**Model Optimization and Tuning Phase Template**

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| Date | 4 July 2024 |
| Team ID | 740509 |
| Project Title | Honey price prediction based on purity |
| Maximum Marks | 10 Marks |

**Model Optimization and Tuning Phase**

The Model Optimization and Tuning Phase involves refining neural network 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** |
| Linear Regression | ------ | ------- |
| RandomForestRegressor | ----- | ------ |
| DecisionTree Regressor | ---- | ------- |

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

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

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| **Final Model** | **Reasoning** |
| Random forest Regression | Performs very well across all metrics, with high R-squared (0.9999997). It shows excellent predictive performance and generalization ability. |