

## Model Development Phase Template

Date	22 April 2024
Team ID	Team-738178
Project Title	Envisioning Success : Predicting University Scores With 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 Mean Squared Error or R Squared. This comprehensive report will provide insights into the chosen models and their effectiveness.

Model	Description	Hyperparameters	Performance Metric
Linear Regression	Linear regression is a simple and widely used statistical model that predicts a continuous target variable based on linear relationships with input features. It is easy to interpret and serves as a baseline model for many predictive tasks.	-	MSE = 28.92 R Squared = 0.46
Lasso Regression	Lasso regression is a linear regression model that includes a penalty for non-zero coefficients, encouraging a sparse model by setting less important coefficients to zero. It is useful for feature selection and regularization.	-	MSE = 28.89 R Squared = 0.46

SVR	SVR is a machine learning model that uses support vectors to fit a hyperplane that best predicts continuous target variables. It is particularly useful for handling complex, non-linear relationships in the data.	-	MSE = 26.88 R Squared = 0.5
Random Forest	Random Forest is an ensemble learning method that uses multiple decision trees to improve prediction accuracy. It averages the predictions of these trees to provide robust and reliable results, reducing the risk of overfitting.	Hyperparameters Used	MSE = 1.68 R Squared = 0.97
Decision Tree	Decision Tree is a model that creates a tree-like structure for decision-making by splitting data based on specific features. It is straightforward to interpret and useful for understanding how features influence predictions.	Hyperparameters Used	MSE = 3.16 R Squared = 0.94