INCREASE THE PREDICT SCOPE OF CAB RIDES BY PROVIDING INCENTIVES

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ABSTRACT:

The uber cabs current system is manual and it's time consuming. It is also cost ineffective, and average return is low and declining. The different types of soft computing techniques of data analysis are introduced to extract valuable information from the data. The goal of this project is to increase rides by giving incentives for cab drivers. This business is booming and expected to grow shortly. Effective taxi dispatching will facilitate for each driver and passenger to reduce waiting time to seek out one another. The model employed to predict the demand on points of the city.

Keywords: Providing incentives, Linear regression, Decision tree.

I. INTRODUCTION:

Cab drivers are working with app -based ride services such as Uber, Ola, etc. Cabs have seen their incentives to complete the vehicle loans and make their own deal with customers. The sudden fall has pushed the drivers into striking private deals with willing customers where rides are canceled on app, while customers continue their journey, paying the drivers agreed amount. Whether it is a short distance ride means the driver used to cancel the trip or otherwise the service has helped in numerous ways to the people and literally made a lot of complicated. Nowadays cab services are expanding with the multiplier rate and with extra commission. The use of the cab service and the flexibility gives the customers great experience with competitive prices. The flexible by comparing the two formulated programs with the objective of maximizing the system-wide profit.

II. RELATED WORKS:

The cab ride is to study predictive analysis, which is a method of analysis in machine learning. Many companies like ola, uber etc, use machine learning technologies to find the solution of accurate fare prediction problems. Which are useful for prediction modeling to get the most approximate value. Incentive will helpful for prediction modeling to get the most accurate value and who are involved in fare prediction.[1]

In the previous era, the fare was only dependent on distance, but with the enhancement in technologies the cab's fare is dependent on a lot of factors like time, location, number of passengers, traffic, number of hours, base fare, trip status etc. Due to some traffic reasons the cab drivers are unable to take trips in the peak hours especially this is the main issues around the city.[14]

The study is based on supervised learning. The one application is prediction, in machine learning. The uber datasets are performed in data analysis, they are rider data from uber. The first dataset contains information about the rides taken by one particular user, and the second contains similar details about the rides taken by users in one cites.[2]

The ride hailing is recognized as an urban transportation mode where registered public and private car owners provide on-demand rides by driving their vehicles. Modeling the fundamentals of incentives underlying from the individual rides decision, we find the incentives decreasing and increasing.[6]

A Prediction is an assumption about the future event. Prediction is sometimes, though it always is, based upon knowledge or experience. The incentives of an employee of an organization is to be predicted on the basis of previous incentives growth rate. This model can work well with a good accuracy (93.47%). [7]

From the prediction of incentives the employee can be observed according to a particular field and their experiences. It helps to see the growth of the cab ride field. It can produce a person's salary by predicting the incentives through linear regression.[3]

Ride-sharing constitutes the promising alternative to the individual motorized transport currently dominating urban cities. Recent analyses suggest that large-scale ride-sharing is specifically suited for densely populated urban areas. By combining two or more individual trips into a shared ride served by a single vehicle, ride-sharing increases the average cost per trip, reduces the total number of vehicles required and thereby mitigates congestion and environmental impacts of urban mobility.[8]

Lastly, dissatisfaction with the current rides canceling mode for short distance positively influences the cab drivers.[9] The incentives -based travels are decreasing in management services and the attention are generally considered the more public policy makers.[13]
One of the common is to predict the incentives. Almost 78% of the process is experienced. Incentives will raise the cab rides normally. Many cab drivers are canceling the rides due to short distance trips also. For the above they should not cancel any trips because if they do not take trips means the incentives will not be provided. By using the linear regression and decision tree compare the number of trips canceled and trip status. The linear regression and decision tree classifier shows the result by comparing the datasets.[4]

Although the positive approach of incentives have been successfully applied in the regression they have limited attention to transportation. The changes made in the rides account for modifications made in frequency, time saved and cost etc.[10] How to determine the incentives for cab drivers in the critical problem. This paper shows the approach of leave based incentive percentages. [12]

In addition to determining the general effectiveness of the incentives program on daily levels of carpooling, change in the behavior of individual drivers was also an important factor to consider. Linear Regression and classifier is one of the machine learning algorithms where the outcome is estimated by the use of known parameters that are associated with the output and used to predict the values within a continuous range. [5].

Customers request an hour is useful for the project to improve performance and predict the revenue generated from a driver. Our approach to this problem first to analyze and preprocess a collection of cab records. It is used to understand the features best to predict demand and incentives in a summary.[15] This regression is used to explain relationship between the one dependent variable and one or more independent variables. The owners are bored, discouraging, or something else and they move on to other things not because of decreasing the cab rides. No matter how dark it gets today, things will always happen better than tomorrow.[11]

III. METHODOLOGY:

A. PRE -PROCESSING:

When it is required to build the predictive model, to look and manipulate the data before we start modeling which has multiple pre-process steps such as to explore the data, cleaning the data as well as visualizing the data through plots.

B. LINEAR REGRESSION:

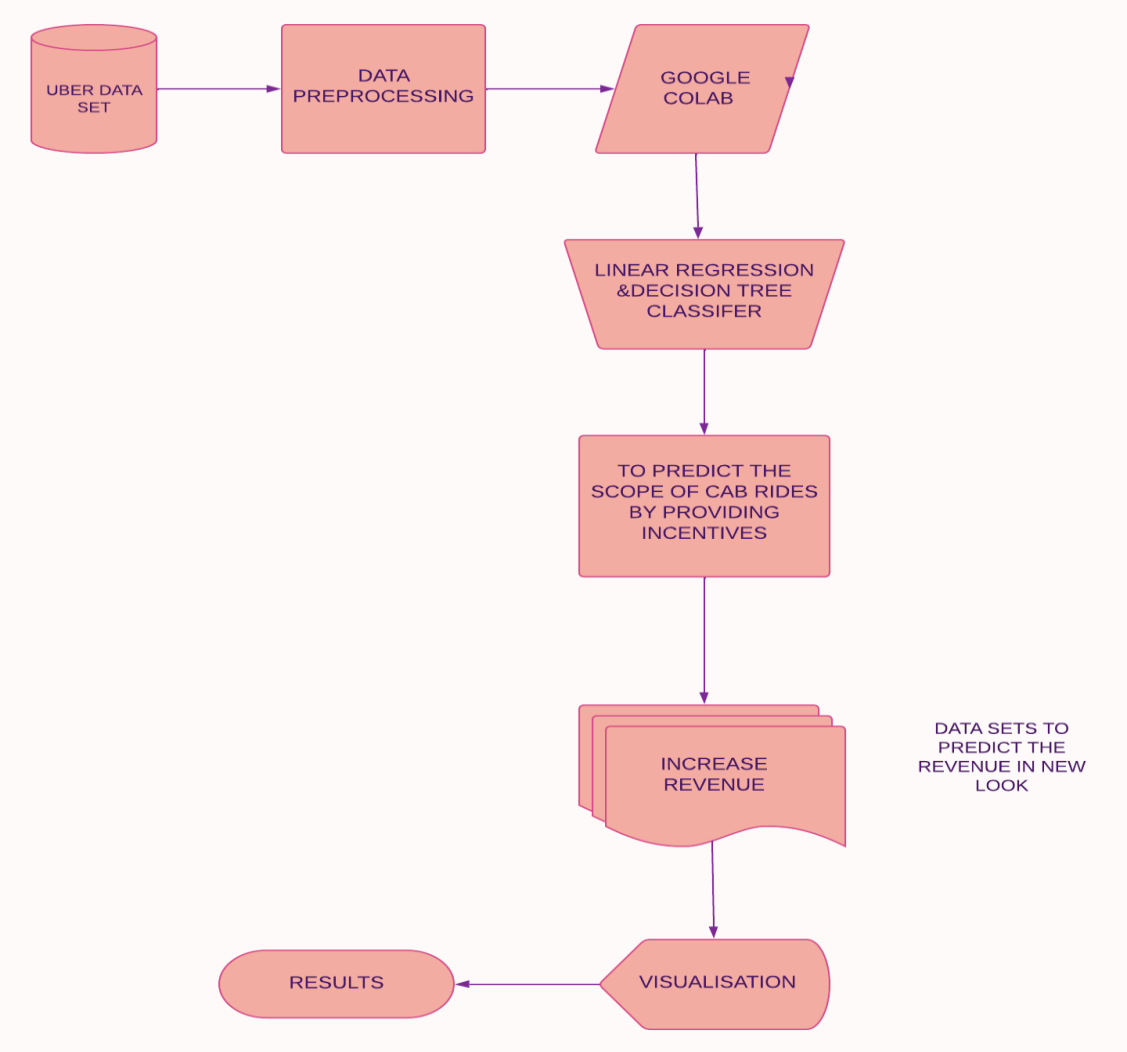
This supervised learning method gives the probability of a given value. Linear regression uses fairly common machine learning algorithms that predict accurate outcomes. Linear regression uses a classification algorithm, used when the target variable is in nature.

STEP 1: Generate the dataset from the downloaded packages that have been taken.
STEP 2: Splinter the dataset into a test and training dataset. Training set – used to train the data model. Testing dataset – describes the evaluation of the models.
STEP3: The points corresponding to the number of passengers and trip status have been plotted in the graph. The dataset is initialized in pandas (ascending, descending, mixed-up). Taking the dataset from each pandas field and from the pandas dataset we are plotting the points on the graph as per number wise or input wise that came from the real dataset.
STEP 4: After that we are using a linear regression to draw lines between the points. Through the clustering points we can make a smooth and curved path.
STEP 5: After the linear regression through the x-y axis we can predict the trip report by the status. Visualization gives a better scope of the interactivity to convey a better understanding of the dataset.
STEP 6: Also, we predict a person's incentives based on the cab rides as per the graph. Define the prediction value using linear regression.

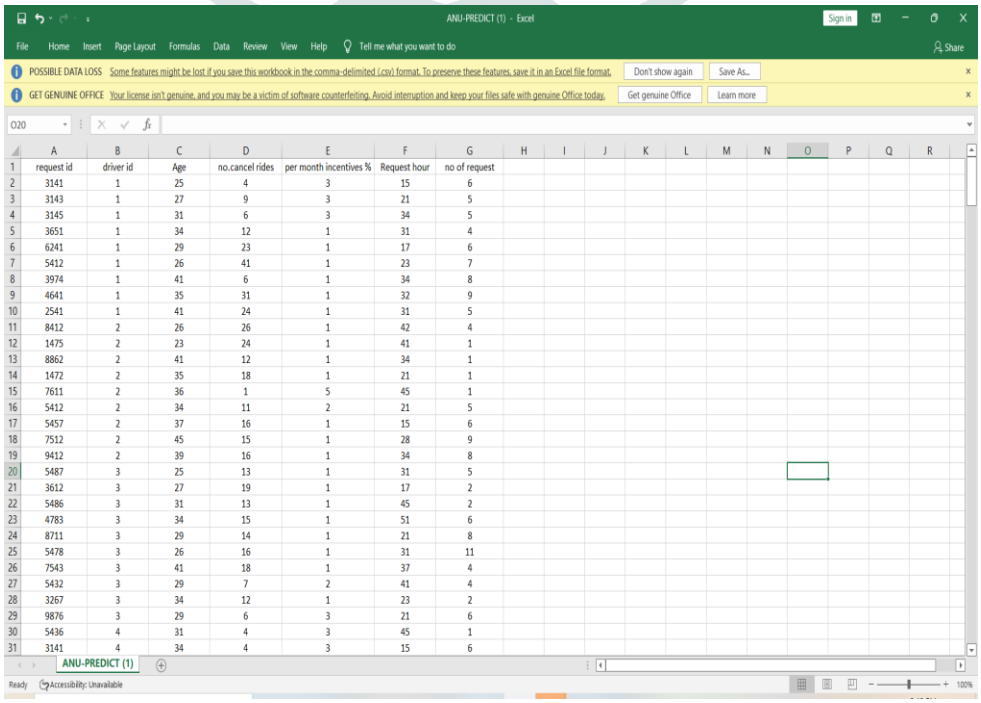
C.DECISION TREE CLASSIFIER:

Decision tree algorithms are one of the most powerful methods commonly used in various fields such as machine learning. to split the attributes in the test and train to determine the splitting is “best” in the individual classes. The result of each line is as pure as possible for the splitting criteria to be identical in the method.and the result shown in statistical values.

IV. FLOW CHART:



V. RESULT:



ANU-PREDICT (1) - Excel

request id	driver id	Age	no.cancel rides	per month incentives %	Request hour	no of request
3141	1	25	4	3	15	6
3143	1	27	9	3	21	5
3145	1	31	6	3	34	5
3651	1	34	12	1	31	4
6241	1	29	23	1	17	6
5412	1	26	41	1	23	7
3974	1	41	6	1	34	8
4641	1	35	31	1	32	9
2541	1	41	24	1	31	5
8412	2	26	26	1	42	4
1475	2	23	24	1	41	1
8862	2	41	12	1	34	1
1472	2	35	18	1	21	1
7611	2	36	1	5	45	1
5412	2	34	11	2	21	5
5457	2	37	16	1	15	6
7512	2	45	15	1	28	9
9412	2	39	16	1	34	8
5487	3	25	13	1	31	5
3612	3	27	19	1	17	2
5486	3	31	13	1	45	2
4783	3	34	15	1	51	6
8711	3	29	14	1	21	8
5478	3	26	16	1	31	11
7543	3	41	18	1	37	4
5432	3	29	7	2	41	4
3267	3	34	12	1	23	2
9876	3	29	6	3	21	6
5436	4	31	4	3	45	1
3141	4	34	4	3	15	6

FIG.1

The above mentioned table shows the datasets of linear regression and decision tree classifier algorithm. There are different attributes like request id, driver id, age, number of cancels, per month incentives%, request hour and no of request. this is faster algorithm which helps to predict and analyze the required solution in faster way. This is the result of the respected algorithm.

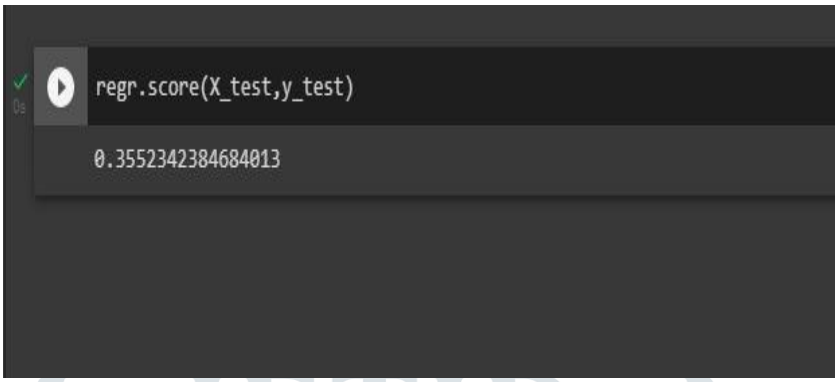


FIG.2

The above mentioned figure is visualized to compare the output value. It compares the no of cancel rides, request hour and number of per month incentives are tested. It helps to predict and analyze in linear regression the result is very easy because it represents the value in positive to understandable manner.

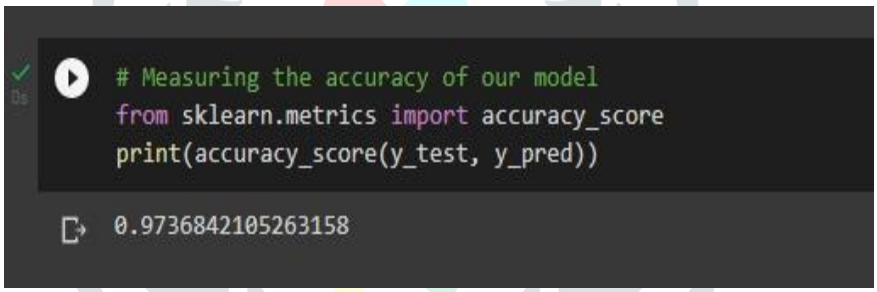


FIG.3

The above mentioned figure shows the value of the decision tree classifier and the attributes are request id, driver id, number of canceled rides and number of incentives per month. Instead of shown in the chart, I used to show the accuracy rate increase level in the incentives for the particular month.

VI. CONCLUSION AND FURTHER WORK

In this paper, dataset incorporation, importing packages and visualizations are performed in the jupyter notebook. Linear regression and decision tree classifier is used to predict the incentives for cab drivers without canceling the rides. By comparing the datasets it gives positive values. Many cab drivers are canceling the rides due to short distance trips also. For the incentives, when they should not cancel any trips because if they do not take trips means the incentives will not be provided. Automatically Incentives will raise the cab rides normally increases.

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