

Customer-Churn-Analysis-in-Telecom-Segment:

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1. Find the average Churn?

0.14491449144914492

14.5% is actually quite bad for a company; such a churn rate can make the company go bankrupt.

2. What are average values of numerical features for churned users?

account length	102.664596
area code	437.817805
number vmail messages	5.115942
total day minutes	206.914079
total day calls	101.335404
total day charge	35.175921
total eve minutes	212.410145
total eve calls	100.561077
total eve charge	18.054969
total night minutes	205.231677
total night calls	100.399586
total night charge	9.235528
total intl minutes	10.700000
total intl calls	4.163561
total intl charge	2.889545
customer service calls	2.229814
churn	1.000000

3. How much time (on average) do churned users spend on the phone during daytime?

Total evening minute: 212.41014492753618

Total evening calls: 100.56107660455487

Total night calls: 100.39958592132506

4. What is the maximum and minimum length of international calls among loyal users (Churn == 0)?

Minimum International minutes with no International plan - 0.0

Minimum International minutes with International plan - 1.3

Maximum International minutes with no International plan - 18.9

Maximum International minutes with International plan - 13.0

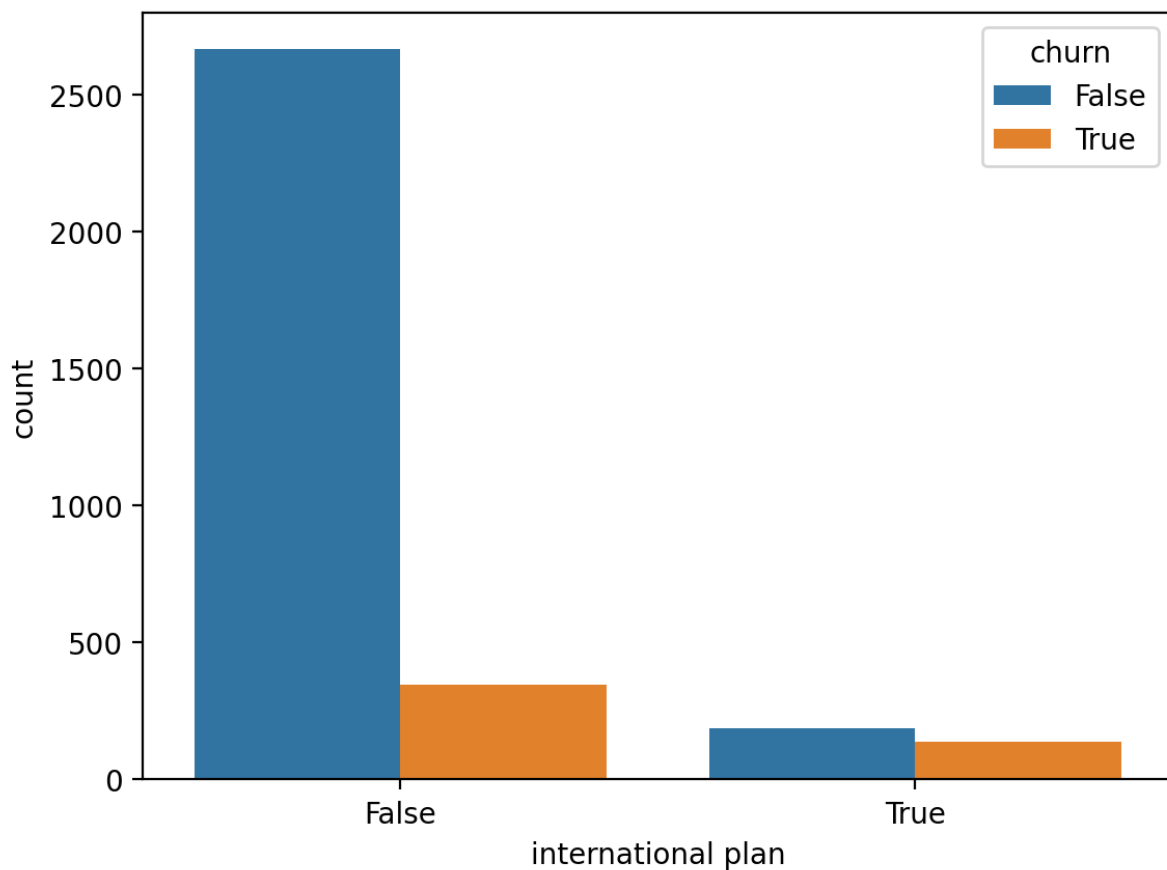
Average International minutes with no International plan - 9.777956989247318

Average International minutes with International plan - 10.185472972972955

5. Who does not have an international plan?

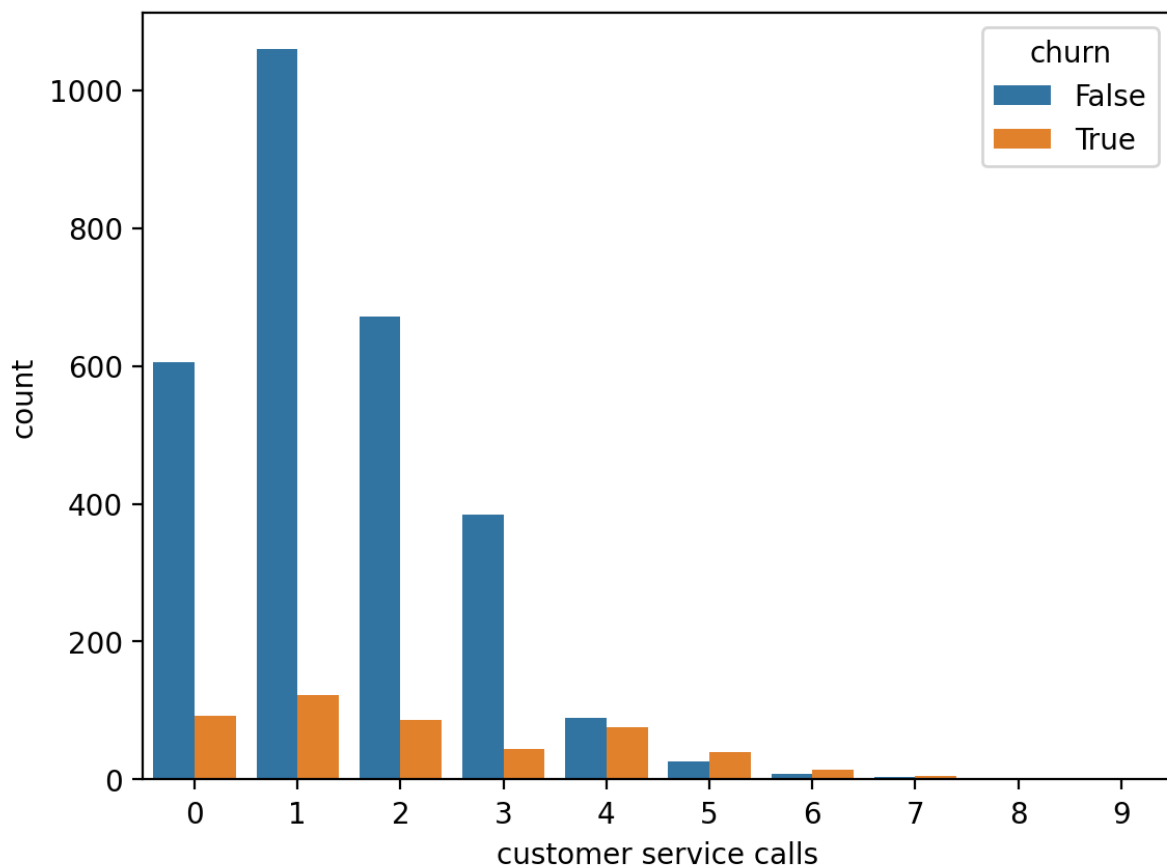
One active customer with the phone number - 400-4344, does not have any International Plan.

6. Find the insights about churn rate over International Plan?



We see that, with the International Plan, the churn rate is much higher, which is an interesting observation! Perhaps large and poorly controlled expenses with international calls are very conflict-prone and lead to dissatisfaction among the telecom operator's customers.

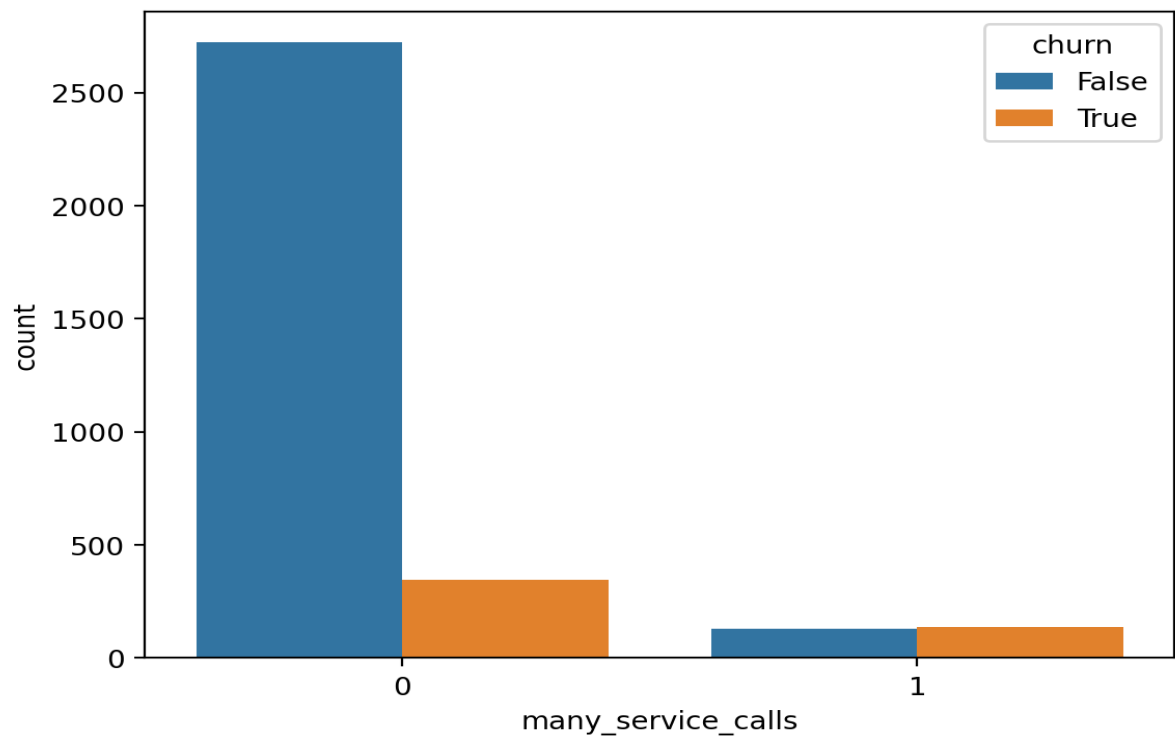
7. Find the insights about churn rate with customer service calls?



Although it's not so obvious from the summary table, it's easy to see from the above plot that the churn rate increases sharply from 4 customer service calls and above.

8. Find the insights about churn rate with Many_service_calls?

We added a binary feature to our DataFrame – Customer service calls > 3, called Many_service_calls.



9. Find the insights about churn rate with customer service calls & Many_service_calls?

```
churn  False  True
row_0
False  2841   464
True   9      19
```