**Project 1 - CHURN PREDICTION IN MOBILE TELECOM SYSTEM USING R**

**Project 2 - HOW FUEL ECONOMY GETS AFFECTED BY OTHER VARIABLES IN DATA SET**

Title - CHURN PREDICTION AND FUEL ECONOMY

**INTRODUCTION**

**PROJECT 1 -**

Customer churn occurs when customers or subscribers stop doing business with a company or service, also known as customer attrition. It is also referred to as loss of clients or customers. One industry in which churn rates are particularly useful is the telecommunications industry because most customers have multiple options from which to choose within a geographic location.

​**PROJECT 2** -

For any vehicle Fuel economy plays a vital role. So it is necessary to know which factors affect the fuel performance of any vehicle.

**OBJECTIVE**

**PROJECT 1 -**

In a business environment, the term, customer attrition simply refers to the customers leaving one business service to another. Customer churn or subscriber churn is also similar to attrition, which is the process of customers switching from one service provider to another anonymously. From a machine learning perspective, churn prediction is a supervised (i.e. labeled) problem defined as follows: Given a predefined forecast horizon, the goal is to predict the future churners over that horizon, given the data associated with each subscriber in the network

​**PROJECT 2 -**

How other variables affects the fuel economy of any vehicle

**PROPOSED METHODOLGY**

​**PROJECT 1-**

Here we are using - We will introduce Logistic Regression, Decision Tree, and Random Forest - But we will show Logistic Regression

​**PROJECT 2-**

Here we are using - We will introduce Linear Regression,

**ABOUT THE DATA**

**Data Preprocessing**

**PROJECT 1 - CHURN DATA SET**

**Each row represents a customer; each column contains that customer’s attributes:**

​**IN TOTAL THERE ARE 3333 NUMBER OF ROWS AND 21 COLUMNS**

**The data set contains numerical, integer and factor variables.**

**The response variable is "Churn", which takes on the values "0" or "1" representing if a customer will churn or not**

​**There are a total of 2850 observations with Churn = "0" and 483 observations with Churn = "1"**

**​PROJECT 2 - FUEL DATA SET**

**Each row represents a vehicle details, each column contains that vehicle attributes:**

**​IN TOTAL THERE ARE 1107 NUMBER OF ROWS AND 10 COLUMNS**

**​The data set contains numerical, integer variables.**

**​The response variable is 'FE", which is a continuous variable**

**Data Variables**

​PROJECT 1 -

1. Account.Length
2. VMail.Message
3. Day.Mins
4. Eve.Mins
5. Night.Mins
6. Intl.Mins
7. CustServ.Calls
8. Churn
9. Int.l.Plan
10. VMail.Plan
11. Day.Calls
12. Day.Charge
13. Eve.Calls
14. Eve.Charge
15. Night.Calls
16. Night.Charge
17. Intl.Calls
18. Intl.Charge
19. State
20. Area.Code
21. Phone

PROJECT 2 -​

1. EngDispl
2. NumCyl
3. FE
4. NumGears
5. TransLockup
6. TransCreeperGear
7. IntakeValvePerCyl
8. ExhaustValvesPerCyl
9. VarValveTiming
10. VarValveLift

##### Conclusion

PROJECT 1 -

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Customers will churn with above mention variables in data set - the variables are

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CustServ.Calls, Int.l.Plan, VMail.Plan

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PROJECT 2 -

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Fuel economy for vehicle will be affected by mention variables in data set

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EngDispl+NumCyl+TransLockup+VarValveTiming

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