**Quality Management Plan**

**Dynasty Cars**

**Dynasty cars**

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# Introduction

The purpose of this Quality Management Plan is to confirm that a quality product is delivered that conforms to contract requirements and meets the needs of the customer. Dynasty Cars shall have an established Quality Management Plan that is maintained by the organization. The process encompasses quality requirements identification, planning, implementation, and execution of the plan. Once the plan is operational, the team shall plan to assess, measure, monitor, and continually improve the plan.

The purpose of this plan is to:

* Ensure quality is planned
* Define quality management/quality metrics
* Define quality assurance/activities
* Define quality control activities
* Define acceptable quality standards

# Quality Management /Quality Metrics

Product quality for Dynasty Cars’ project is defined by the company’s current standards and criteria for its inventory management system. The focus is on the project’s deliverable and the standards and criteria being used will ensure the product meets established quality standards and customer satisfaction.

The project team will work with Dynasty Cars to define and document all organizational and project specific quality standards for both product and processes. All quality documentation will become part of Dynasty Cars daily operations upon the successful completion of the project.

Metrics will be established and used to measure quality throughout the project life cycle for the product and processes. The Project Manager will be responsible for working with the project team to define these metrics, conduct measurements, and analyze results. Metrics will include:

* Schedule- schedule at least two team meetings a week.
* Resources- ensure each team member completing their task in order for team to proceed
* Process performance
  + Test Coverage Ratio- total lines of code in being tested, and the number of lines of code all test cases currently execute.
  + Pull Request Quality- the percentage of merged vs rejected pull requests
* Product performance
  + Bugs in the system
  + Application Crash Rate- calculated by dividing how many times an application fails by how many times it is used

All metrics have been reviewed and approved by CPT-200 as well as the customer, Dynasty Cars.

|  |  |  |  |
| --- | --- | --- | --- |
| **Metric** | **Criterion or Formula** | **Frequency** | **Report** |
| Schedule | Must fit the needs of all team members | Twice a week for duration of project | QMR Phase 4 |
| Resources | 4 team members | 2 times a week | QMR Phase 4 |
| Test Coverage Ratio | A - Total lines of code in the program  B - lines of code being executed  Formula: (B divided by A) times 100 | Phase 3 and Phase 4 | 89.2% Actual at Phase 3  Review again at Phase 4 |
| Pull Request Quality | If approved by all team members, merged with master branch | Review Git Hub Daily | Generated at every request in GitHub |
| Bugs | This will depend on severity of bug | Daily | As situations occur |
| Application Crash Ratio | Optimal would be 0 | Each Phase | As situations occur |

Any member of the project team can identify quality improvements. Each recommendation will be reviewed to determine how the improvement will impact the product or processes. If an improvement is implemented the project manager will update all project documentation to include the improvement. See SOW under “Other Requirements’ for the process of Change Requests.

# Quality Requirements / Standards

***Product Quality:***

The product quality standards and requirements will be determined by the project team and Dynasty Cars’ current standards. These standards will primarily be based on the company’s documented standards for their current inventory There may be product-specific quality standards identified that are not currently part of the documented organizational standards. In this case, the quality group will review these newly identified standards and incorporate them into organizational documentation if approved. In addition, everything will be communicated to all team members/stakeholders.

Software will be measured at the end of Phase 3 and 4, we will know that the product is compliant with quality standards once the program is able to achieve everything stated in the SOW within acceptable quality control margins.

***Process Quality:***

The process quality standards and requirements will be determined by the project team and Dynasty Cars. Many of these standards are based on existing company process standards. The CPT-200 project team will work with the Dynasty Cars to establish acceptable standards and document these standards for incorporation into both organizational process documents as well as the project plan. These standards will be communicated to all project stakeholders.

# Quality Assurance

The quality assurance of the Dynasty Cars’ project focuses on the processes used in the development of the inventory management system. In order to ensure quality, an iterative quality process will be used throughout the project life cycle. The series of steps include measuring process metrics, analyzing process data, and continuously improving the processes.

The Dynasty Cars Project Manager and the project team will perform assessments at planned intervals throughout the project to ensure all processes are being correctly implemented and executed

|  |  |  |  |
| --- | --- | --- | --- |
| **Process Action** | **Guidelines** | **Process Phase** | **Assessment Interval** |
| Efficiency | Each developer reviews and comments on all code being pushed before final review. Program compiles without errors. | Phase 2,3,4 | End of each phase |
| Maintainability | System can receive and push changes in data without crashing or experiencing visual glitches. | Phase 3,4 | End of each phase |

# Quality Control

The quality control of the Dynasty Cars project focuses on acceptable standards and performance.

|  |  |  |  |
| --- | --- | --- | --- |
| **Product** | **Physical/Performance Standards** | **Quality Assessment Activities** | **Assessment Intervals** |
| Functionality | Functions of software must be appropriate and compliant with required laws and guidelines. Data is handled securely. | Group Testing of program | End of each Phase |
| Reliability | Reach full operation without failure | Group Testing of program | End of each Phase |
| Usability | Software functions are easily understood | Group Testing of program | End of each Phase |

It is imperative to the success of the project that all of the established standards are met. By doing so, the Dynasty Cars Project Team will ensure that the product achieves the high level of customer satisfaction anticipated.

**Sponsor Acceptance**

Approved by the Project Sponsor:

Heather Ryan-Digital Signature 17245 Date:

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<Project Manager/Sponsor>

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