign-out button will be substituted by the profile button along with the sign-out button.

- At the bottom of the page the contact details will be shown.

Priority Level: High

Precondition: User has the access to homepage.

### **Nonfunctional**

- **Performance:** The home page should load within 3 seconds on average internet connections.
- **Scalability:** Design the home page to handle high traffic loads during peak times.
- **Browser Compatibility:** Ensure the home page is compatible with major web browsers such as Chrome, Firefox, and Safari

## **3.6 Transportation:**

### **Functional**

- The transportation page categorized as bus, train, and flight will contain two combo boxes including 'From Station' and 'To Station' and a DateTimePicker to select the desired journey date.
- If required fields are selected and the search button is clicked, this page will show the bus information, otherwise, if any of the fields are not selected, the system will notify the user about the unfilled box.
- Bus information will have a 'Book' Button which will show the available seats of that bus if clicked. From the available seats, the user will be able to select any of them and book the seat.
- A back button will allow the user to navigate back from available seats to bus information.

Priority Level: Medium

Precondition: User has the access to homepage.

### **Nonfunctional**

- **Reliability:** Ensure accurate and up-to-date information is displayed for bus, flight, and train schedules.
- **Performance:** Search results for transportation options should be displayed within 5 seconds.
- **Localization:** Provide options for language selection for users from different regions.

### 3.7 Hotel:

#### **Functional**

- The hotel page will contain a combo box for the location selection and two Date Time Picker for check-in and check-out.
- If required fields are selected and the search button is clicked, this page will show the hotel information, otherwise, if any of the fields are not selected, the system will notify the user about the unfilled box.
- Hotel information will have a 'Book' Button which will show the available rooms of that hotel if clicked. From the available rooms, the user will be able to select any of them and book the room.
- The user will be able to add other services like breakfast, lunch and dinner while booking the session is incomplete.
- A back button will allow the user to navigate back from available rooms to hotel information.

Priority Level: Medium

Precondition: User has the access to homepage.

#### **Nonfunctional**

- **Availability:** Ensure the hotel booking system can handle concurrent bookings without conflicts.
- **Performance:** Search results for available rooms should be displayed within 5 seconds.
- **Payment Security:** Implement secure payment processing for hotel bookings to protect user financial information.

### 3.8 Activities:

#### **Functional**

- Other optional services like dining, café, cycling, skydiving, flyboarding and sightseeing will be available on this page according to the destination the user has selected before on the Hotel Page. These package suggestions will be shown close to the hotel's location.

Priority Level: Medium

Precondition: User has the access to homepage.

#### **Nonfunctional**

- **Accuracy:** Activities suggested should be relevant to the user's selected destination and preferences.
- **User Engagement:** Provide engaging descriptions and images for activities to attract user interest.
- **Integration:** Activities should be integrated with maps or navigation services for easy access.

### 3.9 Packages:

#### **Functional**

- Combo packages will be available on the packages page, from where the user will be able to book all in one package.

Priority Level: Medium

Precondition: User has the access to homepage.

#### **Nonfunctional**

- **Customization:** Allow users to customize package options based on their preferences and budget.
- **Performance:** Package details should load quickly, even when including multiple components.
- **Feedback:** Gather feedback from users to continuously improve package offerings.

### 3.10 Booking Info:

#### **Functional**

- The user will be able to see all the booking info he has booked so far. If he wants to delete or add any of his bookings, he can make it from the 'Booking Info' page.

Priority Level: High

Precondition: User needs to login first.

#### **Nonfunctional**

- **Accessibility:** Ensure booking information is presented in a clear and organized manner for easy navigation.
- **Data Integrity:** Booking info should be accurate and reflect the latest updates or changes made by the user.
- **Backup and Recovery:** Implement regular backups of booking data to prevent data loss in case of system failure.

### 3.11 Wallet:

#### **Functional**

- A wallet is mainly the payment option which will result from the previous bookings of the services. This page will make a summation of all booking prices and show the receipt to the user.
- There will be two types of payment systems including cash and online. For the users who will pay cash, they will have to visit the office three days before the trip and pay the dues. The bookings will be cancelled if the user does not respond according to these conditions.

Priority Level: High

Precondition: User needs to login first.

#### **Nonfunctional**

- **Transaction Security:** Ensure secure encryption and authentication for online payment transactions.
- **Auditability:** Maintain a log of wallet transactions for auditing and tracking purposes.
- **Customer Support:** Provide clear instructions and contact information for users who need assistance with wallet transactions.

### **3.12 About:**

#### **Functional**

- The About page will contain information about the policies, broad information, achievements and so forth.

Priority Level: Low

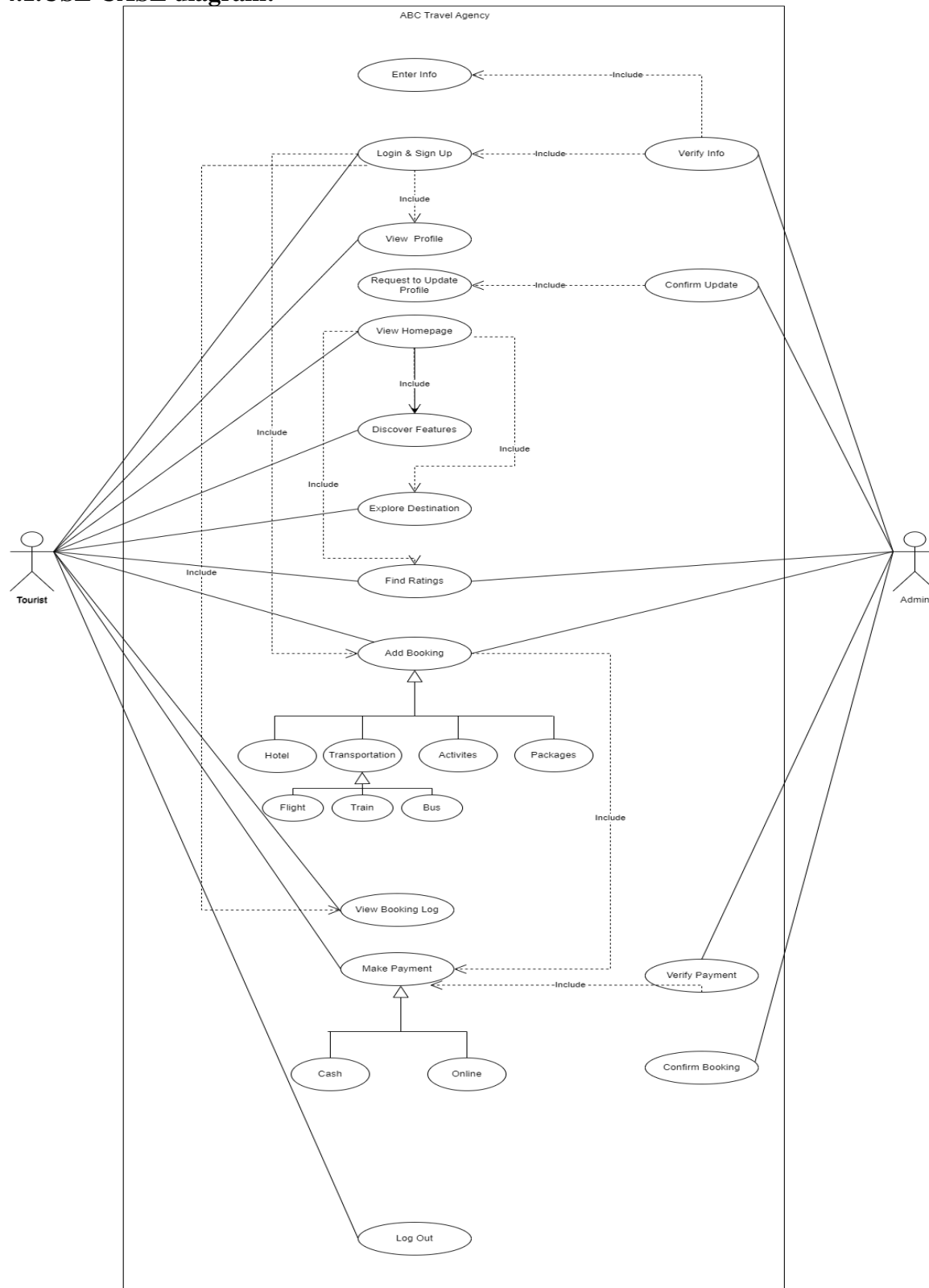
Precondition: User has the access to homepage.

#### **Nonfunctional**

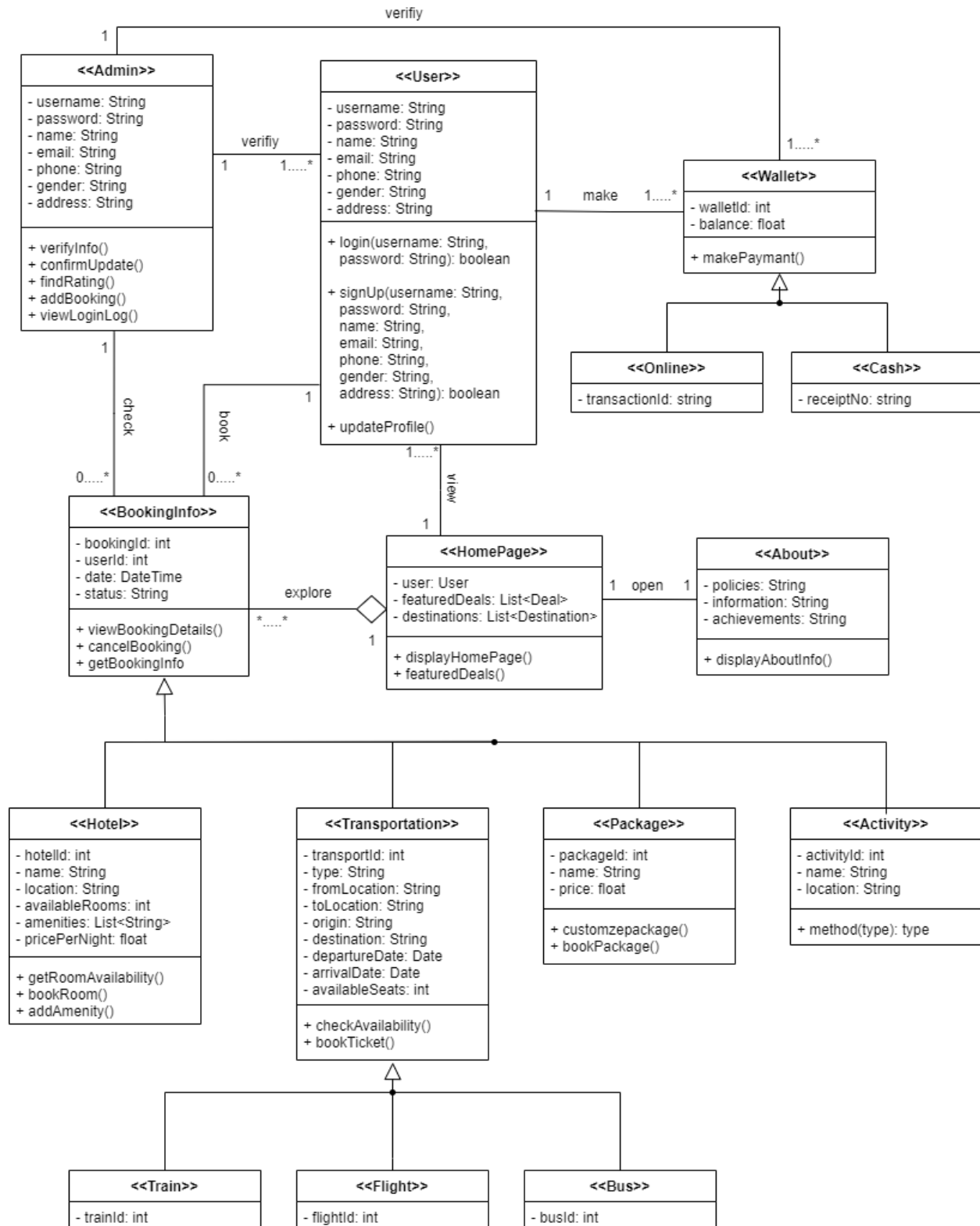
- **Content Quality:** Ensure the information provided on the About page is accurate, up-to-date, and relevant.
- **User Engagement:** Use engaging visuals and storytelling techniques to make the About page interesting for users.
- **Mobile Responsiveness:** The about page should be optimized for viewing on mobile devices for users on the go.

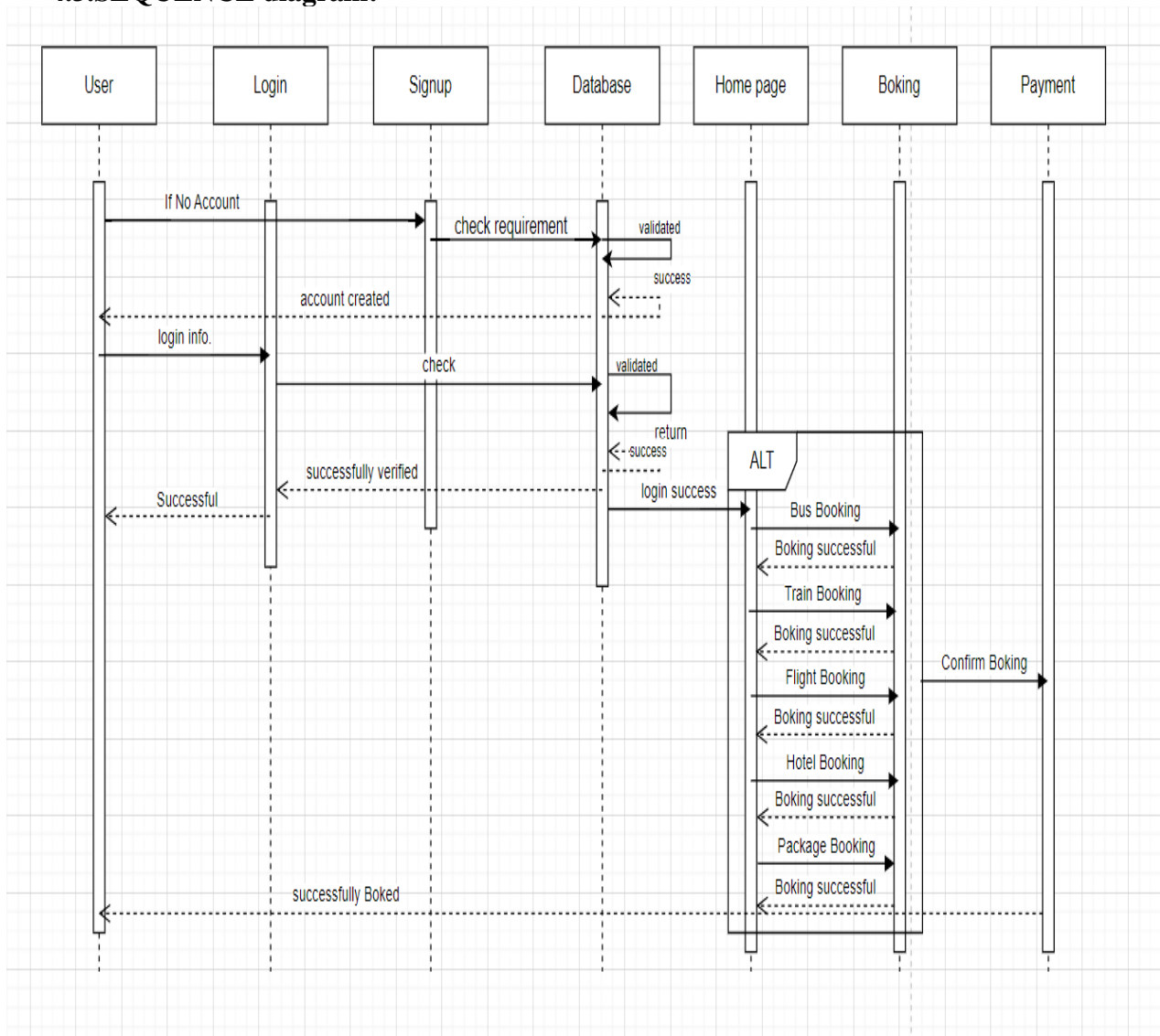
## 4. Diagram

### 4.1.USE CASE diagram:



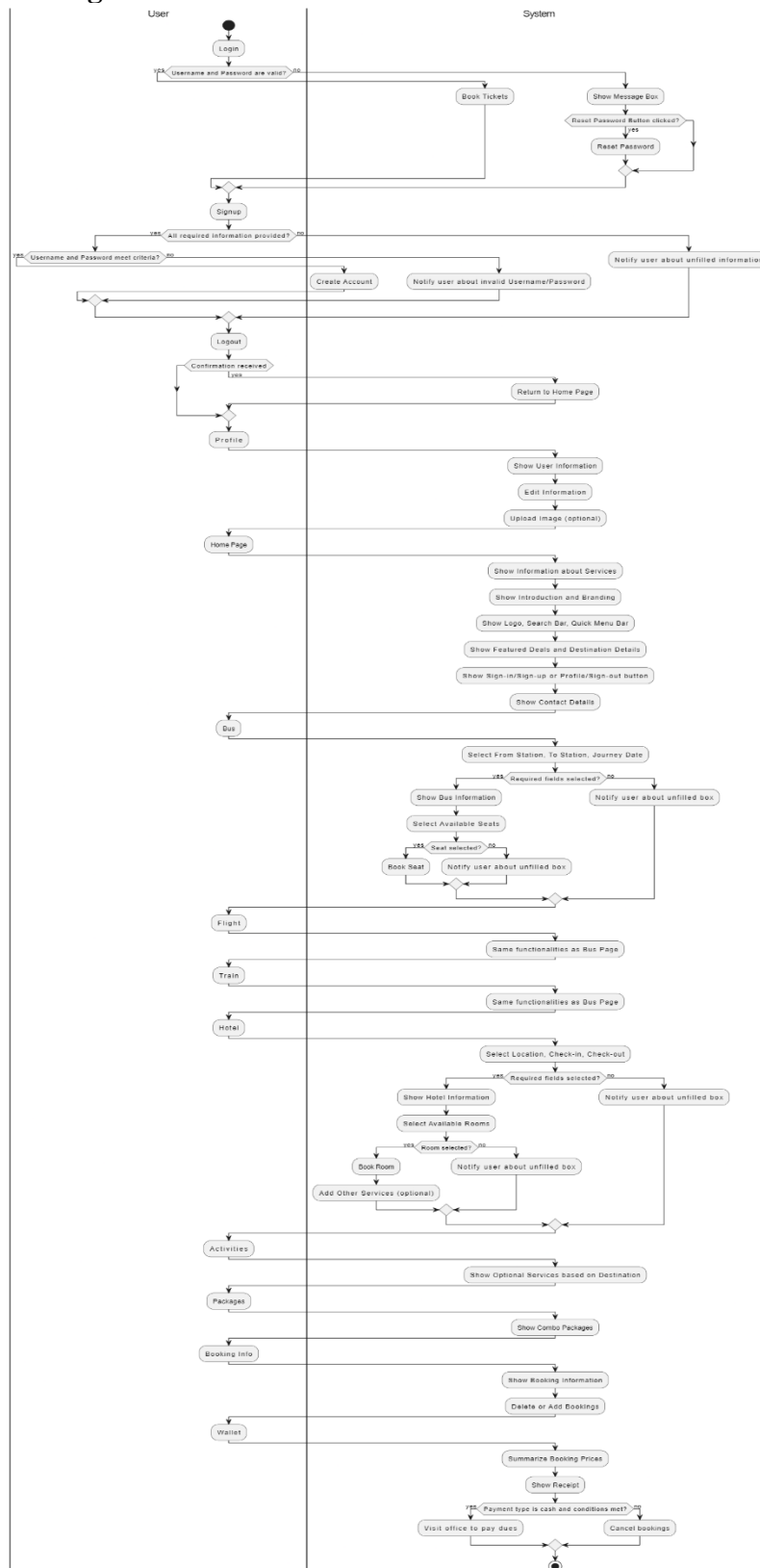
## 4.2.CLASS diagram:



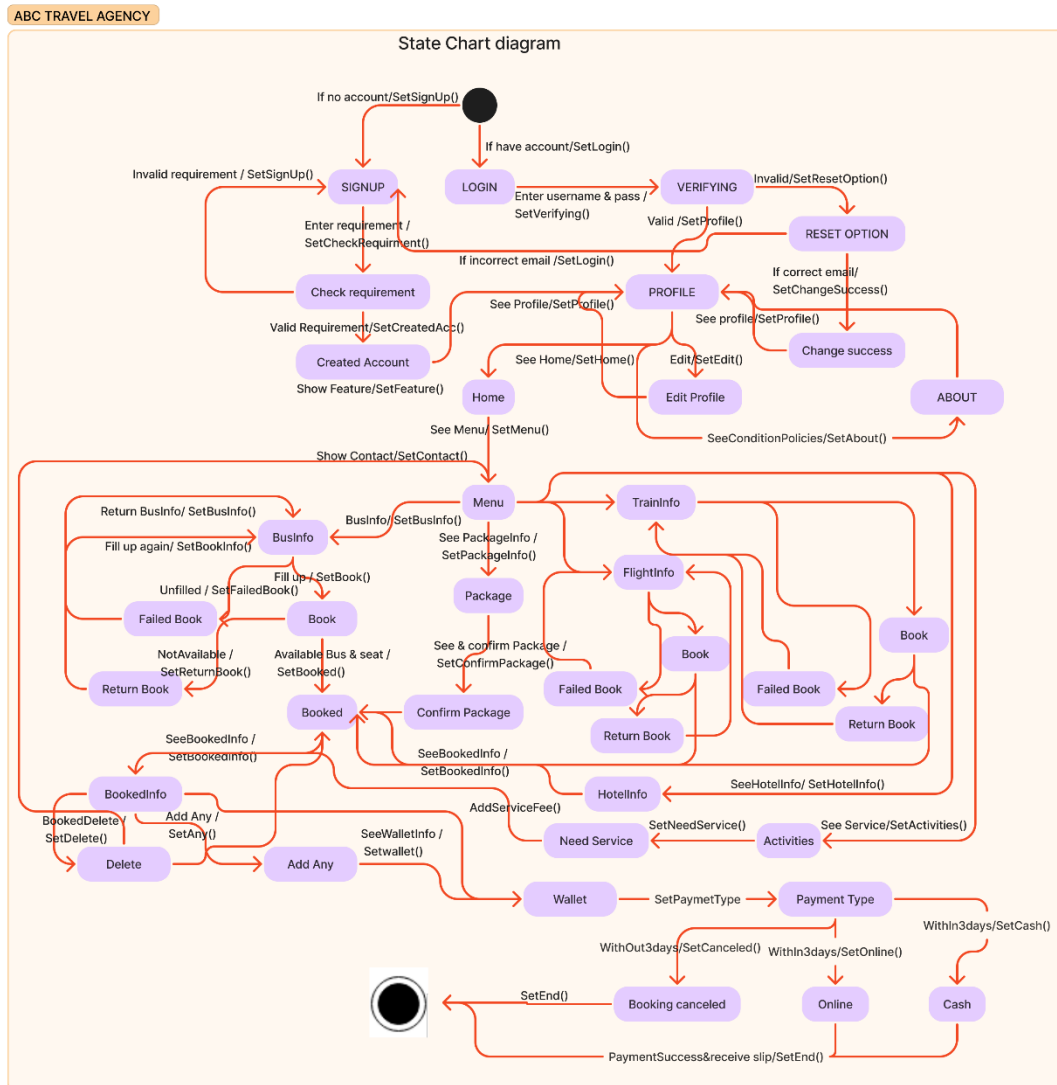
**4.3.SEQUENCE diagram:**



#### 4.4.ACTIVITY diagram:



#### 4.5.STATECHART diagram:



**References:**

1. <https://www.booking.com/>
2. <https://www.tripadvisor.com/>
3. [https://www.expedia.com/?locale=en\\_US&siteid=1&semcid=US.B.GOOGLE.BT-c-EN.GT&semddl=a118255096950.b1143063384553.g1kwd-12670071.e1c.m1CjwKCAiAxaCvBhBaEiwAvsLmWMkmM7iU9PUiOc-WC\\_Wg9QHi7rMXJQ58RO02E6YJCR2PXH\\_vgkEgxhoCDIkQAvD\\_BwE.r186c5ceb1813f82e09a3d77e1d04605e5d07dc63d3419b29b7e84c18818d0c03e.c12Pt3zIutmFP\\_UEmNzk9qhg.j11001441.k1.d1624928452209.h1e.i1.l1.n1.o1.p1.q1.s1.t1.x1.fl.u1.v1.w1&gadsource=1&gclid=CjwKCAiAxaCvBhBaEiwAvsLmWMkmM7iU9PUiOc-WC\\_Wg9QHi7rMXJQ58RO02E6YJCR2PXH\\_vgkEgxhoCDIkQAvD\\_BwE](https://www.expedia.com/?locale=en_US&siteid=1&semcid=US.B.GOOGLE.BT-c-EN.GT&semddl=a118255096950.b1143063384553.g1kwd-12670071.e1c.m1CjwKCAiAxaCvBhBaEiwAvsLmWMkmM7iU9PUiOc-WC_Wg9QHi7rMXJQ58RO02E6YJCR2PXH_vgkEgxhoCDIkQAvD_BwE.r186c5ceb1813f82e09a3d77e1d04605e5d07dc63d3419b29b7e84c18818d0c03e.c12Pt3zIutmFP_UEmNzk9qhg.j11001441.k1.d1624928452209.h1e.i1.l1.n1.o1.p1.q1.s1.t1.x1.fl.u1.v1.w1&gadsource=1&gclid=CjwKCAiAxaCvBhBaEiwAvsLmWMkmM7iU9PUiOc-WC_Wg9QHi7rMXJQ58RO02E6YJCR2PXH_vgkEgxhoCDIkQAvD_BwE)
4. <https://www.airbnb.com/>
5. <https://www.kayak.co.in/?ispredir=true>
6. <https://www.paypal.com/bd/home>

## Rubric for Project Assessment (CO3)

Criteria	Marks distribution (Max 4X5= 20)				Acquired Marks
	Missing/ Incorrect (0-1)	Inadequate (2)	Satisfactory (3-4)	Excellent (5)	
<b>Selection of Software Engineering Models</b>	Does not articulate a position or argument of choosing appropriate model. Does not present any evidence to support the arguments for the choice of the model.	Articulates a position or argument for choosing models that is unfocused or ambiguous. Presents incomplete/vague evidence to support argument for model choice.	Articulates a position or argument of choosing models that is limited in scope. Does not present enough evidence to support the argument for the choice of the model	Clearly articulates a position or argument for the choosing software engineering models. Presents sufficient evidence to support argument for the model selection	
<b>Role identification and Responsibility Allocation</b>	The project has poor project management plans for identifying roles and assigning the responsibilities	Identify few roles in the project management where some of the roles are left alone with any project responsibilities	Identify most of the roles in the project management and assign their responsibilities	Well planned project with proper role identification and responsibility allocation in the project management activities	
<b>Impact identification</b>	Student vaguely discuss the impact of societal, health, safety, legal, cultural, or environmental issues in their project	Student provided with partial relevance to the impact of societal, health, safety, legal, cultural, or environmental issues in their project	Student fairly provided the analysis to the impact of societal, health, safety, legal, cultural, or environmental issues in their project	Student comprehensively provided the analysis to the impact of societal, health, safety, legal, cultural, or environmental issues in their project	
<b>Formatting and Submission</b>	Project report is not complete and Several errors in spelling and grammar. Present a Confusing organization of concepts, supporting arguments, and real-life example. Sentences rambling, and details are repeated.	Some errors in spelling and grammar. Some problems of organizing the answer in a logical order of defining, elaborating, and providing real-life examples.	Few errors in spelling and grammar. Presents most of the details in a logical flow of organization in definition, details, and example.	Project report is complete and No errors in spelling and grammar. Consistently presents a logical and effective organization of definition, details, and real-life example of the topic.	
<b>Acquired marks:</b>					
<b>CO Pass / Fail:</b>					

## Rubric for Project Assessment (CO4)

Marking Criteria	Marks Distribution (Maximum 3X5=15)				Acquired Marks
	Missing/ Incorrect (0-1)	Inadequate (2)	Satisfactory (3-4)	Excellent (5)	
<b>Project Planning</b>	Missing or incorrect project plan;	Insufficient project plan provided: project team, project tasks, goals etc. stated poorly.	Sufficient information provided : project team members, their tasks, project plan discussed in details.	Thorough and relevant project plan is provided; project plan is clear and easy to follow.	
<b>Effort Estimation and Scheduling</b>	Missing or incorrect effort estimation or schedules based on available project resources	Insufficient or poorly stated effort estimation or schedules based on available project resources	Correct or sufficient technique used for effort estimation or schedules based on available project resources	Project estimation was described using proper effort estimation or schedules based on available project resources	
<b>Risk Management</b>	Risk analysis activities were missing or inappropriate for the specific project: unidentified risks or wrongly categorized risks or not prioritized properly.	Risks are partially identified(insufficient) and not properly categorized or not prioritized properly.	Sufficient and critical risks are identified(insufficient) and properly categorized but not prioritized properly.	Sufficient and appropriate risks are identified, analyzed, and properly categorized or prioritized.	
<b>Acquired Marks:</b>					
<b>CO Pass / Fail:</b>					