

## Model Development Phase

Date	9 <sup>th</sup> July 2024
Team ID	SWTID1720017249
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:

Model	Description	Hyperparameters Used	Best Params
Gradient Boosting	Gradient Boosting model with hyperparameter tuning using GridSearchCV	n_estimators: [100, 200, 300], learning_rate: [0.01, 0.1, 0.2], max_depth: [3, 4, 5], min_samples_split: [2, 5, 10], min_samples_leaf: [1, 2, 4], subsample: [0.8, 0.9, 1.0]	{'n_estimators': value, 'learning_rate': value, 'max_depth': value, 'min_samples_split': value, 'min_samples_leaf': value, 'subsample': value}
XGBoost	XGBoost model with hyperparameter tuning using GridSearchCV	n_estimators: [100, 200, 300], learning_rate: [0.01, 0.1, 0.2], max_depth: [3, 4, 5], subsample: [0.8, 0.9, 1.0], colsample_bytree: [0.8, 0.9, 1.0], gamma: [0, 0.1, 0.2]	{'n_estimators': value, 'learning_rate': value, 'max_depth': value, 'subsample': value, 'colsample_bytree': value, 'gamma': value}
Decision Tree	Decision Tree model with hyperparameter tuning using GridSearchCV	criterion: ['gini', 'entropy'], splitter: ['best', 'random'], max_depth: [None, 10, 20, 30, 40, 50], min_samples_split: [2, 5, 10], min_samples_leaf: [1, 2, 4], max_features: [None, 'auto', 'sqrt', 'log2']	{'criterion': value, 'splitter': value, 'max_depth': value, 'min_samples_split': value, 'min_samples_leaf': value, 'max_features': value}