**Test Plan: Payment Process Validation**

**Objective:**

To ensure the accuracy and reliability of the payment process on e-commerce website, specifically focusing on adding new debit/credit cards, validating card details, and confirming transaction success or failure.

**Scope:**

This test plan covers the testing of:

* Adding a new debit/credit card.
* Validating different scenarios for card details entry.
* Confirming transaction success and failure scenarios.

**Methodology:**

The testing will be conducted through a combination of manual and automated testing techniques to validate the payment process. And team will be work in Agile scrum board.

**Test Approach:**

QA team will cover combination of exploratory testing, boundary value analysis, equivalence partitioning, and negative testing will be employed to cover various scenarios.

|  |  |
| --- | --- |
| Exploratory Testing: | **Objective:** To explore the payment process organically, uncovering potential issues or unexpected behaviors. **Execution:** Testers will navigate through the payment flow, attempting various inputs and scenarios not explicitly covered in test cases. **Benefits:** This approach allows for the discovery of unforeseen issues and user experience-related concerns. |
| Boundary Value Analysis and Equivalence Partitioning | **Objective:** To validate different ranges and classes of valid/invalid inputs for card details. **Execution:** Testers will examine edge cases (e.g., maximum and minimum valid card numbers, expiration dates) and divide input spaces into equivalence partitions to ensure comprehensive coverage. **Benefits:** Helps in verifying the behavior at boundaries and ensures validation of typical and atypical input scenarios. |
| Negative Testing: | **Objective**: To evaluate the system's behavior when presented with invalid or unexpected inputs. **Execution**: Testers will deliberately input incorrect or malformed card details (e.g., invalid card numbers, expired dates) and observe system responses. **Benefits**: Identifies how the system handles erroneous inputs, ensuring appropriate error messages and system stability. |
| Regression Testing: | **Objective**: To ensure that new additions or changes to the payment process do not adversely affect existing functionalities. **Execution**: Re-execution of previously validated test cases after modifications or enhancements in the payment system. **Benefits**: Helps in maintaining system integrity and ensures that new implementations haven't broken previously working features. |
| Security and Compliance Testing: | **Objective**: To ensure compliance with security standards and protocols for handling sensitive card information. **Execution**: Verification of adherence to PCI DSS standards, encryption of card details, and secure transmission. **Benefits**: Ensures customer data safety and regulatory compliance. |
| Usability Testing: | **Objective**: To evaluate the user-friendliness and intuitiveness of the payment flow. **Execution**: Involves real users to assess the ease of adding new cards and completing transactions. **Benefits**: Provides insights into user experience, helping in improving the payment process from a user's perspective. |
| Automated Testing (if applicable) | **Objective**: To automate repetitive test cases for efficient and rapid execution. **Execution**: Development of automated scripts using suitable testing frameworks/tools. **Benefits**: Reduces human effort, facilitates faster feedback, and aids in continuous integration processes. |

**Assumptions:**

Access to a testing environment that replicates the production environment of e-commerce website

Availability of valid debit/credit card details for testing purposes.

Reliable internet connectivity for transaction processing.

**Risk Analysis:**

**Potential Risks:**

* Payment gateway issues leading to transaction failures.
* Inaccurate error handling for invalid card details.
* Integration issues between Ecommerce website and payment processor.
* Security risks associated with handling card details.

**Mitigation Plan:**

* Regular monitoring of payment gateway performance.
* Detailed error handling for various card detail scenarios.
* Collaboration with the payment processor for seamless integration.

**Roles and Responsibilities:**

* **Testers**: Responsible for executing test cases and documenting results.
* **Test Lead**: Overseeing the test plan execution and coordinating with stakeholders.
* **Developers**: Collaborating on issue resolution and fixes.
* **Business Analysts**: Providing necessary inputs and requirements.

**Test Template:**

Test cases template to be utilized for documenting test scenarios, input data, and expected results.

**Test Deliverables:**

* Test case documents.
* Test execution reports.
* Defect reports.
* Effort Estimation:
* Manual testing: Approximately [Approx hours/day estimation].

**Test Automation:**

Development of automated test scripts using [testing framework/tool] for repetitive and regression testing.

**Entry Criteria:**

* Availability of Test Environment: Ensure that the required test environment (hardware, software, configurations) is set up and available.
* Availability of Test Data: Ensure that the necessary test data is prepared and available for testing purposes.
* Completion of Development: Ensure that the development phase for the specific module or feature being tested is completed.
* Requirement Documentation: Ensure that detailed requirement documentation or user stories are available and understood by the testing team.
* Test Plan Approval: The test plan detailing the testing approach, scope, and objectives should be reviewed and approved by relevant stakeholders.
* Test Resources: Ensure that necessary testing resources, including tools, testing software, and skilled personnel, are available and allocated.
* Test Scripts/Scenarios: Prepare the test scripts, test cases, or testing scenarios that will be used during the testing phase.
* Risk Analysis: Identify and analyze potential risks associated with the testing phase and have mitigation plans in place.

**Exit Criteria:**

* Test Coverage: Ensure that a certain percentage of the code or functionality has been tested adequately.
* Defect Density: Reach a predefined level of acceptable defects or issues found during testing.
* Stability: The software should achieve a certain level of stability, with a minimal number of critical or high-priority issues.
* Performance: Ensure that the software meets predefined performance metrics or requirements.
* Regression Testing: Successful completion of regression testing to verify that new changes haven't negatively impacted existing functionalities.
* Documentation: Ensure that test documentation, including test cases, test reports, and any other necessary documents, are complete and up to date.
* Client or Stakeholder Approval: Obtain approval or sign-off from relevant stakeholders or clients that the testing phase has met their expectations and requirements. Minimal critical defects in the payment process.

**Test Environment:**

Operating System: [Windows/Max/Ios/Android]

Browsers: [Chrome/Edge]

Payment Gateway: [Paypal]

**Network Configuration**: Stable internet connection

**Defect Tracking and Reporting:**

Utilization of [HP-ALM & JIRA] for documenting and monitoring issues.

Regular defect status reports shared with stakeholders.

**Schedule:**

**Test Planning: [Duration]**

**Test Execution: [Duration]**

**Defect Resolution: [Duration]**

**Reporting and Closure: [Duration]**

**Note :-** This test plan will be regularly reviewed and updated as necessary throughout the testing process to ensure alignment with project requirements and changes.