**REGRESSION METRICS/EVALUTION METRICS/VALIDATING PARAMETER**

**It helps to understand the performance of your model and It helps to present your to model to other person.**

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| **R2** | **Adjusted R2** |
| **R2 measures how much variability in dependent variable.**  **1-(RSS/TSS]**  **TSS-Sum of squared total(Mean of the dependent variable.**  **RSS-Residual(error)sum of square..**  **Error=Actual(yi)-predicted(yi^)**  **R2 score nearly to 1(Good model)**  **R2 score nearly to 0 (poor model)** | **It derived from R2.**  **It Analyse the every addition of new input feature.**  **The purpose of Adjusted R2 tell don’t add unnecessary variable to model train.**  **1-[(1-r2)(n-1)/n-k-1)**  **n-length of the original dataset**  **k-input samples** |

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| **MSE( MeanSquaredError)** | **RMSE(RootMeanSquared Error)** |
| **Calculated by mean squared difference b/w predicted and actual value.**  **If MSE nearly to 0 means perfect which means all the prediction match the expected value.** | **It is the Extension of MSE.RMSE is the Standard deviation of the error.**  **Lower value-better model.**  **RMSE=sqrt(sum of squared differences/no.of prediction)** |

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| **MAPE (Mean Absolute Percentage Error)** | **MAE(MeanAbsoluteError)** |
| **It is the mean of absolute error b/w the Actual and predicted value.**  **It returns the Error as percentage.**  **Nearly to 0 -Good model** | **It is the Difference b/w the Actual and predicted value.**  **Value may be +ve or -ve .It forced to be positive.**  **Nearly to 0 -Good model** |

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| **model** | **R2** | **Adjusted\_R2** | **MAE** | **MSE** | **MAPE** |
| **SupportVector** | **-9.3%** | **-9.83%** | **87446.8%** | **1756414705.45%** | **104.7%** |
| **RandomForest** | **86.6%** | **86.8%** | **277827.9%** | **2124854600.63%** | **37.0%** |
| **DecisionTree** | **72.8%** | **73.05%** | **32525135.5%** | **43561830.52%** | **37.5%** |
| **MultipleLinear** | **78.65%** | **78.8%** | **410499.05%** | **3422983221.7248%** | **41%** |

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