Model Optimization and Tuning Phase Report

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| Date | 15 March 2024 |
| Team ID | SWTID1749835773 |
| Project Title | SmartLender - Applicant Credibility Prediction for Loan Approval |
| 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):**

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| **Model** | **Tuned Hyperparameters** | **Optimal Values** |
| Decision Tree |  |  |
| Random Forest |  |  |

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| KNN |  |  |
| XGB Boost |  |  |

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

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| **Model** | **Optimized Metric** |
| Decision Tree |  |

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| Random Forest |  |
| KNN |  |
| XGBoost |  |

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

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| --- | --- |
| **Final Model** | **Reasoning** |
| Random Forest | The random forest model is chosen for its simplicity over a complex model like XGBoost .Tuning of hyperparameters is easier, along with the speed to process clean and simple data. |