# Model Development Phase Template

| Date | 10 July 2024 |
|---|---|
| Team ID | 739688 |
| Project Title | Revolutionising Liver Care- Predicting Liver Cirrhosis using advanced Machine Learning |
| 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 | Performance Metric (e.g., Accuracy, F1 Score) |
|---|---|---|---|
| KNN | K-Nearest Neighbour got highest accuracy in our model | Best parameters: {'bootstrap': False, 'max_depth': 20, 'max_features': 'sqrt', 'min_samples_leaf': 1, 'min_samples_split': 10, 'n_estimators': 200} | Accuracy: 0.887719298245614 Confusion Matrix: [[ 68  21] [ 11 185]] Classification Report: precision recall f1-score support — NO 0.86 0.76 0.81 89 — YES 0.90 0.94 0.92 196 — accuracy 0.89 285 — macro avg 0.88 0.85 0.86 285 — weighted avg 0.89 0.89 0.89 285 |

| XgBoost | We have used XgBoost with best parameters | Best parameters: {'colsample_bytree': 0.8, 'learning_rate': 0.01, 'max_depth': 5, 'n_estimators': 200, 'subsample': 0.8} | Confusion Matrix: [[ 39  16] [ 10 125]] Classification Report: precision recall f1-score support  0 0.80 0.71 0.75 55  1 0.89 0.93 0.91 135  accuracy 0.86 190  macro avg 0.84 0.82 0.83 190  weighted avg 0.86 0.86 0.86 190 |
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