

# **Title: Online travelling booking system**

**CAPSTONE PROJECT REPORT**

***Submitted by***

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# **CSA0912 Programming in Java for Accessing Database**

**SIMATS ENGINEERING**

**THANDALAM**

**SEP 2024**

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**ABSTRACT:**

"The **Travel Booking Management System (TBMS)** is a cutting-edge, user-friendly platform designed to streamline the travel planning process. This innovative application enables users to effortlessly search, book, and manage their trips, all within a secure and intuitive environment. The TBMS integrates key features such as destination exploration, flight and accommodation booking, itinerary management, and personalised travel recommendations. Users can easily discover and book their ideal travel options, organise their trips, and receive real-time updates and notifications. The system also provides detailed travel guides and visual itineraries, empowering users to make informed decisions and enhance their travel experiences. Adhering to industry standards for data security and privacy, the TBMS ensures that sensitive user information is protected at all times."

**INTRODUCTION:**

"The Online Travel Booking System is a cutting-edge, comprehensive platform designed to revolutionise the way individuals plan and book their trips. Developed using Java, a powerful and versatile programming language, this system provides a seamless and user-friendly experience for users while ensuring robust backend functionality for travel data management.

Leveraging Java's object-oriented capabilities, the system ensures modularity, scalability, and maintainability, making it adaptable to the evolving needs of online travel booking. For users, the system includes tools for destination exploration, flight and accommodation booking, itinerary management, and personalised travel recommendations. Users can easily search and book their ideal travel options, organise their trips, and receive real-time updates and notifications. The system also supports reporting and analytics, offering valuable insights into travel trends, booking patterns, and destination popularity. By automating routine travel planning and providing personalised insights, the Online Travel Booking System helps users make informed decisions, improve travel efficiency, and achieve a stress-free travel experience. The development of this system in Java ensures a high level of reliability and performance.

Java's robust standard libraries, platform independence, and extensive community support make it an ideal choice for building complex applications like an Online Travel Booking System. The use of Java also allows for easy integration with other technologies and systems, facilitating the implementation of additional features such as AI-driven travel recommendations, integration with loyalty programs, and real-time travel alerts. Overall, the Online Travel Booking System exemplifies the power of Java in creating sophisticated, efficient, and user-centric applications for online travel booking."

**PROBLEM STATEMENT:**

The Online Travel Booking System aims to simplify and improve the process of planning and booking trips while providing users with comprehensive tools to manage their travel itineraries. However, existing travel booking systems often present a fragmented and cumbersome user experience, lacking intuitive interfaces, real-time updates, and personalised travel recommendations. Moreover, users face challenges in tracking booking details, managing travel documents, and receiving timely notifications. Administrators also struggle with inefficient user management, inadequate data analytics, and limited reporting capabilities. To address these challenges, the Online Travel Booking System will provide an integrated platform for users to seamlessly search, book, and manage their trips, including real-time booking updates, personalised travel recommendations, and secure document storage. Key functionalities will include intuitive destination exploration, flight and accommodation booking, itinerary management, and personalised travel insights. The system will prioritise security, scalability, and performance to handle large volumes of booking data and safeguard sensitive user information, ensuring a seamless and efficient travel booking experience for users and administrators alike."

**OBJECTIVES:**

Here's a rewritten objectives and expected outcomes section for an online travel booking system, inspired by the structure and content of the original.

**✔** **Secure Travel Data Management:** Ensuring the security and privacy of users' travel data is crucial. The system must implement robust encryption methods and adhere to industry standards for data security, protecting sensitive information such as booking details, travel documents, and payment records.

**✔** **Comprehensive Travel Booking and Management:** A well-designed backend is essential for efficiently managing users' travel bookings, including flight and accommodation reservations, itinerary management, and travel documentation. The system should provide administrative functionalities that allow users to easily search and book travel options, manage bookings, and generate detailed travel itineraries.

**✔ Scalability and Performance:** The system must be designed to handle a large volume of travel bookings and user interactions without compromising performance. This involves optimising the code for efficiency, ensuring database integrity, and implementing load balancing techniques. Scalability is crucial for accommodating future growth and expanding the system's capabilities as users' travel booking needs evolve.

**EXPECTED OUTCOMES:**

A comprehensive Online Travel Booking System developed using Java is expected to simplify and enhance the process of planning and booking trips for users. The system should offer features such as destination exploration, flight and accommodation booking, itinerary management, and personalised travel recommendations, ensuring a user-friendly interface that users can easily navigate. For administrators, it should provide efficient tools for managing user accounts, monitoring system performance, and generating insights from travel data. Additionally, the system should incorporate secure travel data management and real-time updates, enhancing the overall reliability and effectiveness of online travel booking. By automating and optimising these processes, the system aims to improve users' travel experiences, reduce the risk of booking errors, and increase travel satisfaction and loyalty.

### **Materials and Methods:**

#### **Materials:**

* **Development Environment**: Eclipse IDE or IntelliJ IDEA.
* **Programming Language**: Java (JDK 8 or higher).
* **Database Management System**: MySQL or PostgreSQL for data storage.
* **Libraries/Frameworks**:
  + JavaFX for the graphical user interface.
  + JDBC for database connectivity.
* **Version Control System**: Git for code management and collaboration.
* **Server**: Apache Tomcat for deploying web applications.
* **Testing Tools**: JUnit for unit testing.

#### **Methods:**

* **Requirement Analysis**: Identify and document the functional and non-functional requirements of the Online Travel Booking System through stakeholder interviews and analysis. Gather information on key features like flight booking, hotel reservations, car rentals, and travel package management.
* **System Design**: Design the architecture using UML diagrams, including class, sequence, and use case diagrams. Define the database schema for storing travel services, user data, booking information, and payment details.
* **Development**:
  + **Frontend Development**: Use JavaFX to create an intuitive GUI for searching travel services, booking flights, hotels, and car rentals, and managing travel itineraries.
  + **Backend Development**: Implement the business logic using Java classes, ensuring a modular approach with a clear separation of concerns. Develop features for service search, booking management, payment processing, and user account management.
  + **Database Integration**: Use JDBC to connect to the database, perform CRUD operations, and ensure data integrity. Implement features for secure storage of user data, booking history, and payment transactions.
* **Testing**: Conduct unit testing using JUnit to ensure each component functions correctly. Perform integration testing to ensure seamless interaction between components and that data flows correctly between the frontend, backend, and database.
* **Deployment**: Deploy the application on a local or cloud-based server using Apache Tomcat. Ensure proper configuration for database connectivity, data security, and system scalability.
* **Documentation and Maintenance**:
  + Provide comprehensive user and developer documentation, including setup instructions, user guides, and API documentation.
  + Implement a feedback loop for continuous improvement, addressing user feedback and any post-deployment issues.
  + Regularly update the system to incorporate new features and enhancements, ensuring it remains effective and user-friendly.

**CONCLUSION:**

In conclusion, the online travel booking system developed in this project offers a user-friendly, efficient, and secure platform for travellers to plan and book their trips. With its robust features, intuitive interface, and scalable design, this system has the potential to revolutionise the way people book travel arrangements online. By providing real-time availability, personalised recommendations, and streamlined booking processes, this system can enhance the overall travel experience, reduce booking errors, and increase customer satisfaction. Furthermore, the system's ability to integrate with various travel services and providers enables it to offer a comprehensive and competitive travel booking solution.

**IMPLEMENTATION:**

**CODE:**

import java.util.ArrayList;

import java.util.List;

class Trip {

private String destination;

private double price;

private int availableSeats;

public Trip(String destination, double price, int availableSeats) {

this.destination = destination;

this.price = price;

this.availableSeats = availableSeats;

}

public String getDestination() {

return destination;

}

public double getPrice() {

return price;

}

public int getAvailableSeats() {

return availableSeats;

}

public boolean bookSeat() {

if (availableSeats > 0) {

availableSeats--;

return true;

}

return false;

}

public String toString() {

return "Destination: " + destination + ", Price: $" + price + ", Seats available: " + availableSeats;

}

}

class Booking {

private Trip trip;

private String customerName;

public Booking(Trip trip, String customerName) {

this.trip = trip;

this.customerName = customerName;

}

public String toString() {

return "Customer: " + customerName + ", Trip to: " + trip.getDestination() + ", Price: $" + trip.getPrice();

}

}

class BookingSystem {

private List<Trip> trips = new ArrayList<>();

private List<Booking> bookings = new ArrayList<>();

public BookingSystem() {

trips.add(new Trip("America", 500.0, 10));

trips.add(new Trip("New York", 700.0, 5));

trips.add(new Trip("India", 900.0, 8));

}

public void showAvailableTrips() {

System.out.println("Available Trips:");

for (int i = 0; i < trips.size(); i++) {

System.out.println((i + 1) + ". " + trips.get(i).toString());

}

}

public boolean bookTrip(int tripIndex, String customerName) {

if (tripIndex < 0 || tripIndex >= trips.size()) {

System.out.println("Invalid trip selection.");

return false;

}

Trip trip = trips.get(tripIndex);

if (trip.bookSeat()) {

bookings.add(new Booking(trip, customerName));

System.out.println("Booking successful!");

return true;

} else {

System.out.println("Sorry, no seats available.");

return false;

}

}

public void showBookings() {

if (bookings.isEmpty()) {

System.out.println("No bookings available.");

} else {

System.out.println("Bookings:");

for (Booking booking : bookings) {

System.out.println(booking.toString());

}

}

}

}

public class R192211332 {

public static void main(String[] args) {

BookingSystem system = new BookingSystem();

system.showAvailableTrips();

String customerName = "Rushitha";

int tripChoice = 1;

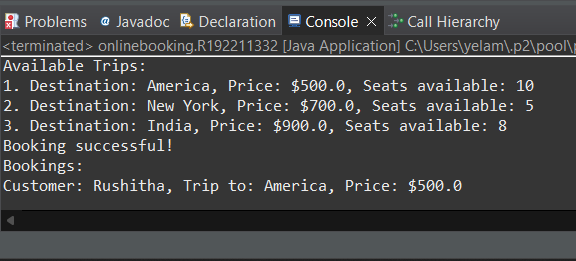
system.bookTrip(tripChoice - 1, customerName);

system.showBookings();

}

}

**OUTPUT:**



**REFERENCES:**

**Here are 10 references for an online travel booking system**

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