**Test Plan for Conference Room Booking Application**

**1. Introduction**

**Purpose:**

The purpose of this test plan is to outline the testing approach for verifying the Conference Room Booking Application's functionality, performance, security, and compliance with defined requirements.

**2. Objectives**

**The primary objectives are to:**

* Validate all functional requirements, ensuring the system behaves as expected.
* Identify and fix any potential defects before deployment.
* Ensure the system meets performance, security, and compliance standards.

**3. Scope of Testing**

**The scope includes:**

* Functional testing of core features, such as room booking, rate calculation, and cancellation policies.
* Validation of user interfaces (both for users and admins).
* Non-functional testing, including performance, security, and compliance testing.

**4. Test Strategy**

**4.1 Types of Testing**

* **Functional Testing:** Verify that each feature works as intended, according to the functional requirements.
* **Integration Testing:** Test interactions between various components, such as UI, database, and server.
* **System Testing:** Ensure that the application as a whole performs according to the SRS.
* **Acceptance Testing:** Confirm that the application meets the needs of end-users and stakeholders.
* **Non-functional Testing:** Test for performance, security, and legal compliance.

**4.2 Testing Environments**

Testing will be conducted on various platforms (Laptop & smartphone) and browsers (Chrome, Firefox).

**5. Test Cases**

**5.1 Functional Test Cases**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Test Case** | **Description** | **Expected Result** | **Priority** |
| TC-1 | Room Selection | Verify that users can select rooms based on size. | User successfully selects room size (small, medium, large, executive). | High |
| TC-2 | Date and Time Sele | Verify date and time selection for bookings. | User selects valid booking dates and times. | High |
| TC-3 | Room Availability Check | Verify that unavailable rooms cannot be booked. | System displays an error if a room is unavailable. | High |
| TC-4 | Rate Calculation (Hourly) | Verify hourly rate calculation for bookings under 8 hours. | Charges align with hourly rate for selected room size. | High |
| TC-5 | Rate Calculation (Daily) | Verify daily rate calculation for bookings exceeding 8 hours. | | Charges align with daily rate for selected room size. | High |
| TC-6 | Rate Calculation (Weekly) | Verify weekly rate calculation for bookings exceeding 3 days. | Charges align with weekly rate for selected room size. | High |
| TC-7 | Overtime Charges | Verify overtime charges at 1.5x hourly rate. | Overtime charges are applied at correct rate. | Medium |
| TC-8 | | Cancellation Policy | Verify 50% cancellation fee for cancellations under 24 hours. | 50% fee is applied for last-minute cancellations. | Medium |
| TC-9 | | Real-Time Availability | Validate room availability updates in real-time. | System updates room availability instantly. | High |

**5.2 Data Validation Test Cases**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Test Case** | **Description** | **Expected Result** | **Priority** |
| TC-10 | Past Date Selection | Validate those past dates cannot be selected for booking. | System prevents past date selection. | Medium |
| TC-11 | Time Conflict Check | Ensure time conflicts are avoided in bookings. | System prevents double-booking in the same time slot. | High |
| TC-12 | Billing Information Security | Verify encryption of billing details. | Billing data is encrypted and secure. | High |

**5.3 Non-Functional Test Cases**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Test Case** | **Description** | **Expected Result** | **Priority** |
| TC-13 | Performance (Response Time) | Verify that booking confirmation takes less than 5 seconds | System confirms booking within 5 seconds. | High |
| TC-14 | Uptime Availability | Verify system uptime of 99.9% annually | System maintains high uptime. | High |
| TC-15 | Security (Authentication) | Verify user authentication for bookings. | | Only authenticated users can make bookings. | High |
| TC-16 | Compliance (GDPR, CCPA) | Validate compliance with data protection regulations. | System complies with GDPR, CCPA, and other regulations. | High |

**6. Test Execution**

**6.1 Testing Phases**

**1. Unit Testing:** Conducted by developers on individual components.

**2. Integration Testing**: Test interactions between integrated modules.

**3. System Testing:** Execute test cases on the complete system.

**4. User Acceptance Testing (UAT):** Conducted by stakeholders to validate the system against real-world scenarios.

**6.2 Test Schedule**

* **Unit and integration testing: Weeks 1-2**
* **System testing: Weeks 3-4**
* **UAT: Week 5**

**6.3 Test Data**

Test data will include a variety of booking scenarios, room sizes, and user profiles to simulate real-world usage.

**7. Entry and Exit Criteria**

**7.1 Entry Criteria**

* All features and modules are implemented.
* The environment is set up and stable.
* Test data is prepared.

**7.2 Exit Criteria**

* All high and medium-priority test cases have passed.
* No critical defects remain.
* UAT has been completed, and stakeholders have approved the system.

**8. Test Deliverables**

* Test Cases document
* Test Execution Report
* Bug/Defect Report
* Final Test Summary Report

**9. Roles and Responsibilities**

* **Test Manager:** Oversees the testing process and team.
* **Test Engineers:** Execute test cases and report defects.
* **Developers:** Resolve identified issues.
* **Project Manager**: Coordinates with stakeholders and ensures timelines are met.

**10. Risk Management**

* **Risk of missed deadlines:** Mitigated by detailed scheduling and regular progress checks.
* **Risk of undetected defects:** Mitigated through thorough testing and adherence to entry/exit criteria.

**11. Approval**

The test plan will be reviewed and approved by the Test Manager, Project Manager, and key stakeholders before execution.

**This test plan aims to cover all critical functional, data validation, and non-functional requirements as per the SRS to ensure a reliable and user-friendly conference room booking application.**