RoomServe Hotel Management System Test Plan Document

Compiled by

Tech Turtles

Submitted on

15 October 2024

Team Members			
Student #	**Surname**	**Name**	**Role**
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221837558	KHUMALO	NOMKHOSI THABILE	Test Leader
223170925	SWAARTBOOI	NAANDA	Tester
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Executive Summary

A hotel has developed a system, "RoomServe", to manage room bookings, check-ins, and billing. It must handle multiple users at once, ensuring that no overbookings occur and that billing is accurate.

Table of Contents

1. INTRODUCTION

1) PURPOSE OF THE REPORT

This report outlines the testing and evaluation of Room Serve, a hotel management system designed to efficiently manage bookings, check-ins, and billing. The primary objectives are:

2) TEST OBJECTIVES

1. Verify system functionality and performance.
2. Ensure security and data integrity.
3. Validate user interface and user experience.
4. Identity and report defects.

3) SCOPE OF THE TESTING ACTIVITIES

- Room management
- Guest information
- Payment Processing

2. TEST PLAN

Test plan identifier	**HMS_TP001**
Introduction	The Room Booking and Check-In Test Plan aims to ensure seamless and efficient room booking and check-in processes for guests, while validating accuracy of guest information, correct room assignment, and secure payment processing. This comprehensive test plan covers various scenarios, including successful bookings, cancellations, modifications, and payment processing errors. The hotel industry relies heavily on efficient room booking and check-in processes to provide exceptional guest experiences. With the increasing demand for online bookings and mobile check-ins, hotels must ensure their systems are reliable, secure, and user-friendly.
Test Items	• Reservation management • Guest information systems • Booking engine • Guest check in /check out • Check in/check out Reporting
Features to be tested	• Search for available rooms by date, room type and rate • Enter guest information (name, email, phone number • Present ID and confirmation number • Receive room key and welcome package
Features not to be tested	**Room Booking:** 1. Room availability display (assuming accurate data) 2. Room type and rate information 3. Booking success/failure messages **Check-in:** 1. Guest information storage and retrieval 2. Automatic room assignment (if implemented) 3. Check-in/check-out date and time validation
Approach	In this test plan we chose to use exploratory testing approach because it's flexible and can be tailored to the specific needs of the project and it is also a good way to find bugs that will be difficult to find with other testing methods. We will be using black box testing; on black box techniques we chose Equivalence Partitioning testing and State Transition Testing. The reason being Equivalence partitioning testing will help us divide input data into partitions based on requirements and reduce number of test cases, as for State Transition testing it is because it verifies the system behaviour across different states.

	Functional testing approach to avoid post-launch issues. It will touch on the important traits that are crucial for customer satisfaction and retention. This approach will be used to validate that all the features work according to the assumed requirements. It will use both manual and automated testing techniques. It will test on the following levels of testing: • System level: Test all parts of the site to see if they work all together. • Acceptance testing: end-users will test the system and give feedback.
Items pass/fail criteria	If the test passes, room booking is successful with valid input data Check in process completes without errors Room assignment matches booking details But if it fails, check in process encounters errors Payment processing fails and booking confirmation or receipt is not generated
Suspension criteria and resumption requirements	• System crashes or freezes frequently • Data corruption or loss • Security vulnerabilities for example (exposed passwords) • Critical functionality not working for example (booking payment) • Unrecoverable errors
Test deliverables	• Test plan • The detailed reports, including the list of all tests that were performed and results for each • Test case documents • Bug Reports • List of any features that were not tested or require further testing • Summary of the overall test results
Testing tasks	• Functional testing: Checks the System features work as expected • Usability testing: Evaluates the website's user experience • Compatibility Testing: Checks that the website works with different devices and operating systems. • Performance Testing: Checks the systems performance under heavy load, speed and responsiveness. • Accessibility testing: Ensures that the system is accessible to people with special needs. • Localization: Ensures that the system is usable in different languages and regions.
Environmental needs	**Network setups** • Local area network (LAN) Testing • Wide area network (WAN) Testing • Wireless and WI-FI network testing **Hardware:** • Laptops, Mobile and Computers

	Software: o IOS and Android devices **Test tools:** • LoadRunner (performance testing) • Browse Stack • Selenium (Automation testing for functional aspects of the system) • Nessus (for security) • John the ripper (for password cracking) • Query Surge (for database
Test Procedure ID	TP-RM-001
Associated Test cases	• Check booking Functionality • Check-in functionality • Check the accuracy of billing and correct payment • Test security when log into an account • Stability and reliability of testing
Special Requirements	• Room type and rate Management • Availability Checking • Guest ID verification • Check-in/Check-out time management • Data encryption
Test Execution flow	BOOKING PROCESS • Verify room availability for selected dates • Search for available rooms • Select room type and dates • Enter guest information • Verify booking details (room type, dates, guest information) CHECK-IN PROCESS • Verify booking existence • Verify guest arrival date • Enter guest name • Verify guest information • Assign room key • Complete check-in

<table>
<tr><td>Responsibilities</td><td>Mashau Takalani (Tester) - Test data collection and generating test scenarios
- case documentation, test execution and tracking the banking
Khumalo Nomkhosi (Test Lead) - Test planning, guidance and test scenarios
Kelebogile Makhudu (Senior Tester)- Test data collection and generating test scenarios
Ngcukana Iva (Tester) - Tester websites
Maggabi Liyabona (Tester) - Test case documentation, test execution and defect reporting</td></tr>
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• Data loss or corruption: During testing, there is a possibility of inaccurate data migration and insufficient data back-up, which can result in adverse consequences.
• Security Risks: Testing a system can potentially lead to security breaches, where unauthorized access to sensitive information can harm the organization (Virus attacks).</td></tr>
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	• Performance Risks: testing can also lead to performance issues, causing the system to become slow or unresponsive, and even cause inefficient check-in/check-out processes, which can negatively impact their user experience. • Functional Risk: Incorrect billing and over booking or under booking. **Contingency plan:** • Have a backup of all data and keep it secure. • Do a regular system updates and maintenance. • Have a well -established incident management plan in place to mitigate security breaches. • Keep record of all system configurations, so it can be easily restored if there is an issue. **Preventions:** • Ensure the system is fully secure before conducting any tests. • Conduct data quality checks. • Verify tax calculations and conduct secure billing testing. • Use automated testing tools to reduce human errors. • Conduct regular system updates. • Use secure authentication protocols. **Mitigation strategies** • Monitor system activities and performance during testing to minimize any risks. • Have a designated security team that can immediately respond to any security breaches. • Use performance testing tools to identify and fix performance issues before they affect the end user. • Implement Load balancing for system crashes and downtime. • Use backup power systems in case of power outages.
Approvals	1. Miss LC Magqabi Project Manager 2. Miss T Mashau Business sponsor 3. Miss K Makhudu QA Manager 4. Miss N Khumalo Development Manager 5. Miss N Swaartbooi Test Manager 6. Miss I Ngcukana Customer

Test plan identifier	**HMS_TP_002**
Introduction	Test Plan will test the.
Test items	1. Booking Engine 2. Search Availability 3. Room Selection

	4. Guest Information Entry 5. Payment Gateway Integration 6. Confirmation Page 7. User Authentication (Login/Logout) 8. Navigation Menu
Features to tested	○ Booking Engine Features • Search Availability: Test searching for available rooms during peak periods. • Room Selection: Verify room selection functionality under load. • Booking Form: Test booking form submission with multiple concurrent users. • Payment Processing: Validate payment processing with various payment methods. • Confirmation Page: Ensure confirmation page loads quickly and accurately. Payment Processing: Validate payment processing with various payment methods. • Confirmation Page: Ensure confirmation page loads quickly and accurately.
Features not to be testes	This test plan will not test the portability of the system because it can be used in any type of device. 1. Non-essential UI elements (e.g. font styles, colors) 2. Static content (e.g. about us, contact pages) 3. Infrequently used features (e.g. cancellations, refunds) 4. Administrative tasks (e.g. user management, reporting) 5. Third-party integrations not critical to booking process 6. Features with minimal user interaction (e.g. terms and conditions) 7. Offline or background processes (e.g. batch processing) 8. Features with low traffic volume
Approach	In this test plan we chose to use exploratory testing approach because it's flexible and can be tailored to the specific needs of the project and it is also a good way to find bugs that will be difficult to find with other testing methods.

	We will be using black box testing; on black box techniques we chose Equivalence Partitioning testing and State Transition Testing. Reason being Equivalence partitioning testing will help us divide input data into partitions based on requirements and reduce number of test cases, as for State Transition testing it is because it verifies the system behaviour across different states. Functional testing approach to avoid post-launch issues. It will touch on the important traits that are crucial for customer satisfaction and retention. This approach will be used to validate that all the features work according to the assumed requirements. It will use both manual and automated testing techniques. It will test on the following levels of testing: • System level: Test all parts of the site to see if they work all together. • Acceptance testing: end-users will test the system and give feedback.
Item Pass/Fail Criteria	<u>Pass Criteria:</u> 1. Average response time < 3 seconds. 2. Error rate < 1%. 3. System uptime > 99.9%. 4. CPU utilization < 80%. 5. Memory usage < 70%. <u>Fail Criteria:</u> 1. Average response time > 5 seconds. 2. Error rate > 5%. 3. System uptime < 99%. 4. CPU utilization > 90%.

	5. Memory usage > 90%
Suspension Criteria and resumption requirements	1. Suspension Criteria: -Critical defects -Major defects -System crashes -Data corruption 2. Resumption Requirements: -Critical defects fixed -Major defects mitigated -System stability -Data integrity
Test Deliverables	<u>Test Specifications</u> 1.Test Plan Document: - Test objectives - Scope - Approach - Test environment - Timeline 2. Test Case Document: - Test case ID - Description - Pre-conditions - Steps - Expected results 3.Test Data Document: - Test data requirements - Data sources - Data validation <u>Test Logs:</u> 1.Test Execution Log: - Test case ID - Test execution date/time - Test result (pass/fail) - Error messages

	2.System Performance Log: - CPU utilization - Memory usage - Response time - Throughput 3.Error Log: - Error message - Error code - Frequency
Testing tasks	• Functional testing: Checks the System features work as expected. • Usability testing: Evaluates the website's user experience. • Compatibility Testing: Checks that the website works with different devices and operating systems. • Performance Testing: Checks the systems performance under heavy load, speed and responsiveness. • Accessibility testing: Ensures that the system is accessible to people with special needs. • Localization: Ensures that the system is usable in different languages and regions.
Environmental needs	• Network setups: • Local area network (LAN) Testing • Wide area network (WAN) Testing • Wireless and WI-FI network testing ▪ Hardware: • Laptops, Mobile and Computers ▪ Software: • (IOS and Android devices) ▪ Test tools: • LoadRunner (performance testing) • Browse Stack • Selenium (Automation testing for functional aspects of the system)

	• Nessus (for security) • John the ripper (for password cracking) • Query Surge (for database)
Test Procedure ID	TP-RM-002
Associated Test Cases	• Check booking Functionality • Check-in functionality • Check the accuracy of billing and correct payment • Test security when log into an account • Stability and reliability of testing
Test Execution flow	• Run baseline test with 10-20 users • Monitor system performance and response times • Verify stability • Gradually increase load from 20 to 100 users and repeat the same processes by increasing numbers to see how the system will perform
Special Requirements	Testing Tools • Apache JMeter • LoadRunner • NeoLoad • Gatling Load Testing configuration • Test Scripts • User data • Load profiles Setup Requirements

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Test environment setup
-Production like environment
- HMS software installation
- Load Testing tool installation
Data Setup

Booking Scenarios (single, multiple, group)
Payment processing scenarios
User data (valid, invalid)

Network Setup

Internet connection
Firewall configuration

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<tr><td>KELEBOGILE MAKHUDU</td><td>SENIOR TESTER</td><td>Test data collection and generating scenarios</td></tr>
<tr><td>NGCUKANA IVA</td><td>TESTER</td><td>Test case documentation, test execution</td></tr>
<tr><td>MAGQABI LIYABONA</td><td>TESTER</td><td>Test case documentation, test execution and defect reporting</td></tr>
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Staffing and training needs

STAFF NEEDED	RESPONSIBILITIES	TRAINING NEEDED
• Test Analysts	• They will be responsible of developing the test cases and execution tests	• Training on how to create and execute test cases
• Testers •	• Will be responsible for running tests and reposting any issues or bugs	• Training them on how to use specific tools and techniques that will be used for testing • Training on how to collaborate with developers to fix defect
• Developers	• Responsible for fixing any bugs that are found during testing	• Training on how to fix the bugs that are found during testing

Schedule

Activities	Starting date	Ending date
1. Test planning	1 day	2 days
2. Test cases	3 days	7 days
3. Test execution	2 days	2 days
4. Test execution report	1 day	1 day
5. Bug report	3 days	7 day
6. Test analysis	2 day	3 days
7. Performance test report	1 day	1 day

Risk and contingencies	Risks: 1. System crashes or failures. 2. Security vulnerabilities. 3. Performance degradation. 4. Network connectivity issues. Contingencies: • System crashes or failures: - Develop backup and recovery plans. - Identify critical system components. • Security vulnerabilities: - Conduct security audits. - Implement security patches. - Monitor system activity. • Performance degradation: - Optimize system configuration. - Implement caching mechanisms. - Monitor performance metrics. • Network connectivity issues:

	- Ensure redundant network connections. - Monitor network performance. - Implement failover mechanisms. Mitigation Strategies: 1. Risk assessment and prioritization. 2. Regular system maintenance. 3. Continuous monitoring. 4. Testing and validation. 5. Collaboration with stakeholders. 6. Development of backup and recovery plans. 7. Implementation of security measures. 8. Performance optimization. 9. Network redundancy. 10. Contingency planning. Benefits: 1. Reduced downtime

	2. Improved system reliability 3. Enhanced performance 4. Increased customer satisfaction 5. Reduced revenue loss
Approvals	Initials and Surname Title 1. Miss LC Magqabi Project Manager 2. Miss T Mashau Business sponsor 3. Miss K Makhudu QA Manager 4. Miss N Khumalo Development Manager 5. Miss N Swaartbooi Test Manager 6. Miss I Ngcukana Customer

Test Plan Content	**Description**
Test plan identifier	RoomServe_003
Introduction	This Test plan aims to verify accurate billing calculations and correct payments in a hotel management system. The system's billing is responsible for generating invoices, processing payments, and

	managing revenue. check if the user can successfully complete the booking, verify that different methods are supported, and the billing is correct and accurate.
Test items	• Credit card processing (authorization, capture, refund) • Payment method validation (card number, expiration date) • Room rate calculations • Online method gateaway
Features to tested	• Payment processing • Automatic billing for long-stay guests • Credit card processing • Payment methods
Features not to be testes	• User interface design • Network connectivity and infrastructure • Inventory management (non-room related)
Approach	use exploratory testing approach because it's flexible and can be tailored to the specific needs of the project and it is also a good way to find bugs that will be difficult to find with other testing methods. We will be using black box testing; on black box techniques we chose Equivalence Partitioning testing and State Transition Testing. Reason being Equivalence partitioning testing will help us divide input data into partitions based on requirements and reduce number of test cases, as for State Transition testing it is because it verifies the system behaviour across different states. Functional testing approach to avoid post-launch issues. It will touch on the important traits that are crucial for customer satisfaction and retention. This approach will be used to validate that all the features work according to the assumed requirements. It will use both manual and automated testing techniques. It will test on the following levels of testing: • System level: Test all parts of the site to see if they work all together. • Acceptance testing: end-users will test the system and give feedback.
Item pass/fail criteria	• Total Billing Amount Pass: Total billing amount calculated correctly, including room rate, tax, and discount. Fail: Total billing amount calculation error or discrepancy.

	• Payment Method Validation Pass: Payment method validated correctly (e.g credit card, debit card, cash). Fail: Payment method validation error or failure
	• The actual output and the expected output for valid inputs are compared, if actual output is equal to the expected output, then the test is passed. • The actual and expected out for invalid inputs are compared; if the actual output is equal to the expected output, then the test has passed. • Then a conclusion will be made as for the proper functioning of the website under test.
Suspension Criteria and resumption requirements	Testing will be suspended if: • All the equivalence partitions have been thoroughly tested. • Repeated testing of the same partitions doesn't reveal new defects. • If the system demonstrates consistent behaviour and no critical defects are found. Testing will resume after: • Requirements or features are added. • Defects are fixed and re-testing is necessary. • The system undergoes updates or upgrades.
Testing tasks	• Functional testing: Checks the System features work as expected • Usability testing: Evaluates the website's user experience • Compatibility Testing: Checks that the website works with different devices and operating systems. • Performance Testing: Checks the systems performance under heavy load, speed and responsiveness. • Accessibility testing: Ensures that the system is accessible to people with special needs. • Localization: Ensures that the system is usable in different languages and regions.
Environmental needs	Network setups: • Local area network (LAN) Testing • Wide area network (WAN) Testing • Wireless and WI-FI network testing

	▪ Hardware: • Laptops, Mobile and Computers ▪ Software: • (IOS and Android devices) ▪ Test tools: • LoadRunner (performance testing) • Browse Stack • Selenium (Automation testing for functional aspects of the system) • Nessus (for security) • John the ripper (for password cracking) • Query Surge (for database)
Test Procedure ID	TP-RM-003
Associated Test Cases	• Check booking Functionality • Check-in functionality • Check the accuracy of billing and correct payment • Test security when log into an account • Stability and reliability of testing
Test Execution flow	Billing Calculation Testing • Test single booking billing calculation • Test multiple booking billing calculation • Test cancellation billing calculation Payment processing testing • Test credit card payment • Test debit card payment • Test PayPal payment • Test refund processing • Test partial payment processing

	Billing and payment integration testing • Test billing and payment integration. • Test billing and payment error handling.
Special Requirements	Testing Tools • Test automation tools (e.g., Selenium, Appium) • API testing tools (e.g., Postman, SoapUI) • Payment gateway testing tools (e.g., PayPal Sandbox, Stripe Testing) • Load testing tools (e.g., Apache JMeter, Gatling) • Security testing tools (e.g., OWASP ZAP, Burp Suite) Configuration Setup • Hotel Management System (HMS) configuration: - Room types and rates - Payment gateways - Tax calculation settings - Discount and promotion settings • Payment gateway configuration: - API keys - Payment processing rules - Error handling settings • Tax calculation configuration:

	- Tax rates - Tax exemptions - Tax reporting settings <u>Setup Requirements</u> • Test environment setup: - Production-like environment - HMS software installation - Payment gateway integration • Data setup: - Booking scenarios (single, multiple, group) - Payment processing scenarios - Tax calculation scenarios - Discount and promotion scenarios • Network setup: - Internet connection - Firewall configuration
Resposibilities	**NAMES** **ROLES** **RESPONSIBILITIES** Mashau Takalani Tester Test data collection and generating test scenarios Khumalo Thabile Test Lead Test planning, guidance and test scenarios

	Kelebogile Makhudu	Senior Tester	Test data collection and generating test scenarios
	Ngcukana Iva	Tester	Tester case documentation, test execution and tracking the banking websites
	Magqabi Liyabona	Tester	Test case documentation, test execution and defect reporting

Staffing and training needs	**STAFF NEEDED**	**RESPONSIBILITIES**	**TRAINING NEEDED**
	• Test Analysts	• They will be responsible of developing the test cases and execution tests	• Training on how to create and execute test cases
	• Testers	• Will be responsible for running tests and reposting any issues or bugs	• Training them on how to use specific tools and techniques that will be used for testing • Training on how to collaborate with developers to fix defects
	• Developers	• Responsible for fixing any bugs that are found during testing	• Training on how to fix the bugs that are found during testing

Schedule	**Activities**	**Starting date**	**Ending date**
	1. Test planning	1 day	2 days
	2. Test cases	3 days	week
	3. Test execution	2 days	2 days
	4. Test execution report	1 day	1 day
	5. Bug report	3 days	week
	6. Test analysis	2 days	3 days
	7. Performance test report	1 day	1 day

Risk and contingencies	**<u>Risk:</u>** • Data loss or corruption: During testing, there is a possibility of inaccurate data migration and insufficient data back-up, which can result in adverse consequences.

	• Security Risks: Testing a system can potentially lead to security breaches, where unauthorized access to sensitive information can harm the organization (Virus attacks). • Functional Risk: Incorrect billing and over booking or under booking. **Contingency plan:** • Have a backup of all data and keep it secure. • Do a regular system updates and maintenance. • Have a well -established incident management plan in place to mitigate security breaches. • Keep record of all system configurations, so it can be easily restored if there is an issue. **Preventions:** • Ensure the system is fully secure before conducting any tests. • Conduct data quality checks. • Verify tax calculations and conduct secure billing testing. • Use automated testing tools to reduce human errors. • Conduct regular system updates. • Use secure authentication protocols. **Mitigation strategies** • Monitor system activities and performance during testing to minimize any risks. • Have a designated security team that can immediately respond to any security breaches. • Use performance testing tools to identify and fix performance issues before they affect the end user. • Implement Load balancing for system crashes and downtime. • Use backup power systems in case of power outages.
Approvals	**Initials and Surname** — **Title** 1. Miss LC Magqabi — Project Manager 2. Miss T Mashau — Business sponsor 3. Miss K Makhudu — QA Manager 4. Miss N Khumalo — Development Manager 5. Miss N Swaartbooi — Test Manager 6. Miss I Ngcukana — Customer

Test plan identifier	**HMS_TP_004**

Introduction	The test objectives is to verify integration with third-party services, to ensure seamless data exchange between HMS and third party services, to validate accurate processing of transaction and bookings, as well as to identify and to report defects or integration issues.
Test items	**Payment Gateways**: 1. Payment processing - successful payment processing - failed payment processing - payment cancellation/refund. 2. Payment methods - Credit card - Debit card - Online banking - Wallet payment 3. Transaction status updates - Payment pending - Payment successful - Payment failed **Booking websites:** 1. Booking creation - Successful booking creation - Failed booking creation (e.g., room unavailable) - Booking cancellation 2. Booking data synchronization: - Room availability updates - Rate and inventory updates - Guest information updates 3. Booking status updates - Booked - Checked-in - Checked-out - Cancelled
Features to be tested	**1. Payment gateways** - Payment processing - Payment method support

	- Payment status updates - Payment cancellation **2. Booking websites** - Booking creation - Booking data synchronization (e.g., room availability and rates) - Booking status updates
Features not to be tested	**Payment Gateways** - Payment gateways internal functionality - Payment gateways administrative interface - Payment gateways reporting and analytics. **Booking websites** - Booking websites user interface and user experience - Booking websites search and filtering functionality. - Booking websites loyalty programs (if not integrated with HMS)
Approach	black box testing: on black box techniques we chose Equivalence Partitioning testing and State Transition Testing. Reason being Equivalence partitioning testing will help us divide input data into partitions based on requirements and reduce number of test cases, as for State Transition testing it is because it verifies the system behaviour across different states.
Items pass/fail criteria	1. Payment gateways - Pass: successful payment processing with valid payment information - Fail: payment processing fails with valid payment information 2. Booking websites - Pass: bookings are successfully created and reflected in HMS - Fail: bookings fail to create or not reflected in HMS
Suspension criteria and resumption requirements	1. Suspension Criteria: - Critical defects - Major defects - System crashes - Data corruption 2. Resumption Requirements - Critical defects fixed - Major defects mitigated - System stability - Data integrity

Test deliverables	1. Test plan document 2. Test cases 3. Test Reports 4. Defect reports
Testing tasks	- Performance testing: 1. System response time 2. Data processing speed 3. Concurrent user support 4. Data storage capacity
Environmental needs	• Local area network (LAN) Testing • Wide area network (WAN) Testing • Wireless and WI-FI network testing ▪ Hardware: • Laptops, Mobile and Computers ▪ Software: • (IOS and Android devices)
Test Procedure ID	TP-RM-004
Associated Test Cases	• Check booking Functionality • Check-in functionality • Check the accuracy of billing and correct payment • Test security when log into an account • Stability and reliability of testing

Responsibilities	**NAMES**	**ROLES**	**RESPONSIBILITIES**
	Mashau Takalani	Tester	Test data collection and generating test scenarios
	Khumalo Thabile	Test Lead	Test planning, guidance and test scenarios
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Risks and contingencies	• Data loss or corruption: During testing, there is a possibility of inaccurate data migration and insufficient data back-up, which can result in adverse consequences. • Security Risks: Testing a system can potentially lead to security breaches, where unauthorized access to sensitive information can harm the organization (Virus attacks). • Performance Risks: testing can also lead to performance issues, causing the system to become slow or unresponsive, and even cause inefficient check-in/check-out processes, which can negatively impact their user experience. • Functional Risk: Incorrect billing and over booking or under booking. <u>Contingency plan</u> • Have a backup of all data and keep it secure. • Do a regular system updates and maintenance. • Have a well -established incident management plan in place to mitigate security breaches. • Keep record of all system configurations, so it can be easily restored if there is an issue. <u>Prevention's</u> • Ensure the system is fully secure before conducting any tests. • Conduct data quality checks. • Verify tax calculations and conduct secure billing testing. • Use automated testing tools to reduce human errors. • Conduct regular system updates. • Use secure authentication protocols.

	Mitigation strategies • Monitor system activities and performance during testing to minimize any risks. • Have a designated security team that can immediately respond to any security breaches. • Use performance testing tools to identify and fix performance issues before they affect the end user. • Implement Load balancing for system crashes and downtime. • Use backup power systems in case of power outages.
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3. TEST CASE SPECIFICATION

Test Case ID: TC_BOOKING_01 **Test Case Description:** Verify booking functionality

Created By: KELEBOGILE MAKHUDU **Reviewed By:** LIYABONA **Version:** 01

Tester's Name: KELEBOGILE MAKHUDU **Date Tested:** 22 September 2023

Prerequisites:

1. Access to Chrome Browser, Safari and Microsoft edge browser
2. https://www.roomserve.com

Test data:

- Booking date
- Room type

Test Scenario: Check booking process functionality

Step#	Step Details	Expected Results	Actual Results	Outcome
1.	Navigate to https://www.roomserve.com	Site should open	As expected,	Pass
2.	Enter valid credentials, then click login button	A pop-up screen will appear confirming “Sign in successful”	As expected,	Pass
3.	Click the bookings button to view the services on it	Display services with their pictures,names,description,prices,and make a booking button	As expected,	Pass
4	Click on the “make a booking” button	A user is expected to enter the details of the booking they want together with personal details and card number	As expected,	Pass
5.	After filling in the required details then click the book button	Pop up screen will appear confirming successful booking “thank you for booking” with booking id, the amount, card number, customer name, date and an ok button	As expected,	Pass
6.	Click the bookings option to view the items on it	Display services with their pictures, titles, prices, a delete option, edit button, and total amount of the booking.	As expected,	Pass

Test Case ID: TC_CHECK-IN_02 **Test Case Description:** Successful check-in

Created By: TAKALANI MASHAU **Reviewed By:** NAANDA **Version:** 01

Tester's Name: KELEBOGILE MAKHUDU **Date Tested:** 22 September 2023

Prerequisites: https://www.roomserve.com

Test Data:

- Booking ID
- Guest details
- Room type and date

Test Scenario: Check-in functionality

Step#	Step Details	Expected Results	Actual Results	Outcome
1.	Booking is confirmed	User gets a confirmation with their booking details	As expected,	pass
2.	Verify guest's identity and booking details	Guest details and booking details are valid	As expected,	pass
3.	Front desk staff issues key card	Guest receives correct room key card	As expected,	pass
4.	Guest inspects room	Room matches booking details	As expected,	pass
5.	Front desk staff confirms check-in	Check-in process is successful	As expected,	pass

Test Case ID: TC_BILLING_03 **Test Case Description:** Billing calculation accuracy

Created By: TAKALANI MASHAU **Reviewed By:** NOMKHOSI **Version:** 01

Tester's Name: KELEBOGILE MAKHUDU **Date Tested:**22 September 2023

Prerequisites:

1. Access to Chrome, Safari and Microsoft edge browser
2. https://www.roomserve.com

Test Data:

- Valid customer account
- Payment method details Valid customer account
- Booking details

Test Scenario: Check the accuracy of billing and correct payments

Step#	Step Details	Expected Results	Actual Results	Outcome
1.	Navigate to https://www.roomserve.com	Site should open	As expected,	pass

2.	Click on the login option	Display screen with log in details required (username and password), close and log in option below	As expected,	pass
3.	Enter valid credentials to log in	Display home page with menu(categories)	As expected,	pass
4.	Click on one of the options on the menu	Display services on that option, with picture, price, service name and description	As expected,	pass
5.	Select a service and click add to reservation button	Pop up screen with confirming “reservation added”	As expected,	pass
6.	Click the reservations option	Display all the services added with their pictures, name, price, option to delete, total amount and make a booking option	As expected,	pass

Test Case ID:TC_SECURITY_04 **Test Case Description:** Verify security when logging in

Created By: TAKALANI MASHAU **Reviewed By:** IVA **Version:** 01

Tester's Name: KELEBOGILE MAKHUDU **Date Tested:** 22 September 2023

Prerequisites:

1. Access to Chrome, Safari and Microsoft edge browser
2. https://www.roomserve.com

Test Data:

- Username
- Password

Test Scenario: Test security when log in into an account

Step#	Step Details	Expected Results	Actual Results	Outcome
1.	Navigate to https://www.roomserve.com	Site should open and show an interface with hotel name, home, contact, about us, booking, log in, sign up options. A menu (categories) below with the services they offer.	As expected,	pass

2.	Click on the log in option	Display screen with log in details required (username and password), close and log in option below	As expected,	pass
3.	Enter valid credentials to log in	Display home page with menu(categories)	As expected,	pass
4.	Click the login button	Display screen with log in details required (username and password), close and log in option below	As expected,	pass
5.	Enter valid username and invalid password	Pop up screen display “wrong password”	As expected,	pass
6.	Enter invalid credentials	Display screen with message” user does not exist”	As expected,	pass
7.	Enter invalid username and valid password	Display screen with message “user does not exist”	Display home page with menu(categories)	fail
8.	Enter invalid credentials	Display screen with message “user does not exist”	Display home page with menu(categories)	fail
9.	Enter valid username and invalid password	Display screen with message” user does not exist”	Display home page with menu(categories)	fail

Test Case ID: TC_STRESS_05 **Test Case Description:** Verify if the system is stable and reliable

Created By: TAKALANI MASHAU **Reviewed By:** IVA **Version:** 01

Tester's Name: KELEBOGILE MAKHUDU **Date Tested:**22 September 2023

Prerequisites:

1. Access to Chrome, Safari and Microsoft edge browser
2. https://www.roomserve.com

Test Scenario: Stress: reliability and stability testing

Step#	Step Details	Expected Results	Actual Results	Outcome
1.	Navigate to https://www.roomserve.com	Site should open	As Expected,	Pass
2.	Concurrent users select different options on the home page	Display what each user selected	As Expected,	pass

3.	If others selected services available in the menu and added Items in reservations, Others are looking at all the services, Others are writing comments(message), Others on the payment process, Others are logging in, Others are signing up.	Display the searched service without taking longer. Display “THANKS FOR THE MESSAGE” Display “THANK YOU FOR YOUR BOOKING” with booking ID, amount, card number, name, date, and ok button. Display required details, username and password. Display screen to enter username and password.	As Expected,	pass
4.	If others selected services available in the menu and added services in reservations, Others are looking at all the services, Others are writing comments(message), Others on the payment process, Others are logging in and others are signing up.	Display the searched services without taking longer. Display “THANKS FOR THE MESSAGE” Display “THANK YOU FOR YOUR BOOKING” with booking ID, amount, card number, name, date, and ok button. Display required details, username and password. Display screen to enter username and password.	Takes time to display” reservations.” Takes longer to respond.	fail

4. TEST SUMMARY REPORT

Roomserve is an innovative hotel management system designed to streamline the processes of room bookings, check-ins, and billing for hotels. This advanced system enables multiple users to access and manage reservations simultaneously, significantly reducing the likelihood of overbookings and ensuring that guests receive a seamless experience upon arrival. With Roomserve, hotel staff can efficiently track room availability in real time, allowing them to respond promptly to new bookings while maintaining accurate records. The system's robust features include automated notifications for both guests and staff, enabling smooth communication throughout the booking process. Additionally, Roomserve incorporates a comprehensive billing management feature that accurately calculates charges and generates invoices, minimizing errors and enhancing customer satisfaction. By integrating these functionalities into a single platform, Roomserve not only improves operational efficiency but also enhances the overall guest experience, making it an essential tool for modern hospitality management.

RoomServe offers conference hosting, restaurant, day visits and night visits. This system allows customers to get into it and view the menu without signing up.

Assumptions:

- Display an interface that shows a hotel name on top, followed by Home, Contact, about us, bookings, Sign up and Log in options below the hotel Name.
- Display a menu (categories) of the services they offer which are:
  1. Day visits
  2. Night Visits
  3. Restaurant
  4. Conference hosting
- Display services with their Type, Price and Details like room size, availability and duration.
- It must allow users to select options, view options, show total amount of options.
- Show details of the services like Picture, Type, Price and a delete option.
- An option to make a booking.
- Before making a booking, the user is required to fill in Personal details, Address and card details, contact details and an option to close is displayed.

  After filling in all the required details and clicking the booking button, a pop-up screen confirming booking successfully with details like booking ID, Amount, Card number, Customer Name, Date and Ok button.

Documents created as part of testing:

- Test plan
- Test case Specification
- Test Design Specification
- Test Procedure Specification
- Test data
- Test Environment setup
- Test strategy
- Test summary report

Tasks to be performed:

- Test planning
- Test monitoring and control
- Test analysis
- Test design
- Test implementation
- Test execution
- Test completion

PASS/FAIL CRITERIA

test plan uses black box testing, it is using Equivalence partitioning and State transition techniques, so the process will follow these steps of black box as it follows:

- Analyze the requirement specification document because we know nothing about the internal workings of the system.
- Valid inputs and invalid inputs will be chosen based on the requirements specification document.
- Test cases are created for valid and invalid inputs.
- Tests are executed for both valid and invalid inputs.

The actual output and the expected output for valid inputs are compared, if actual output is equal to the expected output, then the test is passed.

The actual and expected out for invalid inputs are compared; if the actual output is equal to the expected output, then the test has passed.

Then a conclusion will be made as for the proper functioning of the website under test.

DEFECTS FOUND

The problem that we encountered was with the payment process and contact feature of the site, when we enter invalid inputs on the payment process it does not sense or recognize that the inputs are invalid. It allowed us to continue with the payment and the order was placed. For the card number it was not supposed to allow various characters to be entered, if so then the payment process must not procced. A card number has limited numbers so even if the user exceeds or does not reach the exact number the site must not proceed with payment. Again, for the year it was supposed to display the year automatically because as we were testing its does let the payment process proceed even though the user entered previous year not current year.

Contacting this site let users send empty messages and that will be an issue as we assumed that it may be used for reviews and comments about the site from customer/ users, it can also be used by a customer who wants to complain about an order. So, as it allows empty messages to be sent this means that a lot of useless or meaningless information will be stored in the database which will not help the store management to get feedback about their products and services.

The developers must specify the datatype and length in the development process to avoid such issues. If the field is for numbers only then no characters must be allowed to be entered same as for characters no numbers must be allowed, then if it's a combination then also the datatype and length must be specified.

Also testing can be performed at the development process to avoid find errors/ bugs at a later stage. These bugs were identified as we were using both IOS and Android operating systems on mobile phones and laptops.

These identified bugs are a problem to end user and business because if the site let the user place an empty order this will cause confusing in marketing and sales personnel who receives orders, also the user's money will be taken for an empty order that will also cause confusion on accounting and finance who is responsible for the cash flows of the business. For a business to receive empty or Meang less messages will also be a problem because the information is used for analysis purposes, decision making and other business purposes.

The bug on payment process affects the whole business process or the purpose of this e-commerce site. The impact is huge because if the site cannot sense that the card number doesn't not match the users name it means the security is not good enough. Also, if it does not sense invalid inputs that means some people will enter or can enter other people's details.

I would suggest that the testing must happen throughout the process of developing, also on the payment part developers must have datatypes with lengths, when the user pays the must be a notification that the user will receive on the cellphone number entered to verify if he/ she is paying to make sure that no one is using other people's details.

For contact option the site might be designed strictly not to accept empty messages.

TEST COVERAGE

Booking Management

- Booking creation
- Booking editing
- Booking cancellation
- Booking status update

Payment Processing

- Payment gateway integration
- Payment processing success/failure scenarios

Guest Management

- Guest profile creation

- Guest profile editing

- Guest check-in/check-out

RECOMMENDATIONS

1. Regular software updates
2. Continuous staff training
3. Periodic Security audits
4. System Scalability
5. Guest feedback mechanisms

5. CONCLUSION

In conclusion, the development of a hotel management system for handling room bookings, check-ins, and billing represents a significant advancement for the hotel. This system not only addresses critical operational challenges, such as preventing overbookings and ensuring accurate billing, but also enhances overall efficiency by allowing simultaneous user access. The integration of real-time data and automated processes allows the hotel to provide a seamless experience for both guests and staff, fostering higher levels of customer satisfaction and operational reliability. By minimizing human error and streamlining workflows, the hotel can maintain a competitive edge in the hospitality industry. Moreover, the system's ability to generate insightful analytics empowers management to make informed decisions, optimize resources, and adapt to market trends. As the hotel continues to refine and enhance this system through training, integration, and feedback, it will be well-positioned to meet the evolving needs of guests and respond to the dynamic environment of the hospitality sector. Ultimately, this initiative underscores the hotel's commitment to excellence in service delivery and operational effectiveness, paving the way for sustained growth and success.

6. REFERENCES