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What is “churn” ??

* When choosing a telecommunication service provider, customers usually have many choices. They can choose any service provider and may move away from the current provider. The percentage of customers moving out and disconnecting the service is known as “churn”.
* It is very important to reduce churn for business growth and customer retention. If the churn is high, the business will continually be in search of new customers without a stable customer base.
* The performance of the business will be very unpredictable. Businesses try to keep the customers satisfied, to retain them as long as possible.
* However, in the real world, the customer churn can be as high as 25% annually in the telecommunication industry. Also, the cost of acquiring a new customer is 10 times more than the cost to retain an existing customer. This poses a serious challenge to business owners.

Describing the attributes

Text

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Chart, scatter chart

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1)**satisfaction\_level** **🡪** It is employee satisfaction point, which ranges from 0-1.  
2)**last\_evaluation** **🡪** It is evaluated performance by the employer, which also ranges from 0-1.  
3)**number\_projects** **🡪** How many numbers of projects assigned to an employee?   
4)**average\_monthly\_hours** **🡪** How many average numbers of hours worked by an employee in a month?  
5)**time\_spent\_company** **🡪** time\_spent\_company means employee experience. The number of years spent by an employee in the company.  
6)**work\_accident 🡪** Whether an employee has had a work accident or not.  
7)**promotion\_last\_5years 🡪** Whether an employee has had a promotion in the last 5 years or not.  
8)**Departments** **🡪** Employee's working department/division.  
9)**Salary** **🡪** Salary level of the employee such as low, medium and high.  
10)**left** **🡪**Whether the employee has left the company or not.

Text

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Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Chart

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

# **References:**

<https://medium.com/data-science-on-customer-churn-data/unsupervised-learning-using-kmeans-clustering-629b26e1ce1e>