**Model Optimization and Tuning Phase Template**

| Date | 10 JULY 2024 |
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| Team ID | 740118 |
| Project Title | Ecoforecast : AI-powered prediction of carbon monoxide levels |
| 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 (8 Marks):

| **Model** | **Tuned Hyperparameters** |
| --- | --- |
| Logistic Regression | - |
| Random Forest | - |
| Decision Tree | - |
| K- Nearest  Neighbors | - |

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

| **Final Model** | **Reasoning** |
| --- | --- |
| **KNN**  **(k-nearest neigbhor)** | KNN model is chosen for its robustness in handling complex datasets and its ability to mitigate overfitting while providing high predictive accuracy. |