IT314 – Software Engineering
G27 Flight Booking System
Functional and Non Functional Requirements

Functional Requirements:

User Registration:

1. Simple account creation with essential details like name, email and password, ensuring secure storage of user data.
2. Allows users to log in smoothly using stored credentials.

Login:

1. Provides secure access using email and password, with protection against unauthorized logins.
2. Manages user sessions effectively and handles failed login attempts.

Admin Controls:

1. Admins can add, update and delete flight details using the admin panel.
2. Any changes made by admin are instantly visible in user searches.

Flight Search & Filter:

1. Users can search for flights based on criteria like date, destination and prices.
2. Results can be sorted and filtered by factors like price, duration, airline and time of day.

Seat Selection:

1. Real time seat availability allows users to select preferred seats.
2. User interface shows seat map to help user make selections.

Payment Gateway Integration:

1. Payment processing through trusted gateways ensures secure transactions.
2. User data is protected with end to end encryption during payment.

Ticket Generation:

1. Automated generation of tickets post-booking, available for download or email delivery.
2. Tickets contain all essential booking details.

Booking History:

1. Users can view and track past bookings with details like travel dates and current status.
2. Past booking information available for easy reference.

Customer Support:

1. Email and chat support along with FAQ section for common questions.

2. Ensure users can get help for any issue or query.

Add-ons:

1. Users can add extra services (e.g., meals and baggage) with updated costs reflected in real-time.
2. Cost calculations adjust dynamically as users select additional services.

Promotions & Coupons:

1. Users can apply discount codes during checkout to get cost savings.
2. Detailed breakdowns of cost adjustments are provided to users after coupon application.

Flight Recommendations:

1. System suggests flights based on user preferences and past behaviors.
2. Personalized recommendations enhance the user’s booking experience.

Flight Status Updates:

1. Users receive timely notifications about flight delays or changes via email or SMS.
2. Keeps users informed to manage their travel plans accordingly.

Airline Promotions:

1. Admins can manage airline-specific promotions that show up in flight searches.
2. Highlight special offers to increase user engagement.

Loyalty Plans:

1. Users earn reward points with bookings.
2. These points can be redeemed for discounts.

Non-Functional Requirements:

Security:

1. Data encryption, secure API calls, and advanced authentication methods ensure platform security.
2. User credentials and payment information are protected against unauthorized access.

Accessibility:

1. The platform is designed to be accessible, adhering to standards for users with disabilities.

Scalability:

1. The system architecture supports growth by optimizing database and server performance.
2. Ensures high performance even with increasing numbers of users and data volume.

Availability:

1. The platform is designed for high availability with minimal downtime through reliable hosting.
2. Failover mechanisms ensure the system operates 24/7 with minimal disruptions.

User Friendly:

1. User interface design focuses on being intuitive and easy to navigate.
2. Regular user testing helps identify and fix usability issues.

Reliability:

1. Ensures consistent performance with accurate data handling and minimal errors.
2. Automated tests are used to validate the system's reliability.

Data Integrity:

1. Data accuracy and consistency are maintained with validation checks during operations.
2. Secure processes prevent unauthorized changes to critical user data.