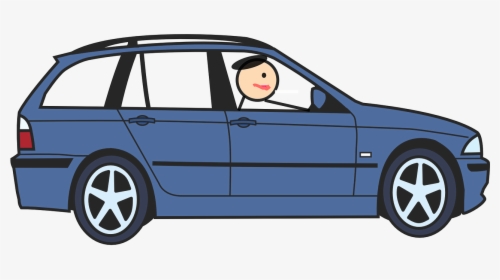
**MILESTONE 3**

**GROUP 10**



**Project Title: Car Rental Application**

**Project Start Date: 05/17/2021 Project End Date: 06/03/2021**

**Team Name: Swift Rentals**

**Team member Names:**

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1. **Project Quality Management**

Quality Management Plan

1 Introduction

1.1 Introduction

Quality is an inseparable aspect for a software product and it plays a greater role in customer satisfaction. Quality Management Plan describes the quality level for the upgradable software which is acceptable for a customer or end user. This plan also defines how the project can ensure this quality and the processes followed to meet quality. Quality management activities ensure updated software is built to meet agreed- upon standards and requirements, work processes are performed efficiently and as documented, non-conformances found are identified and appropriate corrective action is taken.

**1.2. Purpose**

The purpose of developing a quality plan is to elicit the customer’s expectations in terms of quality and prepare a proactive quality management plan to meet those expectations.

**2 Management**

* 1. **Organizational Structure**

The organizational structure contains 3 divisions specifically Quality Control, Quality Assurance and Quality Engineering. In each division we will be having same hierarchy but performs different roles and responsibilities.

* 1. **Roles and Responsibilities**
     1. **Project Sponsor**
* Approve each project stage per framework checkpoints.
* Assess practice of project management framework activities.
* Assess satisfactory resolution of project management gaps.
  + 1. **Project Manager**
* Devising and establishing a company's quality procedures, standards and specifications
* Setting standards for quality as well as health and safety
* Monitoring performance by gathering relevant data and producing statistical reports
* Using relevant quality tools and making sure managers and other staff understand how to improve the business
* Looking at ways to reduce waste and increase efficiency
* Defining quality procedures in conjunction with operating staff
  + 1. **Software Quality Engineer**
* Evaluates the impact of software quality management principles on business objectives and demonstrates comprehensive knowledge of developing and implementing software quality programs.
* Understands systems architecture and be able to implement software development and maintenance processes, quantify the fundamental problems and risks associated with various software development methodologies, and assess, support, and implement process and technology changes.
* Understands configuration management processes, including planning, configuration identification, configuration control, change management, status accounting, auditing and reporting.
* Oversee the production of all software products created by our design and programming team.
* Provide software engineers and developers with necessary analysis tools.
  + 1. **Hardware Quality Engineer**
* Performing schematic capture, PCB design, prototyping bring-up and debugging, test plan creation and functional verification
* Designing and troubleshooting microcontrollers and embedded mixed-signal systems at the component level.
* Working proficiently with oscilloscopes, power supplies, frequency generators, soldering irons and other off-the-shelf equipment.

1. **Testing Methods.**

The team perform various types of testing methods namely Behavior Driven Development (BDD), Acceptance Test Driven Development (ATDD), Exploratory Testing, Session Based Testing and etc. as per requirements demand.

BDD starts with an initial requirement based on end user behavior and calls for tests that are “human readable” and can even replace some requirements documentation. ATDD collects input from customers, uses that input to develop acceptance criteria, translates that criteria into manual or automated acceptance tests and then develops code against those tests. Exploratory testing gives testers ownership over the code to test it in an organized, chaotic way. In this case, testers are not following test steps, but rather using the software in standard or clever ways to try to break it. Testers will document defects as usual, but detailed documentation of what and how the application was tested is not always provided.

Apart from the above testing methods, the team also performs unit testing, integration testing, regression testing and performance testing.

1. **Quality metrics**

Theseare crucial in project management. It is defined as the description of the attributes of the product or project. The use of quality metrics in the control quality process and qualityassurance.

For mobile platform development must meet the user requirements and it should satisfy the quality standards. The development must plan for frequent updates as per OS updates and patches from Android and iOS as these are the major mobile platforms.

**4.1 Types of Testing**

User Acceptance Testing - An Acceptance test is performed by the client and verifies whether the end to end the flow of the system is as per the business requirements or not and if it is as per the needs of the end-user. Client accepts the software only when all the features and functionalities work as expected.

It is the last phase of the testing, after which the software goes into production. This is also called User Acceptance Testing (UAT).

Integration Testing - Testing of all integrated modules to verify the combined functionality after integration is termed as Integration Testing. Modules are typically code modules, individual applications, client and server applications on a network, etc. This type of testing is especially relevant to client/server and distributed systems.

Unit Testing - Testing of an individual software component or module is termed as Unit Testing. It is typically done by the programmer and not by testers, as it requires detailed knowledge of the internal program design and code. It may also require developing test driver modules or test harnesses.

System Testing - Under [System Testing technique](https://www.softwaretestinghelp.com/system-testing/), the entire system is tested as per the requirements. It is a Black-box type testing that is based on overall requirement specifications and covers all the combined parts of a system.

**4.2 Quality Standards**

The below testing scenarios must meet for quality and quality team should ensure to test them using all the testing methodologies.

* The hardware must be a support the configuration for software update planned.
* The software should not break the existing features on web version and support all existing features.
* The software must run on all versions of the Android and iOS operating systems.
* The software update should not slow down the performance of the mobile.
* The software should not crash while using in normal conditions.
* Software must manage about 1 million users at any point of time.
* The application must send application diagnostics reports from time to time to improve user experience.
* The response time for any request must be less than few mile seconds.

1. **Audit Process**

The Quality Audit Procedure can be used to describe the quality audit process and corrective action as a vital component of the total quality management system. To evaluate and continually improve quality assurance, periodic and unscheduled audits of completed products, processes, and product flow shall be performed to ensure compliance with statutory/regulatory, customer, and other requirements. The quality audit includes audit guide, audit process, corrective action and audit records.

The audit process includes below steps.

* Identifies what quality objectives are required to be achieved
* Identifies the factors affecting quality.
* Verifies that the quality controls in place are consistent with the success factors.
* Establishes the competences and capabilities required to deliver the quality outputs.
* Verifies the integrity of the testing results.
* Establishes that improvement in performance, efficiency and effectiveness is pursued in quality.

1. **Problem Reporting and corrective actions process**

The project manager will monitor quality and report exceptions to the executive sponsor and the project sponsor as part of monthly status reporting, or more frequently if conditions warrant. The following logs will be used to itemize, document and track to closure items reported through quality management activities.

**Quality Control Log**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Issue ID** | **Review Date** | **Deliverable Reviewed** | **Findings** | **Resolution** | **Resolution Date** |
| JIRA-XXX |  |  |  |  |  |
|  |  |  |  |  |  |

**Quality Assurance Log**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Issue ID** | **Review Date** | **Process Reviewed** | **Findings** | **Resolution** | **Resolution Date** |
| JIRA-XXX |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**7 Supplier quality and control**

Supplier quality is a supplier’s ability to deliver goods or services that will satisfy customers’ needs. Supplier quality management is defined as the system in which supplier quality is managed by using a proactive and collaborative approach.

It's in an organization’s best interest to ensure that its service or material suppliers are providing the highest quality products and services while also conforming to pre-established requirements. This is often accomplished through the use of supplier quality management systems (QMS) which allow companies to monitor supply chains and inspect or audit materials and services at regular intervals.

The following are some of the proven strategies for improving your vendor quality control program.

* + 1. Get accurate item specifications
    2. Write a vendor compliance ma
    3. Establish good vendor relationships
    4. Use vendor scorecards in the review process
    5. Set up correction and remedy procedures
    6. Use drop-ship controls.