Models Metrics

Model Evaluation Results without hyperparameters

Models	R²	MAE	RMSE
Gradient boosting regression	0.78	21.91	46.98
k-Nearest Neighbors	-0.04	79.05	101.88
Random forest regression	0.77	22.53	47.97

Model Evaluation Results with hyperparameters

Models	R²	MAE	RMSE
Gradient boosting regression	0.78	21.79	46.92
k-Nearest Neighbors	0.77	22.68	47.78
Random forest regression	0.77	22.41	47.80

Model Evaluation Results without hyperparameters

Models	Accuracy	Precision	Recall	F1 Score
Random Forest Classifier	0.60	0.76	0.34	0.47
XGBoost Classifier	0.63	0.77	0.58	0.66
LGBM Classifier	0.61	0.78	0.52	0.63
Gradient Boosting Classifier	0.60	0.57	0.89	0.70

Model Evaluation Results with hyperparameters

Models	Accuracy	Precision	Recall	F1 Score
Random Forest Classifier	0.66	0.82	0.45	0.58
XGBoost Classifier	0.69	0.83	0.53	0.64
LGBM Classifier	0.67	0.81	0.50	0.61
Gradient Boosting Classifier	0.70	0.66	0.87	0.75