

Exposys Data Labs

Bengaluru,Karnataka,560064



Internship report on

Flight Booking System using Web Development in java

Internship

By

Name : **G.Venkata Niveditha**

Under the guidance of

Exposys Data Labs



 Hireaven

Abstract

The Online Flight Booking System is a comprehensive Java-based web application developed to streamline and enhance the flight booking process for users. It features secure user authentication, allowing only registered users to access the system, and manages user sessions to protect data.

The application enables users to search for flights based on departure and arrival cities, travel dates, and other criteria, displaying matching flights for selection. Booking tickets is made easy with an intuitive form where users can enter passenger details and receive a unique booking ID upon reservation. Additionally, users can view their current and past bookings, with a search feature to locate specific bookings by ID. The system includes a secure payment gateway to finalize bookings and provides a confirmation page with booking details.

Designed with a focus on usability, security, and reliability, this application leverages Java Servlets, JSP, and JDBC to deliver a robust and efficient user experience, ensuring seamless operations for travelers and administrators alike.

The Online Flight Booking System also incorporates a user-friendly interface with easy navigation through features such as booking history and payment confirmation. The current bookings section allows users to review and manage their reservations, while the logout feature ensures secure exit from the system.

Advanced error handling and validation mechanisms are in place to provide a smooth and error-free experience. The application supports multiple payment options to enhance convenience for users. It is built to be scalable, allowing for future enhancements and additional features as needed. Overall, this project demonstrates the integration of core Java technologies to deliver a reliable and user-centric flight booking platform.

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1. Introduction

Overview

The Flight Booking System project is developed to simplify the process of booking flights by providing a user-friendly interface and automating various aspects of the booking process. This system is developed using Java and implemented in the NetBeans Integrated Development Environment (IDE). It includes features such as user authentication, flight search, booking management, payment processing, booking confirmation, and secure logout functionality.

Objectives

The primary objective is to create an efficient and comprehensive platform for flight booking. The system aims to:

- Authenticate users securely.
- Enable users to search for flights based on their travel preferences.
- Facilitate the booking process.
- Manage and display current bookings.
- Process payments securely.
- Generate and display booking confirmations.
- Ensure data security through secure logout mechanisms.

Scope

The project scope includes the development of:

1. **Home Page:** Main interface with access to all features.
2. **User Authentication:** Secure login system.
3. **Flight Search:** Module for finding flights based on user input.
4. **Booking Management:** Functionality for booking flights.
5. **Current Bookings:** Display of user's existing reservations.
6. **Payment Processing:** Secure transaction handling.
7. **Booking Confirmation:** Generation of confirmation upon successful booking.
8. **Logout:** Secure user logout feature.

Technologies Used

- **Java:** Core programming language.
- **NetBeans IDE:** Development environment.
- **JDBC:** For database interactions.
- **HTML/CSS:** For user interface design.
- **Servlets and JSP:** Handling client-server interactions.
- **MySQL:** Database system.
- **APIs:** Payment gateway and flight data integration.

Significance

The project addresses common challenges in flight booking, providing a unified, secure, and user-friendly platform. It demonstrates practical applications of software development principles, database management, and web technologies.

2. Existing Method

Traditional Booking Systems

Traditionally, flight booking was done through travel agencies, airline offices, or over the phone. This method had several limitations:

- Time-consuming process with manual data entry.
- Limited access to flight options and comparisons.
- Higher chances of errors and data inconsistency.
- Inconvenience in managing bookings and payments.

Online Booking Portals

Existing online portals provided improvements but still had issues such as:

- Complex user interfaces.
- Security concerns over payment transactions.
- Lack of integration with multiple airlines.
- Inadequate customer support and booking management features.

Drawbacks

- Limited Access to Flight Options
- Complex User Interfaces
- Hidden Fees and Charges

3. Proposed Method with Architecture

Proposed System

The proposed Flight Booking System aims to address these issues by providing:

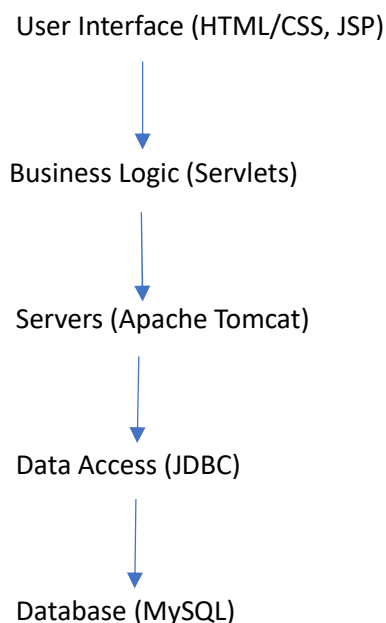
- A streamlined and intuitive user interface.
- Secure authentication and transaction processes.
- Integrated search functionality covering multiple airlines.
- Comprehensive booking management and confirmation features.

System Architecture

The architecture of the proposed system is divided into several layers:

1. **Presentation Layer** : User interface designed with HTML/CSS and JSP.
2. **Business Logic Layer** : Implemented using Java Servlets to handle client requests and server responses.
3. **Data Access Layer** : Using JDBC to interact with the MySQL database.
4. **Database Layer** : MySQL database to store user information, flight details, bookings, and payment records.

Architecture Diagram:



4. Methodology

Requirement Analysis

Gathering requirements through stakeholder meetings and research to understand user needs and system specifications.

System Design

Designing the system architecture, database schema, and user interfaces based on the gathered requirements from the internet and by analysing the existing websites on flight booking system and modifying the existing and adding additional features to the booking system.

Development

Implementing the system components using Java, JSP, Servlets, and server Apache Tomcat and JDBC mysql connector in NetBeans IDE.

Testing

Conducting unit tests, integration tests, and user acceptance tests to ensure the system meets the required functionality and performance standards.

Deployment

Deploying the system on a web server and making it accessible to users.

Maintenance

Providing ongoing support and updates to ensure the system remains functional and secure.

This is the methodology of the flight Booking system.

5. Implementation

Home Page

Designed using HTML/CSS, provides navigation to all features of the system.

User Authentication

Implemented with Java Servlets to handle login and logout requests securely.

Flight Search

Developed using JSP and Servlets, allowing users to search for flights based on criteria such as destination, date, and airline.

Booking Management

Implemented using Java, enabling users to select flights, enter passenger details, and book tickets.

Current Bookings

Designed to display user's existing bookings, allowing for review and management.

Payment Processing

Integrated with secure payment gateway APIs to handle transactions.

Booking Confirmation

Generates confirmation details using JSP and displays them to the user.

Logout

Ensures secure logout by invalidating user sessions.

6. Conclusion

The Flight Booking System project successfully addresses the limitations of traditional and existing online booking methods by providing a user-friendly, efficient, and secure platform. Through rigorous requirement analysis, thoughtful design, and meticulous implementation, the system offers seamless flight search, booking management, and payment processing features. Leveraging Java, JSP, Servlets, and JDBC within the NetBeans IDE, the project demonstrates robust software engineering practices. Comprehensive testing ensures the system's reliability and security, while ongoing maintenance guarantees its continued functionality. Ultimately, this project not only enhances the flight booking experience for users but also serves as a testament to the effective application of modern software development techniques. Future improvements and scalability options will further solidify its position as a comprehensive solution in the travel industry.