Project Title

(flight reservation website)

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Date: [5/5/2025]

1-Importance of a Flight Reservation Website Project

1. Business and Economic Importance

- Increased Revenue: By simplifying the booking and payment processes, the website can lead to higher booking rates and increased profits for airlines or travel agencies.
- Wider Customer Reach: Users can access the website anytime and from anywhere, helping companies reach more potential customers.
- Reduced Operational Costs: Automating the reservation process reduces the need for manual labor and call centers.

2. Technical and Developmental Importance

- Comprehensive Development Model: This project involves both front-end and back-end development, making it ideal for learning and applying modern web technologies.

- Hands-on Experience: Developers can gain practical experience with databases, APIs, user authentication, and responsive design.
- Enhanced User Experience: Features like seat selection, flight comparison, and online check-in provide users with a smooth and efficient experience.

3. User-Centered Benefits

- Easy Access to Information: Users can search, filter, and compare flights and prices easily.
- Convenience and Flexibility: Booking, rescheduling, or canceling flights can be done online, saving time and effort.
- Real-Time Updates: Users receive instant information about flight availability, delays, or schedule changes.

4. Contribution to Digital Transformation

- Supports Digitalization: Helps modernize the aviation and tourism sectors by moving away
- from manual processes and adopting digital solutions.
- Improved Service Quality: Speeds up service delivery and increases accuracy and reliability for both users and service providers.

👥 Target Audience (Users/Customers):

These are the people who will use your website to book visas or flights:

1-Travelers:
Tourists looking to book visas and tickets easily.
People traveling for work, study, or medical reasons.

2-Students:
Those applying for study visas abroad.

3-Families:
Looking for group or family travel packages.

4-First-time travelers:
Who need help understanding visa requirements.

5-Business Professionals:
Who travel frequently and need fast, reliable booking.

6-Expat Communities:
Needing visa renewals or travel assistance.

🤝 **Stakeholders (People Involved in or Affected by the Business):**
These are the individuals or groups who have an interest in the website's success:

Website Owner / Business Owner:
Manages the service, strategy, and client relations.

Travel Agents / Visa Consultants:
Process requests, handle applications, and coordinate bookings.
Customers:
End users who expect a smooth and secure experience.

Embassies / Visa Centers:
External entities that issue the visas (indirect stakeholders).

Airlines:
Partners for ticket bookings and updates.

Technical Team (Developers / Designers):
Build, maintain, and improve the website platform.

Marketing Team:
Promotes the service through social media, SEO, and ads.

4-methodology

.Why Agile is Better for a Flight Reservation We-site

1. Evolving Requirements

.Flight booking systems often require:

Frequent updates (e.g., promotions, airline partnerships).

New features like mobile integration, loyalty programs, seat maps, etc.

Agile allows for iterative development, making it easier to adapt to these evolving business needs.

2. Frequent Feedback and Testing

With Agile:

You can release MVPs (Minimum Viable Products) quickly.

Get real user feedback and fix usability or booking flow issues early.

This is crucial for user experience–sensitive systems like flight booking platforms.

3. Integration Complexity
A flight reservation site must integrate with:
Payment gateways Airline APIs (e.g., GDS like Sabre, Amadeus)

.CRM and support systems
Agile helps manage and test these complex, incremental integrations better than a rigid, all-or-nothing Waterfall approach.

4. Team Collaboration
Agile fosters:
Close communication between developers, testers, business analysts, and UX/UI designers.

Continuous collaboration—important for a product that spans multiple domains.

• When Waterfall Might Make Sense
If the system requirements are extremely well-defined and unlikely to change, such as for a government tender or internal airline reservation backend.

When regulatory or contractual constraints require upfront documentation.
The requirements for a flight reservation website can be divided into functional and non-functional categories. Here's a comprehensive breakdown.

5-Requirements

•Functional Requirements

• User Accounts & Profiles

Sign up / Login / Logout

•Profile management (name, contact info, preferences)

View booking history and saved trips

• Search & Browse Flights

•Search flights by:

1-Departure & destination cities

2-Travel dates

3-Number of passengers

4-Class (economy, business, first)

5-Filter and sort results (price, duration, airline, layovers)

• Booking & Reservation

.Select flight(s) and input passenger details

.Seat selection (if available).

.Baggage options and add-ons (e.g., meals, priority boarding).

.Price breakdown and summary before payment.

- Payment Processing
  - Integration with payment gateways (credit/debit cards, wallets, UPI, etc.)
  - Secure transaction and confirmation page
  - Invoice generation and email confirmation

- Notifications
  - Email/SMS notifications for:
  - Booking confirmation
  - Payment receipts
  - Flight schedule changes
  - Reminders before flight

- Booking Management
  - View, modify, or cancel reservations
  - Refund processing (as per airline policies)
  - Rebooking options in case of disruptions
- Third-Party Integrations
  - Global Distribution Systems (GDS) like Sabre, Amadeus, Galileo
  - Airline APIs for real-time data
  - Payment gateways (Stripe, PayPal, Rzorpay, etc.)

- Mobile Responsiveness / App Integration
  Optimized experience across desktop, tablet, and mobile
  Optionally, Android/iOS apps

- <u>Non-Functional Requirements</u>
  - Performance
  Fast response time, especially during search and checkout
  Scalability to handle high traffic during peak-travel periods

  - Security
  HTTPS, data encryption, and secure authentication
  - PCI-DSS compliance for handling payment data
  Protection from SQL injection, XSS, CSRF, etc.

- **Accessibility**
  - ADA or WCAG compliance for accessible design

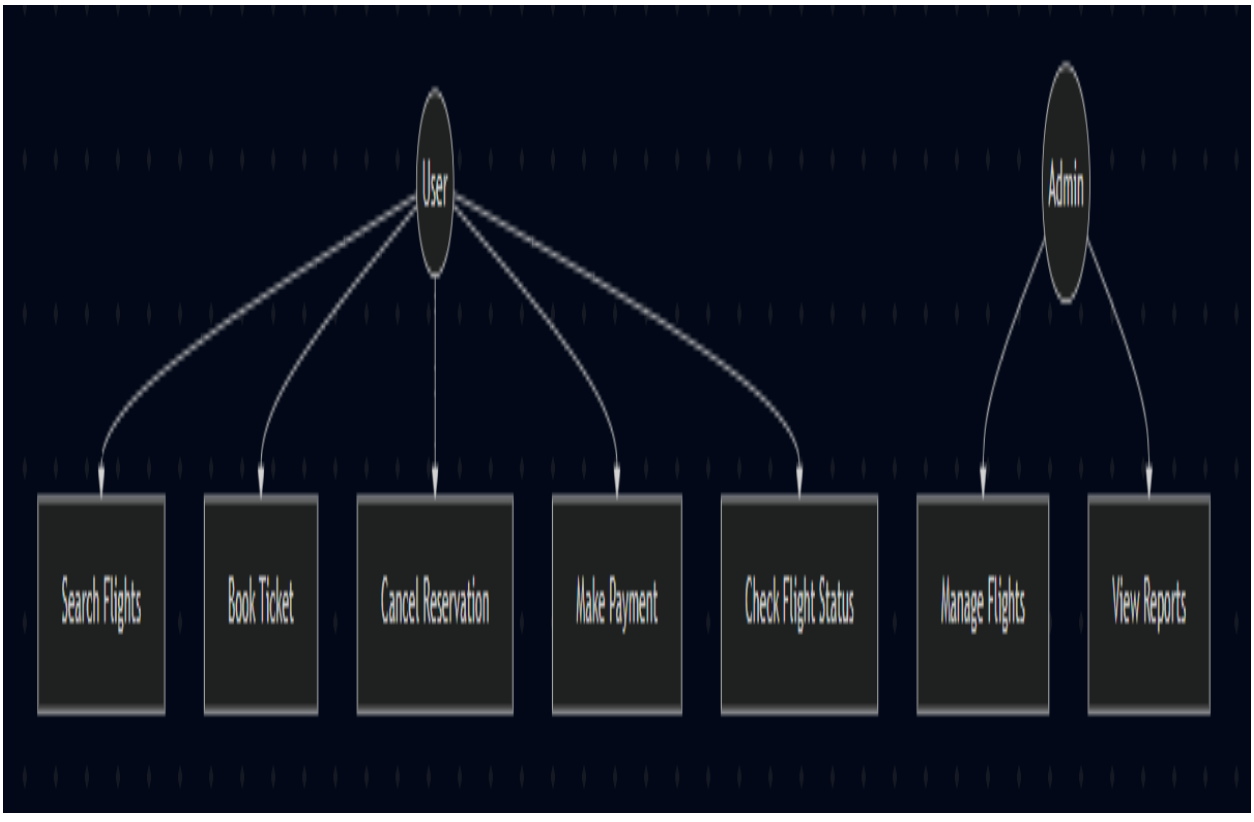
- **Reliability & Availability**
  - High uptime (preferably 99.9%+)
  - Failover and backup systems

- **Analytics & Reporting**
  - User behavior tracking
  - Booking trends and sales reports for admin

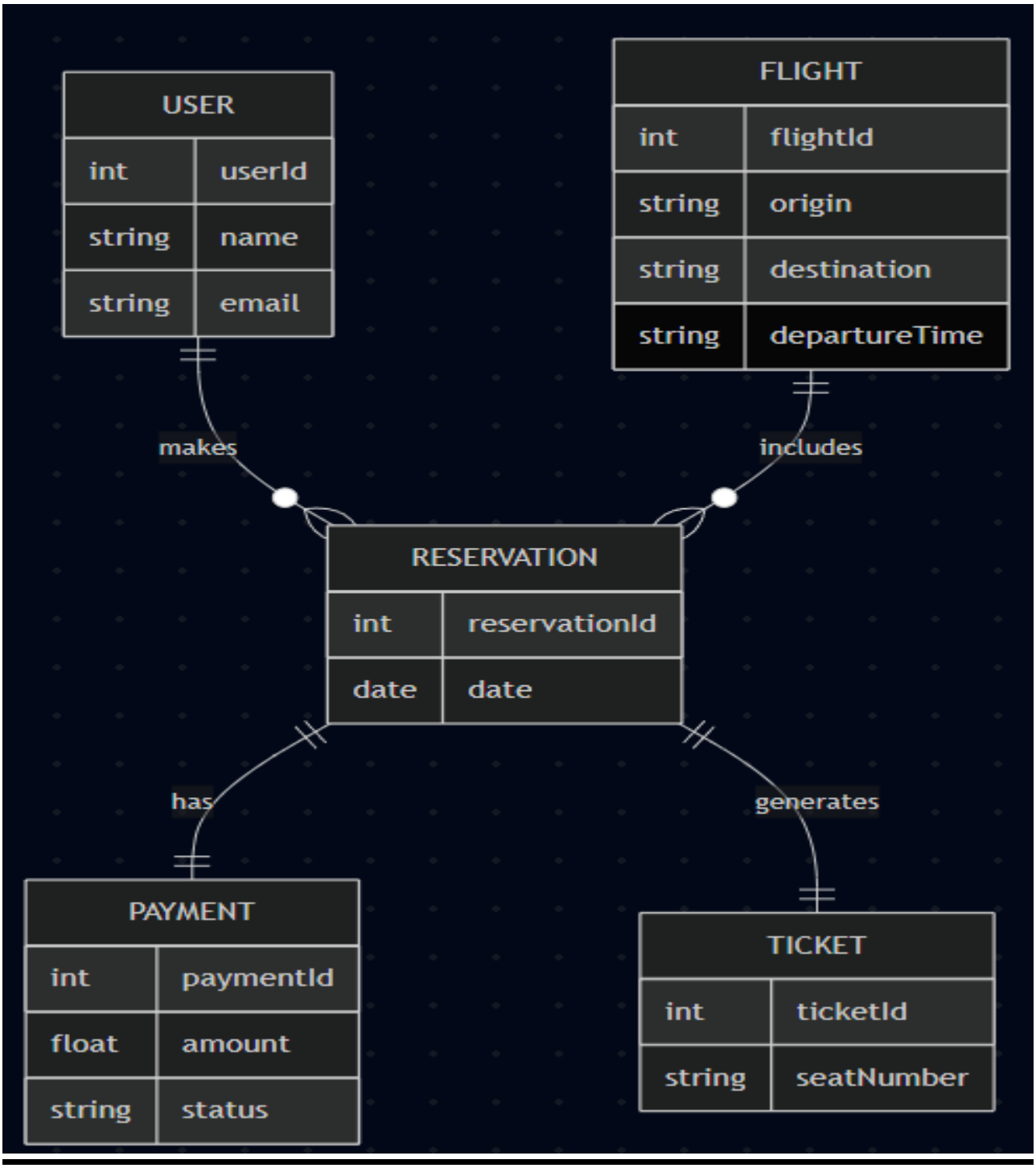
- **Maintainability**
  - Modular architecture for easier updates and bug fixes

5. Diagrams

Use case diagram



ER diagram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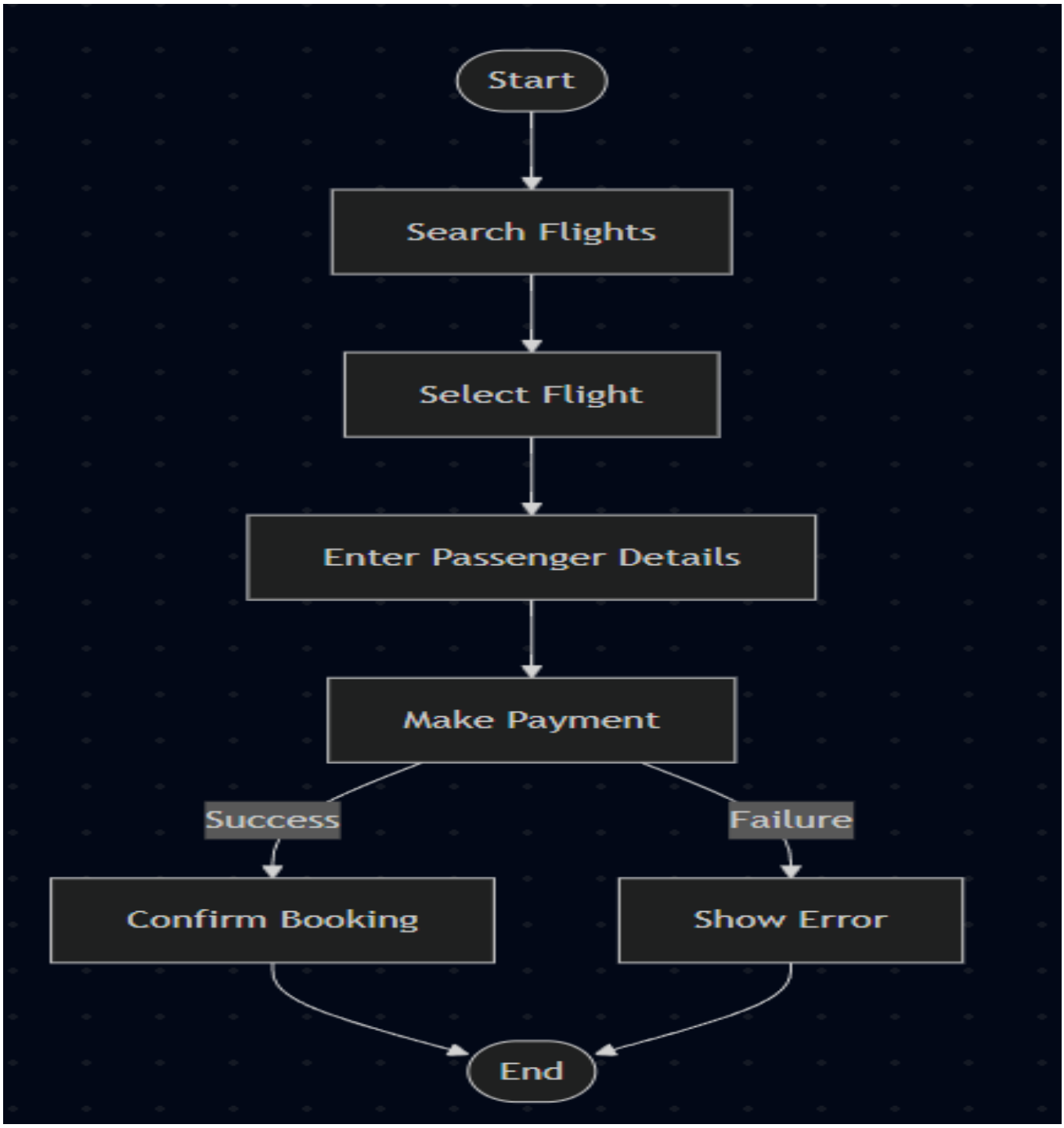
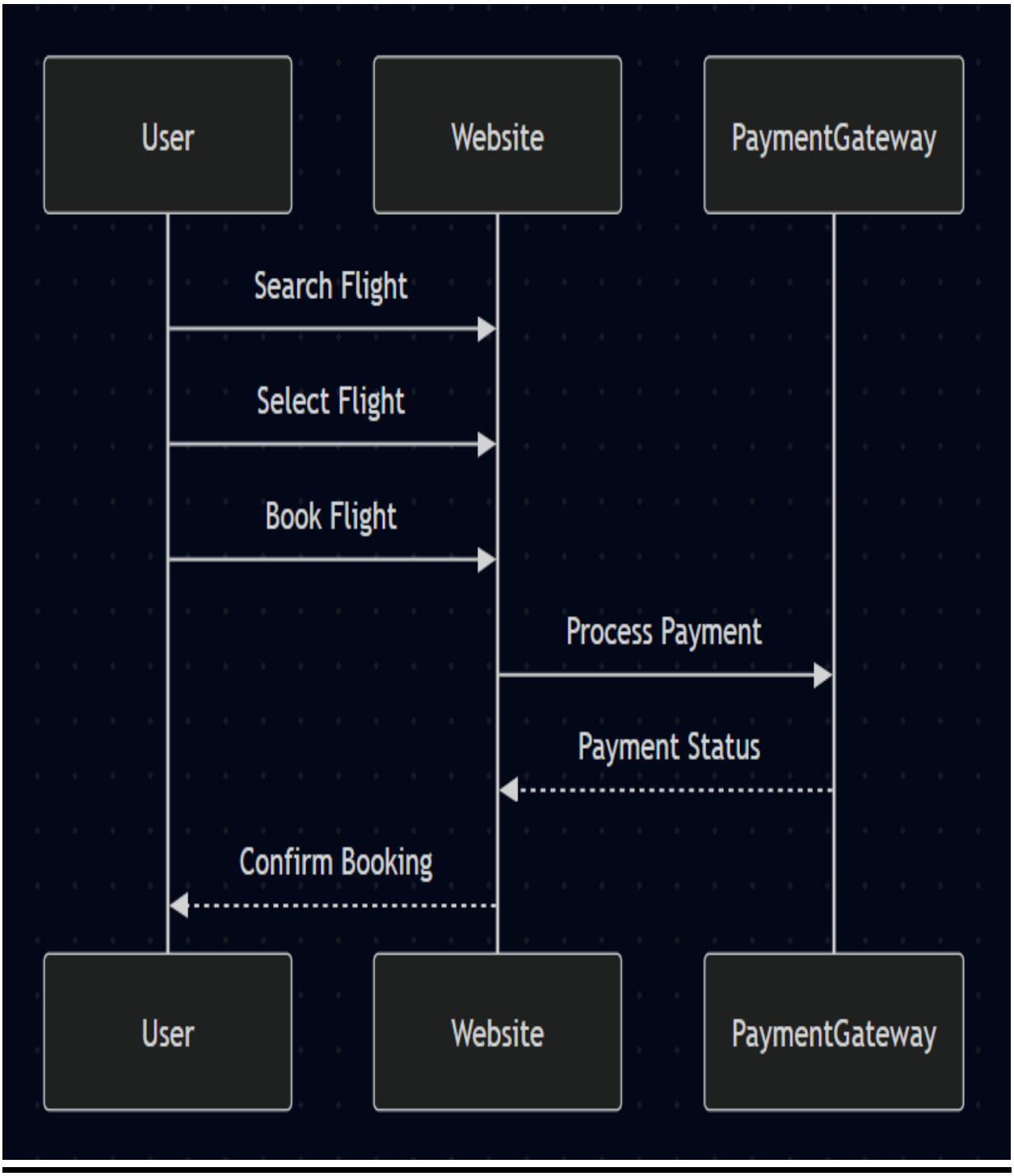
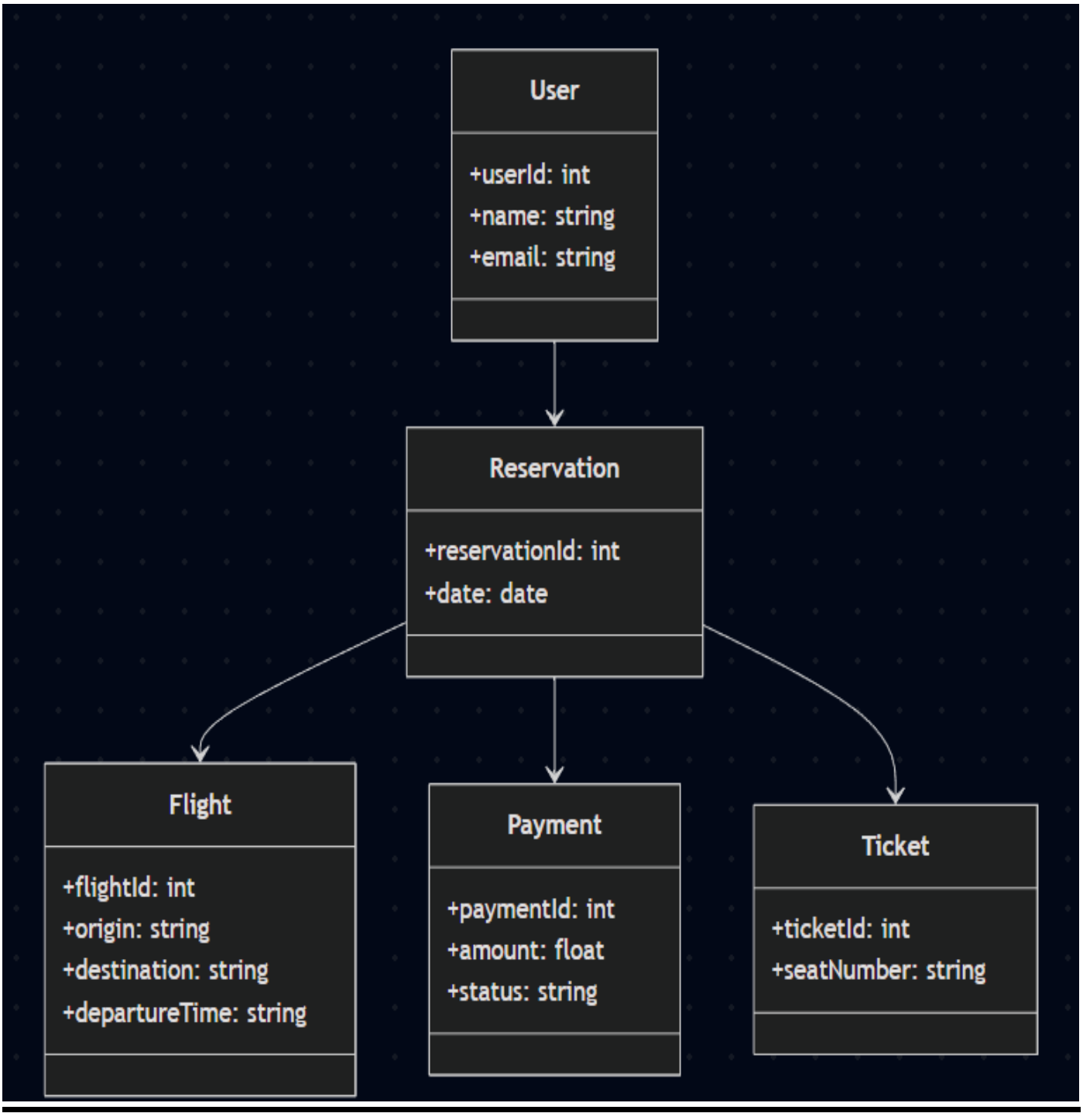
active diagram



sequence digram



class diagram



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