# Model Optimization and Tuning Phase Report

| Date | 20 June 2024 |
|---|---|
| Team ID | 740665 |
| Project Title | Opticrop:Smart Agricultural Prodution Optimization Engine |
| Maximum Marks | 10 Marks |

**Model Optimization and Tuning Phase**

The Model Optimization and Tuning Phase involves refining machine learning models for peak performance. It includes optimized model code, fine-tuning hyperparameters, comparing performance metrics, and justifying the final model selection for enhanced predictive accuracy and efficiency.

**Hyperparameter Tuning Documentation (6 Marks):**

| Model | Tuned Hyperparameters | Optimal Values |
|---|---|---|
| Logistic regression, Kmeans, Randomforest regression | - | - |

**Performance Metrics Comparison Report (2 Marks):**

| Model | Optimized Metric |
|---|---|
|  |  |

| Logistic regression, Kmeans, Randomforest regression | - |
| --- | --- |

**Final Model Selection Justification (2 Marks):**

| Final Model | Reasoning |
| --- | --- |
| Random Forest regression | The Random Forest Regression model was selected for its superior performance, exhibiting high accuracy . Its ability to handle complex relationships, minimize over fitting, and optimize predictive accuracy aligns with project objectives, justifying its selection as the final model. |