

Model Development Phase Template

Date	July 2024
Team ID	739742
Project Title	Estimating the Stock keeping units using Machine Learning
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

Paste the screenshot of the model training code

Model Validation and Evaluation Report (5 marks):

Mode 1	Summary	Training and Validation Performance Metrics
Model 1	Linear regression model typically include mean square error,R2 score to evaluate its predictive performance and generalization capability.	<h3>Linear Regression Model</h3> <pre> from sklearn.linear_model import LinearRegression from sklearn.metrics import mean_squared_error,r2_score lr=LinearRegression() lr.fit(x_train,y_train) pred=lr.predict(x_test) print("Mean Squared Error:",mean_squared_error(y_test,pred)) print("R2 Score:",r2_score(y_test,pred)) </pre> <p>Mean Squared Error: 3103.1409991414653 R2 Score: 0.05424514437673167</p>

Model 2	Random forest regression model often encompass mean square error, recall, R2 score to measure its prediction quality and robustness.	<h2>Random Forest Regressor</h2> <pre>from sklearn.ensemble import RandomForestRegressor from sklearn.metrics import mean_squared_error, r2_score model=RandomForestRegressor() model.fit(x_train,y_train) pred=model.predict(x_test) print("Mean Squared Error:",mean_squared_error(y_test,pred)) print("R2 Score:",r2_score(y_test,pred))</pre> <p>Mean Squared Error: 892.5601685747586 R2 Score: 0.7279713962082139</p>
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<p>Model 3</p>	<p>Decision tree regression model commonly include accuracy, precision, recall, R2 score which help assess the model's prediction accuracy and generalizability .</p>	<h2>Decision Tree Regressor</h2> <pre>from sklearn.tree import DecisionTreeRegressor from sklearn.metrics import accuracy_score dt=DecisionTreeRegressor() dt.fit(x_train,y_train) pred=dt.predict(x_test) print("Mean Squared Error:",mean_squared_error(y_test,pred)) print("R2 Score:",r2_score(y_test,pred)) print(accuracy_score(pred,y_test))</pre> <p>Mean Squared Error: 1610.1784215784216 R2 Score: 0.5092604361036386 0.031302031302031304</p>
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