**Model Development Phase Template**

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| Date | 08 July 2024 |
| Team ID | SWTID1720075414 |
| Project Title | Panic Disorder Detection |
| Maximum Marks | 6 Marks |

**Model Selection Report**

In the forthcoming Model Selection Report, various models will be outlined, detailing their descriptions, hyperparameters, and performance metrics, including Accuracy or F1 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

**Model Selection Report:**

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| **Model** | **Description** | **Hyperparameters** | **Performance Metric (e.g., Accuracy, F1 Score)** |
| Random Forest | This model utilises multiple decision trees to boost prediction accuracy, captures complex relationships and minimises overfitting. Also highlights key causes of panic disorder. | - | 92.6% |
| Decision Tree | Provide a clear, framework to identify critical risk factors and understand the progression of panic disorder by mapping out relationships between elements. | - | 92.5% |
| KNN | Shows the proximity of similar cases to predict panic disorder, helping us better understand individual symptoms and their triggers. | **-** | 93.7% |
| Extra Tree Classifier | Uses a collection of decision trees that are randomly generated to predict panic disorder, highlighting diverse symptom patterns and their triggers. | **-** | 92.85% |
| XGBoost | Predicts panic disorder by orderly refining predictions and finding complex relationships between symptoms and risk factors.This model is very beneficial in this project because of the scale of the dataset. | **-** | 92.47% |