**Project Charter Document**



**Project Name:** Machine Downtime

**Industry:** Manufacturing (Automotive Manufacturing)

**Department:** Maintenance/operation Department

**Product/Process:** Data Analysis



**Prepared By**

|  |  |
| --- | --- |
| **Document Owner(s)** | **Project/Organization Role** |
| KISHAN SINGH | Data Analyst Intern |

**Project Charter Version Control**

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| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Change Description** |
| 1.0 | 24/06/2024 | KISHAN SINGH | NDA Document created |
| 1.1 | 25/06/2024 | KISHAN SINGH | Data Analyst Check List |
| 1.2 | 26/06/2024 | KISHAN SINGH | Research Tracker |
| 1.3 | 27/06/2024 | KISHAN SINGH | Project architecture created |
| 1.4 | 28/06/2024 | KISHAN SINGH | Loading Data into SQL Server and Python |
| 1.5 | 28/06/2024 | KISHAN SINGH | Data Cleaning |
| 2.0 | 01/07/2024 | KISHAN SINGH | EDA using Python |
| 2.1 | 02/07/2024 | KISHAN SINGH | Data Visualization using matplotlib and seaborn |
| 2.2 | 05/07/2024 | KISHAN SINGH | EDA using SQL |
| 2.3 | 07/07/2024 | KISHAN SINGH | Final Insights |
| 2.4 | 09/07/2024 | KISHAN SINGH | Presentation |
| 2.5 | 10/07/2024 | KISHAN SINGH | Final Submission |

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# PROJECT CHARTER PURPOSE

The project charter defines the scope, objectives, and overall approach for the work to be completed. It is a critical element for initiating, planning, executing, controlling, and assessing the project. It should be the single point of reference on the project for project goals and objectives, scope, organization, estimates, work plan, and budget. In addition, it serves as a contract between the Project Team and the Project Sponsors, stating what will be delivered according to the budget, time constraints, risks, resources, and standards agreed upon for the project.



# PROJECT EXECUTIVE SUMMARY

* Business Problem
* Business Objective
* Business Constraint
* Success Criteria:
  + Business Success Criteria
  + Economic Success Criteria
* Data Collection: Update this section after the research is done.
* Scope: If you are doing this for any specific department of the organization then please mention the same.
* Assumptions: E.g., Data will be provided by customer, Cloud & GPU will be provided by customer
* Risks: E.g., Required data might not be available; Server connectivity might be weak, etc.
* Costs: Project cost – You can do assumptions by putting [number of hours \* number of human resources (cadre wise) \* hourly cost]
* Timeline: High level timeline of the project. E.g., Project will be for 20 to 25 days.
* Approach: Data Analytics Project Management Methodology



# PROJECT OVERVIEW



# PROJECT SCOPE

## Project Deliverables

|  |  |
| --- | --- |
| **Milestone** | **Deliverable** |
| * Identifying Constraints and design the project architecture, explore various public forums to collect relevant data, Data Preparation. | ● Deliverable 1.1—Identifying Constraints and Designing the Project Architecture.  ● Deliverable 1.2—Exploring Various Public Forums to Collect Relevant Data.  ● Deliverable 1.3—Data Preparation |
| * EDA and Descriptive Analytics | ● Deliverable 2.1—Exploratory Data Analysis (EDA) and Descriptive Analytics.  ● Deliverable 2.2—Documentation of Insights from EDA. |
| * Showcasing and Review, Final Presentation and Documentation, Handover and Knowledge Transfer (KT) | ● Deliverable 3.1—Showcase and Review of Findings with Stakeholders.  ● Deliverable 3.2—Final Presentation and Comprehensive Documentation of the Project.  ● Deliverable 3.3—Handover of Final Deliverables and Knowledge Transfer Sessions with the Client. |

## Deliverables Out of Scope

* Web Application
* Mobile App
* Cloud based deployment

## Project Duration (start date: 24/06/2024 End date: 10/07/2024)

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Milestone** | **Date Estimate** | **Deliverable(s) Included** | **Confidence Level** |
| Identifying Constraints and Designing the Project Architecture, Exploring Various Public Forums to Collect Relevant Data, Data Preparation | [24/06/2024]  -  [28/06/2024] | ● Deliverable 1.1—Identifying Constraints and Designing the Project Architecture.  ● Deliverable 1.2—Exploring Various Public Forums to Collect Relevant Data.  ● Deliverable 1.3—Data Preparation | [High] |
| EDA and Descriptive Analytics | [01/07/2024]  -  [06/07/2024] | ● Deliverable 2.1—EDA and Descriptive Analytics.  ● Deliverable 2.2—Documentation of Insights from EDA. | [High] |
| Showcasing and Review, Final Presentation and Documentation, Handover and Knowledge Transfer (KT) | [07/07/2024]  -  [10/07/2024] | ● Deliverable 3.1—Showcase and Review of Findings with Stakeholders  ● Deliverable 3.2—Final Presentation and Comprehensive Documentation of the Project.  ● Deliverable 3.3—Handover of Final Deliverables and Knowledge Transfer Sessions with the Client. | [Medium] |



# PROJECT CONDITIONS

## Project Assumptions

* Data Provision: Data required for the analysis will be provided by the client, including historical machine downtime logs, maintenance records, and other relevant data sources.
* Data Quality: The data provided will be accurate, complete, and sufficient for performing meaningful analysis.
* Resources: Necessary computational resources, such as Cloud infrastructure and GPU, will be provided by the client to support data processing and analysis tasks.
* Stakeholder Availability: Key stakeholders will be available for regular meetings, reviews, and approvals throughout the project duration.
* Access to Systems: The project team will have the necessary access to the client's systems and databases to extract, transform, and load (ETL) data.
* Tools and Software: The necessary tools and software required for data analysis, visualization, and reporting will be available and licensed for use by the project team.
* Security Compliance: All data handling and analysis will comply with relevant data security and privacy regulations, and necessary approvals for data access and processing will be granted.

## Project Issues *– Fill it as and how project progresses.*

**Priority Criteria**

1 − High-priority/critical-path issue; requires immediate follow-up and resolution.

2 − Medium-priority issue; requires follow-up before completion of next project milestone.

3 − Low-priority issue; to be resolved prior to project completion.

4 − Closed issue.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Date** | **Priority** | **Owner** | **Description** | **Status & Resolution** |
| 1 | 28/06/2024 | High | Data Analyst | Issue while importing dataset into MS SQL Server | Status: Open  Resolution: After allowing NULL values for all columns and renaming some columns |
| 5 | 5/07/2024 | Low | IT Security | Concerns about data security during analysis. | Status: Open  Resolution: Implementing enhanced security measures for data storage and access. |

## Project Risks – *Identify if there are any risks that you foresee.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Risk Area** | **Likelihood** | **Risk Owner** | **Project Impact-Mitigation Plan** |
| 1 | Data Quality | High | Data Analyst | If the data provided is incomplete or inaccurate, it will lead to incorrect analysis.  **Mitigation Plan**: Conduct an initial data quality assessment and request additional data or clarifications from the client if necessary. |
| 2 | Data Availability | Medium | Data Analyst | Required data might not be available or accessible within the project timeline.  **Mitigation Plan**: Engage with stakeholders early to secure access to data sources and identify alternative data sources if needed. |
| 3 | Technical Issues | Medium | IT Support | Issues with server connectivity could delay the project.  **Mitigation Plan**: Ensure that technical infrastructure is in place and tested before project start. Have contingency plans for technical failures. |
| 4 | Stakeholder Engagement | Medium | Project Manager | Lack of engagement from key stakeholders can lead to delays in decision-making and project progress.  **Mitigation Plan**: Schedule regular check-ins with stakeholders and keep them informed of project progress and key milestones. |
| 5 | Data Security | Low | IT Security | Ensuring the confidentiality and security of data is critical.  **Mitigation Plan**: Implement data security measures, including encryption, secure access controls, and regular security audits. |
| 6 | Resource Availability | Medium | Project Manager | Key team members or resources may not be available when needed. **Mitigation Plan**: Plan resource allocation carefully and have backup resources identified. |



# PROJECT REFERENCES – Any previous projects you have referred. If yes, please share the details.

|  |  |
| --- | --- |
| **Project** | **Description** |
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# APPROVALS

**Prepared by** KISHAN SINGH\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Manager

**Approved by** Sharat Chandra M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Sponsor

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Executive Sponsor

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Client Sponsor

