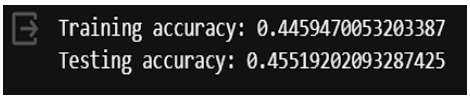
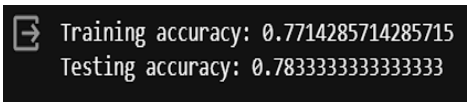
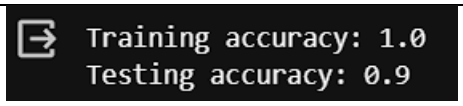
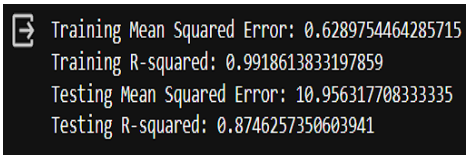
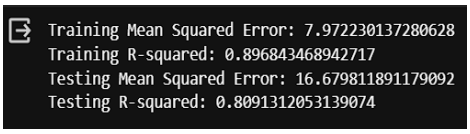
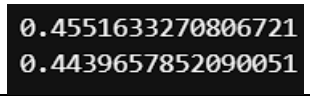
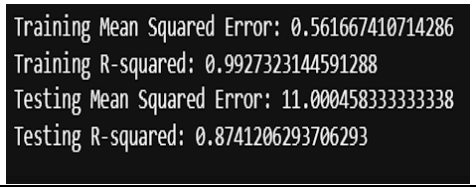
Project Development Phase
Model Performance Test

Date	08 November 2023
Team ID	592348
Project Name	Project - AI-Driven Optimization of 5G Resource Allocation for Network Efficiency
Maximum Marks	10 Marks

Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1.	Metrics	**Linear Regression Model:** Training accuracy: 0.4459470053203387 Testing accuracy: 0.45519202093287425	
		Logistic Regression Model: Training accuracy: 0.7714285714285715 Testing accuracy: 0.7833333333333333	
		Decision Tree Regression Model: Training accuracy: 1.0 Testing accuracy: 0.9	
		Random Forest Regression Model (Best of ALL Models): Training MSE: 0.6289754464285715 Training R-squared: 0.9918613833197859 Testing MSE: 10.956317708333335 Testing R-squared: 0.8746257350603941	
		Polynomial Regression Model: Training MSE: 7.972230137280628 Training R-squared: 0.896843468942717 Testing MSE: 16.679811891179092 Testing R-squared: 0.8091312053139074	
		Lasso and Ridge Regression Model: Lasso accuracy: 0.4551633270806721 Ridge accuracy: 0.4439657852090051	
2.	Tune the Model	**Hyperparameter Tuning** Using Grid Search CV on Random Forest Model. Training MSE: 0.561667410714286 Training R-squared: 0.9927323144591288 Testing MSE: 11.000458333333338 Testing R-squared: 0.8741206293706293	

		Validation – There is no greater difference between the metrics of the original model and tuned model.	**Hence the model is valid**.