The test plan outlines the testing approach for the Flight Booking System, focusing on ensuring relaiblity, accuracy and user friendliness. The plane defines the scope, objectives and strategies, including the test type to guarantee smooth booking process, secure payment and robust system integration.

Scope

**In Scope**:

* User registration and login
* Searching for flights
* Flight booking and payment processing.
* Managing bookings
* Notifications
* UI testing for desktop and mobile platforms

**Out of scope**:

* Airline internal system is beyond the flight booking system api
* Handling flight rescheduling or cancellations intended by the airline

**Objectives:**

* Ensure core functionality works as expected.
* Deliver intuitive User Experience.
* Verify system reliability and security.

**Test Approach**:

* **Manual**: Focusing on explorartoy testing, uisability and scenarios that are hard to automate:
  + UI/UX testing
  + Edge case scenarios in booking flows
  + New or frequently chaged features
* **Automated**: Focusing on repetetive areas to save time and ensure consistency:
  + API testing for system integration
  + Regression testing after code changes
* **Mixed**: Combine both manual and automated testing approaches in the complex scenarios where automation setups are partially available.
  + When automated scripts validate back-end system, but manuall validation is needed for front-end.
* Testing focus:
  + **Functional focus**: ensure all core functionalities work as intended.
  + **User Experience focus:** validate the desing consistency and easy of navigation.
  + **System Reliablity Focus:** Ensure that the system handles expected and peake traffic without failures.
  + **Security Focus:** confirm the securty of the payment gateway, data encryption and authentication process.
  + **Cross-Platform Focus:** Ensure compatibility across different devices and web browsers.

**Roles and responsibilities**:

* **Test Lead**: Manages test planning, execution and coordination between QA and development team.
* **Test Automation Engineer**: Developes and executes automatic scripts for repetetive tasks.
* **QA Tester**: Executes manuall testing, conduts regression tests and reports bugs.

**Entry and Exit Criteria**:

* Entry Criteria
  + Application deployed to stabile test environment.
  + Unit testing by developers is completed.
  + All required test cases are created and reviewed.
  + Test data is prepared and validated.
* Exit Criteria
  + All critical and major issues are resolved.
  + Required functionality is verified by sufficient test coverage.
  + Application ready for deployment to production

**Test strategy:**

* **Defect life cycle**:
  + ToDO > InProgress > Ready for QA > QA In Progress > Ready to Merge > Merged > Done
* **Types of testing**:
  + Usability Testing: Ensuring ease of navigation and booking.
  + Compability testing: test on varios devices, OS and browsers.
  + Functional Testing: Validate flight search, booking and notifications.
  + Integration testing: Ensure smooth interaction between internal systems and external APIs.
  + Regression Testing: Confirm that new features don’t introduce new issues.
  + UI Testing: Test the user interface for responsiveness and accessibility.
* Defect Severity and Priority.
  + Prioritize defects based on the effect on the whole system. Sort them from the most important to the lease.

**Resources and Environment**:

* **Environemnt**:
  + Support Level 1:
    - OS: Windows, Android, IOS.
    - Browsers: Chrome, Safari
  + Support Level 2:
    - OS: MacOS, Linux
    - Browser: Firefox, Safari, Edge.
* **Testing Tools**:
  + Apache Jmeter
  + Hotajar
  + Sauce Labs
  + Postman

**Test Schedule**:

**Phase** **Duration**

Requrement Analysis 2 days

Test Planning 2 days

Unit Testing(Devs)

Deploy on Test DD/MM

Integration Testing 1 day

Functionali testing iteration 1 2 weeks

UI Testing 2 days

Security Testing 2 days

System Testing 2 days

Regression Testing 2 days

Release To Production DD/MM