

# DA Machine Learning Project Report Guidelines

## Techolas Technologies

### Title Slide

**Project Title:** Analysis and Prediction Using Machine Learning Techniques

**Your Name:** [Your Name]

**Date:** [Date]

### Introduction

**Problem Statement:** Briefly explain the problem you're addressing.

**Importance:** Discuss the real-world importance of solving this problem.

### Dataset Overview

**Source:** Identify the source of the dataset.

**Description:** Provide a brief description of the dataset, including the number of samples and features.

### Statistics/Visualizations:

- Show basic statistics (mean, median, standard deviation, etc.).
- Include visualizations like histograms or scatter plots to understand the data distribution.

### Data Preprocessing

#### Steps Taken:

- Handling missing values.
- Encoding categorical variables.
- Normalizing/Standardizing features.

## Exploratory Data Analysis

**Insights:** Discuss the insights you've gained from exploring the data.

**Visualizations:**

- Histograms
- Box plots
- Pair plots

## Feature Selection

**Method:** Explain the feature selection method used.

**Reason:** Discuss why you chose this method and what the selected features imply.

## Model Building

**Chosen Models:**

**Example:** If you chose KNN and SVM then explain the concept at a high level, include all parameters.

- **K-Nearest Neighbors (KNN)**
  - Explain the concept at a high level.
- **Support Vector Machine (SVM)**
  - Explain the concept at a high level.

## Hyperparameter Tuning and Cross-Validation

**Concepts:** Explain the importance of hyperparameters and cross-validation.

**GridSearchCV:** Discuss how you used GridSearchCV for hyperparameter tuning.

## Model Evaluation

**Metrics:** Discuss the metrics used for evaluating your models (e.g., accuracy, confusion matrix).

**Results:** Show the results of the evaluation, including visualizations of the confusion matrix and other metrics.

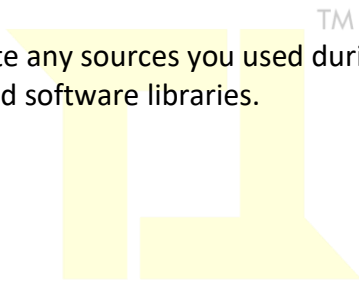
## Conclusion

**Key Findings:** Summarize the key findings from your project.

**Limitations and Improvements:** Discuss any limitations and potential improvements for future work.

## References

Cite any sources you used during your project. Include datasets, academic papers, articles, and software libraries.



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