**STP**

**Automation testing system**

**for**

**Electric car ecommerce website**

**Written by:**

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**1 General**

## Document purpose

* Functional and nonfunctional tests
* The tests will be performed according to the AGILE Methodology
* Work Approach: Dividing the system by Functionality
* Managing project and team using Trello
* End to End tests
* Integration tests
* Unit tests

## General description of the system

A completely eCommerce website using Django, REACT and REDUX with these functionality:

* Login/signup for new customers
* Add/ remove products to the Shopping cart
* Search for product
* Product review
* Payment options PayPal/credit card
* Check order process
* Admin management section
* Admin add/remove product
* Admin management customer users

## Terms and concepts

* **Functional tests** – testing the functional behaviors of the system according to requirements and Specification document.
* **Non-functional** -how the system environment works what effects on the system (Ex: security, usability, performance).
* **Integration tests** –also called API tests it is a type of [software testing](https://www.techtarget.com/whatis/definition/software-testing) that analyzes an application program interface (API) to verify it fulfills its expected functionality, security, performance and reliability
* **Unit tests** – define the conditions to accept the system for testing.
* **Docker**: is a set of platforms as a service product that use OS-level virtualization to deliver software in packages called containers. The service has both free and premium tiers. The software that hosts the containers is called Docker Engine. It was first started in 2013 and is developed by Docker
* **Jenkins**: Jenkins is an open-source automation server. It helps automate the parts of software development related to building, testing, and deploying, facilitating continuous integration and continuous delivery. It is a server-based system that runs in servlet containers such as Apache Tomcat
* **Selenium**: is an open-source umbrella project for a range of tools and libraries aimed at supporting browser automation. It provides a playback tool for authoring functional tests across most modern web browsers, without the need to learn a test scripting language

# Testing strategy

## General strategy

* Functional tests
* integration tests
* Unit tests
* E2e tests
  + 1. **Functional tests**

We will perform these tests to verify the proper functioning of the system screens, according to the characterization approved by the client, in a positive / negative aspect of the processes.

* + 1. **integration tests**

API testing is a type of [software testing](https://www.techtarget.com/whatis/definition/software-testing) that analyzes an application program interface (API) to verify it fulfills its expected functionality, security, performance and reliability

* + 1. **Unit tests**

is a software testing method by which individual units of source code—sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures—are tested to determine whether they are fit for use

* + 1. **E2e tests**

End-to-end testing is a technique that tests the entire software product from beginning to end to ensure the application flow behaves as expected. It defines the product’s system dependencies and ensures all integrated pieces work together as expected.

## Test levels

* + 1. components testing
    2. integration testing
    3. **system testing**
    4. **acceptance testing**

## planned time schedule

|  |  |
| --- | --- |
| **From** | **step** |
| 2 weeks | STP |
| 3 weeks | STD |
| 1 week | Perform first testing cycle |
|  | Perform second testing cycle |

## Tests content

### Tests included in the document

All the sections inside specification document

### Tests not included in the document

N/A

# Training & HR

* Training our team for the task management system we will use - Trello
* 2 testers checking the requirements and specification documents.
* 1 manual tester.
* 4 automation developer.
* 1 team leader.

## 

## Criteria to accept system for testing

The following criteria define the conditions to accept the system for testing.

The purpose of the criteria is to ensure that the system is indeed ready for testing, to avoid situations of instability and double work.

Below given criteria’s:

|  |  |
| --- | --- |
| criteria | Step |
| All planned tests were performed | Sanity tests |
| All tests performed were successful | Sanity tests |

## Criteria to accept system for the next step

The following criteria define the "red line" for moving the system to the next step. The "red line" is defined by:

* The number of open (unfixed) faults and their level of severity
* Percentage of tests performed from the planned tests
* Percentage of tests successfully passed from the tests performed

Faults that are discovered during the tests are documented and marked with a "severity level". Possible severity levels will be

▪ Critical: For a malfunction that causes "failure" in the system

▪ Severe: For a malfunction that does not cause "failure" but does not allow continued normal operation.

▪ Moderate: A malfunction that does not cause "failure" and allows continued normal operation.

▪ Minor: Slight GUI-level malfunction or similar.

The following is the definition of the criteria to accept the system to production, according to the percentage of faults (or CR) from the total number of tests performed:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **minor** | **moderate** | Severe | **critical** | **Criteria** |
| <25% | <20% | 0 | 0 | Opened defects |

The following is the definition of the criteria to accept the system to production, according to Tests levels:

|  |  |
| --- | --- |
| **Percentage %** | **Criteria’s** |
| 90% | Percentage of planned tests were performed |
| 80% | Percentage of tests performed were successful |

# Test types

**Unit tests**

* Test user create by DB counter
* Test user create by ID
* Test user create by status
* Test user create by name field
* Test product create by id
* Test product delete by id
* Test product create by type
* Test product create by data

**integration tests**

* Test register user
* Test login user
* Test API create product

**E2E tests**

* **#Positive scenario**
* Test user log in
* Test buy product

# Coverage table

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement document | Specification document | Design document | STP |
|  | 1.1 |  | 1.0 |
|  | 1.2 | 1.2 | 1.2.4 |
|  |  |  | 1.2.5 |
| 2 | 1.3 | 1.3.1 | 1.3.1.2 |
|  |  |  | 1.3.3.3 |

# Requirements to procced test

|  |  |  |
| --- | --- | --- |
| **#** | **Cause** | **Requirements** |
| **Hardware** | | |
| **312** |  | 8 laptops with windows OS |
|  |  | 2 mobile phones iOS/Android |
|  |  |  |
| **Software** | | |
| **313** |  | Trello, selenium, Docker, Jenkins ,Jira |
|  |  |  |
| **others** | | |
|  |  | 2 testing laps |
|  |  | 1 meeting room |

# Risk management

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # |  |  |  |  |  |  |  |  |  |  |
| 1 | *Our team goes to vacation* | 5 | 3 | 15 | Part of system will not be tested |  | Increase schedule or assign additional testers | project | Team leader | 17/8/22 |
| 2 | Testers without experience | 5 | 3 | 15 | New junior testers | monitoring | Monitor the work of testers | project | Team leader | All time |

# Fault management

*Diagram

Description automatically generated*

### ****#1. New****

When a tester finds a new defect.

### ****#2. Assigned****

Defects that are in the status of New will be approved (if valid) and assigned to the development team by Test Lead/Project Lead/Project Manager.

### ****#3. Open****

The development team starts analysing and works on the defect fix.

### ****#4. Fixed****

When a developer makes the necessary code change and verifies the change, then the status of the bug will be changed as “Fixed” and the bug is passed to the testing team.

### ****#5. Test****

If the status is “Test”, it means the defect is fixed and ready to do test whether it is fixed or not.

### ****#6. Verified****

The tester re-tests the bug after it got fixed by the developer. If there is no bug detected in the software, then the bug is fixed and the status assigned is “verified.”

### ****#7. Closed****

After verified the fix, if the bug is no longer exits then the status of the bug will be assigned as “Closed.”

### ****#8. Reopen****

If the defect remains the same after the retest, then the tester posts the defect using the defect retesting document and changes the status to “Reopen”. Again the bug goes through the life cycle to be fixed.

### ****#9. Duplicate****

If the defect is repeated twice or the defect corresponds to the same concept of the bug, the status is changed to “duplicate” by the development team.

### ****#10. Deferred****

In some cases, the Project Manager/Lead may set the bug status as deferred.

* If the bug found during the end of the release and the bug is minor or not important to fix immediately.
* If the bug is not related to the current build.
* If it is expected to get fixed in the next release.
* The customer is thinking to change the requirement.
* In such cases the status will be changed as “deferred” and it will be fixed in the next release.

### ****#11. Rejected****

If the system is working according to specifications and the bug is just due to some misinterpretation (such as referring to old requirements or extra features) then the Team lead or developers can mark such bugs as “Rejected”.