**Synopsis**

**Customer Churn Prediction**

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* Churn prediction is also called as customer attrition is supervised learning because, in churn prediction all the data should to labeled in order to make the correct decision to retain the customers which is widely used in telecommunication industries, medical fields, banking sectors etc.
* All these big companies are struggling hard to predict when customers will unsubscribe their service which will adversely affect their companies revenue.
* The main objective of our project is to predict which customers are likely to leave a service or to cancel a subscription to a service.
* Prediction models are utilized to predict clients who are probably going to churn in the future.
* It is a critical prediction for many businesses because acquiring new clients often costs more than retaining existing ones.
* We are using a number of machine learning algorithms to predict which includes Random forest classifier,decision trees,linear regression,PCA etc.
* The prediction model is used to find in advance the behavior of the customer.
* Here we will be including only the valuable data from the given dataset by removing NULL values and other unwanted values to increase performance of the model.
* We are majorly using the module called *sklearn. We are also* calculating confusion matrix which includes calculating precision(specificity), recall(sensitivity) etc. We are also going to find accuracy and optimise our model.
* We have also shown graphical representation of our results.