

# TEST PLAN

[Amazon Mobile Application]

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## Contents

1. Introduction .....	4
1.1 Project Background .....	4
1.2 Overview .....	4
1.3 Purpose and Scope .....	4
1.4 Assumptions/Constraints .....	4
1.5 Roles and Responsibilities .....	4
2. Test Environment and Tools Needed .....	5
2.1 Test Environments .....	5
2.2 Test Support tools .....	5
3. Overall Test Approach and Process .....	6
3.1 Testing Phases .....	6
3.1.1 Test Planning .....	6
3.1.2 Test Definition .....	6
3.1.3 Test Execution .....	6
3.2 Overall Test Strategy .....	6
3.2.1 Entry and exit criteria.....	6
3.2.2 Testing Traceability .....	6
3.3.3 Testing Issues .....	6
3.2.4 Testing Principles .....	6
4. Unit Test .....	7
4.1 Test Objective .....	7
4.2 Test Items in scope .....	7
4.3 Test Scenarios.....	7
4.4 Test Approach .....	7
5. Integration Test .....	8
5.1 Test Objective .....	8
5.2 Test items in scope .....	8
5.3 Test Scenarios.....	8
5.4 Test Approach .....	8
6. System Test.....	9
6.1 Test Objective .....	9
6.2 Test items in scope .....	9
6.3 Test Scenarios.....	9
6.4 Test Approach .....	9
7. User Acceptance Test .....	10

7.1 Test Objective .....	10
7.2 Test items in scope .....	10
7.3 Test Scenarios.....	10
7.4 Test Approach .....	10
8. Performance Test .....	11
8.1 Test Objective .....	11
8.2 Test items in scope .....	11
8.3 Test Scenarios.....	11
8.4 Test Approach .....	11
9. Regression Test.....	12
9.1 Test Objective .....	12
9.2 Test items in scope .....	12
9.3 Test Scenarios.....	12
9.4 Test Approach .....	12
10. Test Results .....	13
10.1 Communication and Tracking .....	13
10.2 Required Testing Metrics .....	13
11. Test Schedule .....	14

## 1. Introduction

### 1.1 Project Background

The Amazon mobile app is a widely used e-commerce platform that allows customers to browse and purchase products on their mobile devices. The app provides a seamless shopping experience, including features like product search, reviews, recommendations, secure payment options, and order tracking.

### 1.2 Overview

- The test plan outlines the comprehensive approach and objectives for testing the Amazon mobile app.
- The purpose is to ensure the app functions flawlessly, provides a seamless shopping experience, and meets customer expectations.
- The app will be tested on iOS and Android platforms, targeting the latest versions available.

### 1.3 Purpose and Scope

The purpose of this test plan is to ensure the quality and reliability of the Amazon mobile app across various devices and operating systems. The testing will cover all critical functionalities, including product search, browsing, cart management, checkout process, payment options, and account management.

### 1.4 Assumptions/Constraints

- The test environment will include a range of mobile devices (Android and iOS) with different screen sizes and resolutions.
- The test team will have access to test accounts with necessary privileges for testing various app features.
- The network connectivity during testing will be stable and representative of real-world usage scenarios.
- The app will be tested in multiple languages, focusing on the languages with the highest user base.

### 1.5 Roles and Responsibilities

Role	# of Resources Needed	Responsibility
Test manager	1	Responsible for overall test planning, coordination, and reporting.
Test Analyst	2	Responsible for test case design, execution, and defect management.
Testers	3	Responsible for executing test cases, logging defects, and providing feedback.
Developers	3	Responsible for fixing defects reported by the testing team.
Product Owner	1	Responsible for providing requirements and reviewing test results.

## 2. Test Environment and Tools Needed

### 2.1 Test Environments

Environment Name	Description	Configuration	Test Type
iOS Devices	Physical devices running iOS for testing the Amazon Mobile App on iOS platform.	iPhone X, iPhone 11, iPad Air	Functional, Usability, Performance, Security, Compatibility
Android Devices	Physical devices running Android for testing the Amazon Mobile App on Android platform.	Samsung Galaxy S10, Google Pixel 4, Huawei P30	Functional, Usability, Performance, Security, Compatibility
Network	Various network conditions including 3G, 4G, and Wi-Fi.	3G, 4G, Wi-Fi networks with different signal strengths and bandwidths.	Performance, Security

### 2.2 Test Support tools

Tool Category or Type	Tool Brand Name	Vendor or In-house	Version	Point of Contact for Access
Test Management	TestRail	Vendor	5.2	[name], QA Manager
Mobile Device Cloud	AWS Device Farm	Vendor	Latest	[name], Test Engineer
Performance Testing	Apache JMeter	Open source	5.4	[name], performance engineer
Mobile automation	Appium	Open source	3.0.15	[name], automation engineer
Manual Testing	Android Studio	Open source	2022.2.1	[name], Test Engineer

## 3. Overall Test Approach and Process

### 3.1 Testing Phases

#### 3.1.1 Test Planning

- Description: The Test Plan document focuses on the testing scope, testing types, schedule, resources, and test environment. It defines the overall approach, activities, and responsibilities for testing the application.
- Deliverable: Test Plan (this document)

#### 3.1.2 Test Definition

- Description: The test definition stage includes writing test procedures that cover the functionality and business processes defined in the Test Planning stage. The test procedures are written in an "Action; Expected Results" format and associated with the supporting test data sets.
- Deliverables: Consolidated Test Case Document, Test Datasets

#### 3.1.3 Test Execution

- Description: During this stage, Test Cases are executed, and defects are reported for discrepancies between expected and actual results. A Test Summary Report is generated at the end of this stage, which includes the test results and helps evaluate the quality level and decide on software release or additional testing cycles if needed.
- Deliverable: Test Report

### 3.2 Overall Test Strategy

Description: The overall test strategy involves scheduling the modernization effort into phases or iterations. It aligns testing cycles with the modernization schedule. The strategy defines the testing techniques and types to be used, the sequence of testing, and areas of responsibility. It also includes criteria for entering, exiting, and suspending testing, testing traceability, resolving testing issues, and testing principles.

#### 3.2.1 Entry and exit criteria.

Description: The criteria and process for entering, exiting, and suspending testing will be defined and documented. This includes factors such as completion of test cases, achieving test objectives, and management approval.

#### 3.2.2 Testing Traceability

Description: The process for testing traceability will be established to ensure that all requirements are covered by corresponding test cases and that test coverage is comprehensive.

#### 3.2.3 Testing Issues

Description: The process for resolving testing issues, including defects and bugs, will be defined. This includes defect tracking, prioritization, assignment, and resolution.

#### 3.2.4 Testing Principles

Description: The project team will adopt the following testing principles:

- Prioritize test types and scenarios based on criticality and risk.
- Plan testing activities early in the project lifecycle.
- Collaborate closely with development and design teams.
- Perform regular reviews and inspections of test artifacts. e. Continuously monitor and improve the testing process.

## 4. Unit Test

### 4.1 Test Objective

To verify the functionality of individual units or components of the Amazon Mobile App.

### 4.2 Test Items in scope

- User registration form
- Search functionality
- Wish list functionality
- Product details display
- Add to cart functionality.

### 4.3 Test Scenarios

Below test scenarios would be tested as part of unit testing.

Scenario ID #	Scenario Description
1	Verify that the user registration form validates email addresses correctly, accepting valid formats and rejecting invalid ones.
2	Validate that the search functionality handles both uppercase and lowercase search queries without case sensitivity issues.
3	Verify that the wish list functionality allows users to add multiple items and displays them correctly in the wish list.
4	Validate that the product details page accurately displays product attributes such as colour, size, and specifications.
5	Verify that the add to cart functionality updates the cart count accurately when multiple items are added.
6	Test the behaviour of the user registration form when fields are left empty, ensuring appropriate error messages are displayed.
7	Validate that the search functionality displays relevant results for product names containing special characters.
8	Verify that the user registration form enforces valid phone number formats, rejecting entries with incorrect formats.

### 4.4 Test Approach

- Identify the individual components or modules of the Amazon mobile app.
- Develop test cases to verify the functionality of each component or module independently.
- Execute the test cases and compare the actual results with the expected results.
- Isolate and address any defects found during testing.
- Automate unit tests where applicable to ensure consistent and efficient execution.
- Conduct code reviews and peer testing to ensure code quality and adherence to best practices.

## 5. Integration Test

### 5.1 Test Objective

To verify the integration and interaction between different components and systems of the Amazon Mobile App.

### 5.2 Test items in scope

- User registration integration with third-party authentication providers
- Search functionality integration with the product inventory system
- Wish list functionality integration with the notification system
- Registration process integration with the payment gateway
- Search functionality integration with the customer support system

### 5.3 Test Scenarios

Below test scenarios would be tested as part of integration testing.

Scenario ID #	Scenario Description
1	Verify that user registration integrates seamlessly with the email notification system to send confirmation emails.
2	Validate that the search functionality integrates with the recommendation engine, providing accurate personalized suggestions.
3	Verify that the wish list functionality integrates with the social sharing API, allowing users to share their wish lists on social media platforms.
4	Validate that the registration process integrates with the payment gateway, successfully processing payments during account setup.
5	Verify that the search functionality integrates with the customer support system, providing relevant help articles for user queries.
6	Test the behaviour of the app when a user registers with an email address already associated with an existing account, ensuring appropriate error handling.
7	Validate that the search functionality integrates with the inventory management system, accurately reflecting product availability and stock levels.
8	Verify that the wish list functionality integrates with the notification system, sending reminders or alerts for wish list items that go on sale.

### 5.4 Test Approach

- Identify the integration points and interfaces between different components or modules.
- Execute the test cases, ensuring that data is transferred accurately and consistently.
- Validate the functionality of the app when components interact with each other.
- Address any defects or inconsistencies found during integration testing.
- Conduct end-to-end scenarios to verify the overall system behavior and integration flow.



## 6. System Test

### 6.1 Test Objective

To verify the behaviour and performance of the Amazon Mobile App as a whole system.

### 6.2 Test items in scope

- App performance across different operating systems (iOS, Android)
- External link handling within the app
- Multi-language support and content display
- App behavior during interruptions (calls, low battery)
- App data persistence and retention of user preferences

### 6.3 Test Scenarios

Below test scenarios would be tested as part of system testing.

Scenario ID #	Scenario Description
1	Validate that the app supports various device screen sizes and resolutions without any UI distortion or elements overlapping.
2	Verify that the app functions correctly when switching between different network connections (Wi-Fi, cellular data).
3	Validate that the app adapts to different language selections, displaying localized content and translations accurately.
4	Verify that the app retains user preferences and settings, such as language, theme, and notification preferences.
5	Validate that the app handles interruptions like incoming calls, messages, or app notifications without crashing or losing data.
6	Test the app's behaviour when the device storage is nearly full, ensuring it doesn't impact performance or lead to data loss.
7	Verify that the app supports both dark and light themes, allowing users to switch between them seamlessly.
8	Validate that the app maintains stability and responsiveness even when the device is running low on battery.

### 6.4 Test Approach

- Perform functional testing to ensure that all features of the Amazon mobile app work as expected.
- Validate the app's compatibility with different devices, operating systems, and screen sizes.
- Execute performance testing to assess the app's responsiveness and resource utilization.
- Conduct regression testing to ensure that new features do not impact existing functionality.
- Verify the app's behavior in scenarios, such as low network connectivity.

## 7. User Acceptance Test

### 7.1 Test Objective

To validate that the Amazon Mobile App meets user requirements and expectations.

### 7.2 Test items in scope

- Account information update functionality
- Rating and reviewing submission for purchased products.
- Order tracking and notifications
- Accessibility of promotional offers and discounts
- Feedback submission and issue reporting

### 7.3 Test Scenarios

Below test scenarios would be tested as part of user acceptance testing.

Scenario ID #	Scenario Description
1	Verify that users can successfully update their account information, such as name, email, or shipping address.
2	Validate that users receive accurate and timely order confirmation emails with all relevant details.
3	Verify that users can easily track their orders through the app, with real-time updates on shipping status and delivery estimates.
4	Validate that users can apply and redeem promotional offers or discount codes during the checkout process.
5	Verify that users can provide feedback or report issues directly through the app, with a clear and intuitive feedback submission process.
6	Test the app's behaviour when users attempt to submit a rating or review without providing the required information, ensuring proper validation.
7	Validate that users receive appropriate notifications for order updates, such as shipment delays or product availability changes.
8	Verify that users can easily contact customer support through the app and receive prompt assistance for their inquiries or issues.

### 7.4 Test Approach

- Collaborate with end users or user representatives to define user acceptance criteria.
- Develop test cases that align with user workflows and requirements.
- Conduct user acceptance testing using real user scenarios and data.
- Collect user feedback and evaluate the app's performance against user expectations.

## 8. Performance Test

### 8.1 Test Objective

To validate the performance and scalability of the Amazon mobile app under different load conditions.

### 8.2 Test items in scope

- App loading time and response time for different sections
- Network latency handling and responsiveness
- Battery consumption and resource management
- Smooth scrolling and navigation in various scenarios
- Stability and memory management during extended usage

### 8.3 Test Scenarios

Below test scenarios would be tested as part of performance testing.

Scenario ID #	Scenario Description
1	Measure the app's loading time on different devices and network conditions, ensuring it meets acceptable performance benchmarks.
2	Validate that the app maintains a smooth and responsive user interface even when multiple processes or background tasks are running.
3	Verify that the app's search functionality returns results within a reasonable response time, even when handling large datasets.
4	Test the app's behaviour when there is a sudden surge in user traffic, ensuring it can handle increased load without significant performance degradation.
5	Validate that the app efficiently manages memory resources, preventing excessive memory consumption or crashes during prolonged usage.
6	Verify that the app's scrolling and navigation remain smooth and responsive, even when viewing long lists or product catalogues.
7	Measure the app's battery consumption during regular usage scenarios, ensuring it doesn't excessively drain the device battery.
8	Validate that the app maintains stable performance even when there are variations in network connectivity or signal strength.

### 8.4 Test Approach

- Identify performance test scenarios, such as high user traffic, or peak load periods.
- Define performance benchmarks and acceptable thresholds for response time, and throughput.
- Use load testing tools to simulate realistic user loads and measure app performance.
- Monitor and analyze the app's response time, and server-side processing time.

## 9. Regression Test

### 9.1 Test Objective

To ensure that existing functionalities of the Amazon Mobile App remain unaffected by changes or updates.

### 9.2 Test items in scope

- User account functionalities (password reset, profile updates)
- Fixed defects from previous releases
- Essential app features (search, purchase)
- User interface (UI) changes impact on usability and navigation
- Integration with third-party services or APIs

### 9.3 Test Scenarios

Below test scenarios would be tested as part of regression testing.

Scenario ID #	Scenario Description
1	Verify that existing user account functionalities, such as password reset or profile updates, continue to work after app updates.
2	Validate that fixed defects from previous releases do not reappear during subsequent updates.
3	Verify that essential app features, such as product search and purchase, remain unaffected by UI changes or layout modifications.
4	Verify that essential app features, such as product search and purchase, remain unaffected by UI changes or layout modifications.
5	Verify that integrations with third-party services or APIs continue to function correctly after app updates.
6	Test the app's behaviour when upgrading from a previous version, ensuring data migration and compatibility are seamless.
7	Validate that any changes to user authentication or authorization mechanisms do not affect existing user accounts or access permissions.
8	Verify that the app's performance and responsiveness do not degrade with new feature additions or updates.

### 9.4 Test Approach

- Identify the existing features, components, and integrations that need to be regression tested.
- Develop test cases to verify the functionality of these features and integrations.
- Execute the regression test cases, comparing the actual results with the expected results.
- Address any defects or inconsistencies found during regression testing.

## 10. Test Results

### 10.1 Communication and Tracking

To ensure effective communication and tracking of the testing effort for the Amazon mobile app, the following process will be implemented:

**Communication:**

- Regular status meetings will be conducted to provide updates on the testing progress, discuss any issues or challenges, and align on priorities.
- Test progress and status reports will be shared with relevant stakeholders, including project managers, development team, and business representatives.
- Communication channels such as email, instant messaging, and project management tools will be used to facilitate timely communication and collaboration.

**Tracking and Reporting:**

- A test management tool, such as Jira, will be utilized to track and manage test cases, test execution, and defects.
- Test progress and coverage will be tracked through the test management tool, providing visibility into the overall testing effort.
- Defects will be logged, tracked, and reported in the test management tool, including assigning severity and priority levels.
- Regular defect triage meetings will be conducted to review and prioritize defects for resolution.
- Any critical issues or blockers will be escalated to the appropriate stakeholders for immediate attention and resolution.

### 10.2 Required Testing Metrics

The following testing metrics will be gathered during the testing effort for the Amazon mobile app:

- Test coverage: Percentage of requirements, functionalities, or user stories covered by executed test cases.
- Test case execution status: Number and percentage of test cases executed, passed, failed, blocked, or pending.
- Defect metrics: Number of defects found, categorized by severity and priority levels.
- Defect resolution and closure rate: Average time taken to resolve and close defects from the time of discovery.
- Test execution progress: Percentage of planned test cases executed in relation to the overall test scope.
- Test cycle time: Duration taken from test initiation to completion, measuring the efficiency of the testing process.
- Test case reusability: Number of test cases that can be reused across different testing cycles or releases.
- Test effectiveness: Number of critical defects or high-priority issues identified during testing.

These metrics will be summarized and reported in the End of Cycle/Phase Report(s) to provide insights into the testing progress, quality status, and areas for improvement.

## 11. Test Schedule

Milestone	Planned Start Date	Actual Start Date	Planned End Date	Actual End Date
Test Planning	[date]	[date]	[date]	[date]
Test Environment Setup	[date]	[date]	[date]	[date]
Test Case Preparation	[date]	[date]	[date]	[date]
Unit Testing	[date]	[date]	[date]	[date]
Integration Testing	[date]	[date]	[date]	[date]
System Testing	[date]	[date]	[date]	[date]
User Acceptance Testing	[date]	[date]	[date]	[date]
Performance Testing	[date]	[date]	[date]	[date]
Regression Testing	[date]	[date]	[date]	[date]
Test Completion	[date]	[date]	[date]	[date]

The above table outlines the planned start and end dates for each milestone in the test schedule. The "Actual Start Date" and "Actual End Date" columns will be updated as the testing progresses. The test schedule sets the context for the testing effort and helps ensure that testing activities are completed within the planned timeframes.