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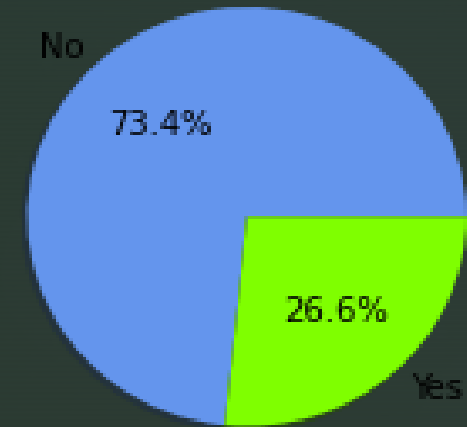
# Customer Churning Risk Analysis



# Objective: Risk Analysis

- ❑ Individual feature patterns and relationship with Churning
- ❑ Know customers well
- ❑ Customer Segmentation
- ❑ Summary
- ❑ Recommendations

Churn Distribution



# Distributions and Churning Percentage

## Customer Demography

Gender (%)		Senior Citizen (%)		Dependents (%)		Partner (%)	
Female	Male	Yes	No	Yes	No	Yes	No
26.95	26.20	41.68	23.65	15.53	31.27	19.71	32.97
Total Distribution Count (sum)							
3483	3549	1142	5890	2099	4933	3393	3639

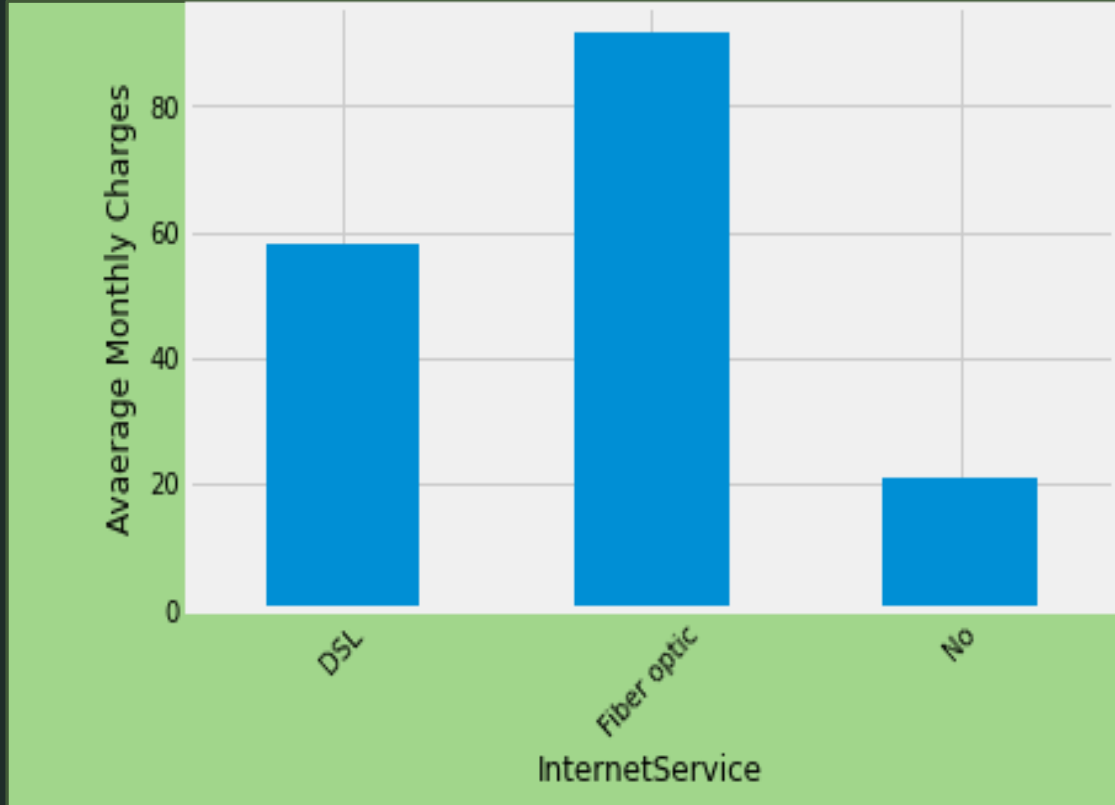
## Account

Contract (%)			Paperless Billing (%)		Payment Method (%)			
Month-To-Month	Two-Year	One-Year	Yes	No	Electronic Check	Mailed Check	Auto Bank Transfer	Auto Credit Card
42.70	2.8	11.27	33.58	16.37	45.28	19.20	16.73	15.25
Total Distribution Count (sum)								
3875	1685	1472	4168	2864	2365	1604	1542	1521

## Services

Multiple-Lines(%)			Phone Service (%)		Steaming TV (%)			Streaming Movies(%)		
No	Yes	No Phone Service	Yes	No	No	Yes	No Internet Service	No	Yes	No Internet Service
25.08	28.64	25.00	26.74	25.0	33.53	30.11	7.43	33.72	29.95	7.43
Total Distribution Count (sum)										
3385	2967	680	6352	680	2809	2703	1520	2781	2731	1520

Internet Service(%)			Online Security (%)			Device Protection (%)			Tech Support (%)		
DSL	Fiber Optic	No	No	Yes	No Internet Service	No	Yes	No Internet Service	No	Yes	No Internet Service
18.9	41.89	7.43	41.77	14.64	7.43	39.14	22.53	7.43	41.64	15.19	7.43
Total Distribution Count (sum)											
2416	3096	1520	3497	3497	1520	3094	2418	1520	3472	2040	1520



Customers who have Fiber  
Optic internet service have  
an average of > 90 USD  
Monthly Charges

## Billing Payment

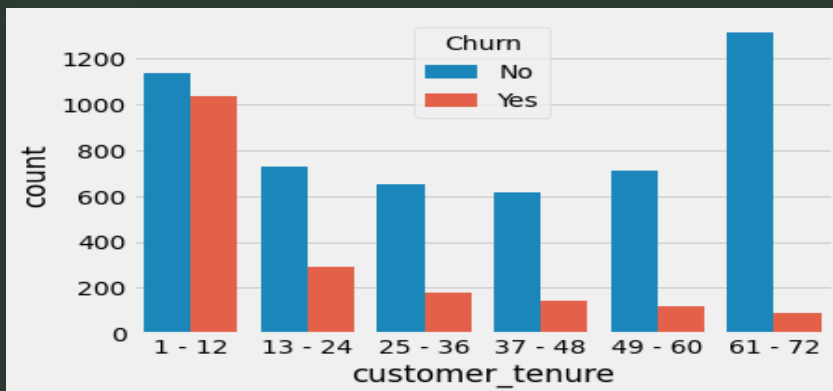
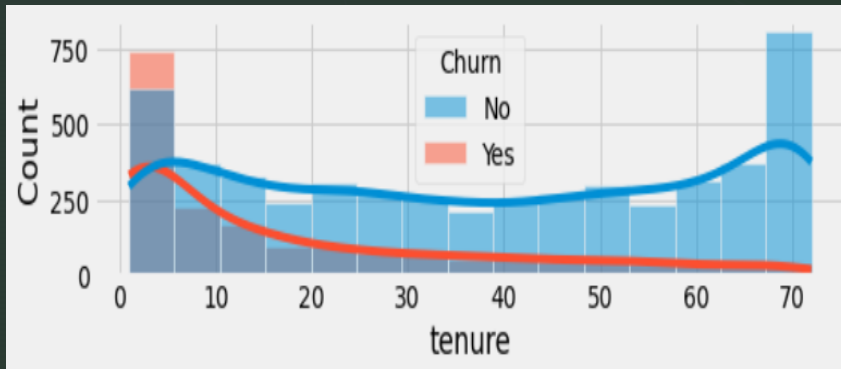
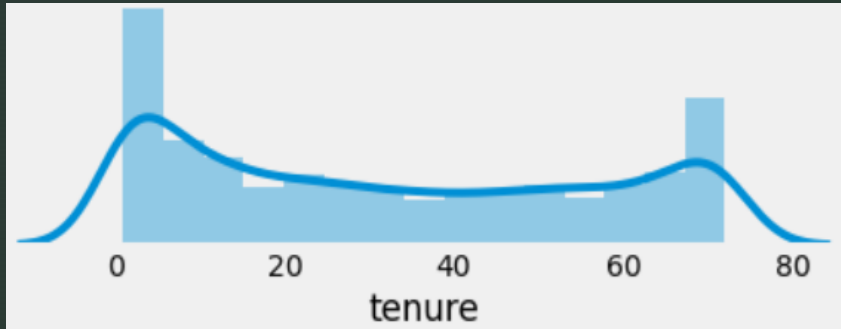


- Average monthly charges is 64.79, whereas 75% of the customer pay more than average which is 89.86
- Average Total charges is 2283, whereas 75% of the customers pay more than average which is 3794

## Descriptive Statistics

	tenure	MonthlyCharges	TotalCharges
count	7032.000000	7032.000000	7032.000000
mean	32.421786	64.798208	2283.300441
std	24.545260	30.085974	2266.771362
min	1.000000	18.250000	18.800000
25%	9.000000	35.587500	401.450000
50%	29.000000	70.350000	1397.475000
75%	55.000000	89.862500	3794.737500
max	72.000000	118.750000	8684.800000

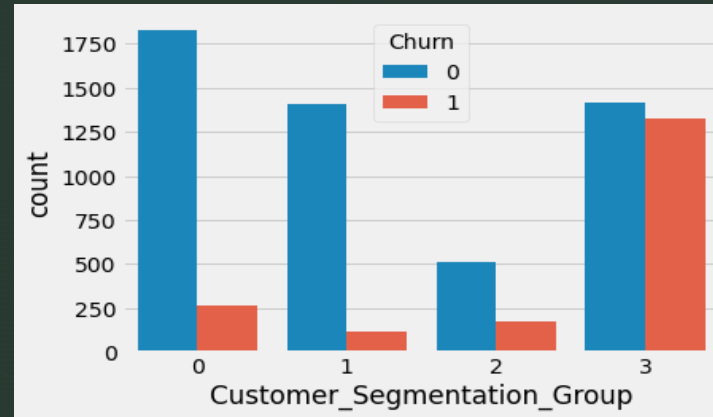
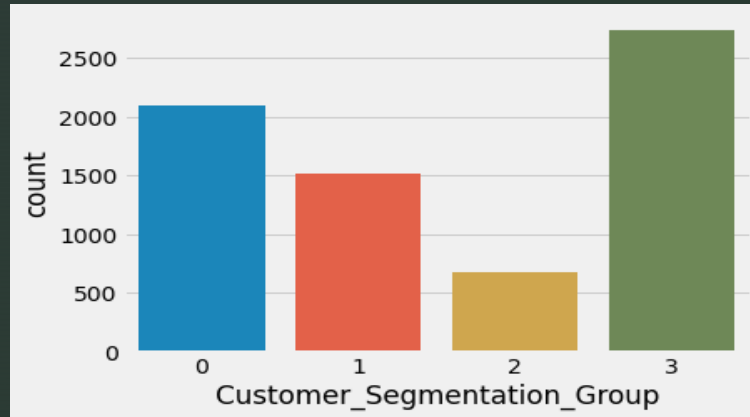
# Customer Loyalty Check



- **Loyal Customers:** Customers having 61-72 months of tenures and have a lower churning rate.
- New customers have the highest churning rate.
- When tenure increases, the churning rate decreases.



# Customer Segmentation



Segment-0: They are the longest-staying people who pay more, highest revenue, and have taken all the services

Segment-1: They are the only phone service subscribers; with no added service and the lowest revenue from this group

Segment-2: They use DSL internet service more, no phone service, and 60% with no other internet services, but still pay more

Segment-3: They are the new customers who pay more, have high monthly contracts, fewer added services, use Fiber optics internet and electronic check payment



# Segmentation Patterns

Group-0:	Group-1:	Group-2:	Group-3:
<u>10% Churning rate</u> Monthly charges: 91. Total Charges : 5069 avg. 30%: no partner 60%: no dependent  50%: 61-72 months of tenure <i>40%: 1-2-year contract each</i> 60%: Fiber-Optic internet 60-70%: each internet related services All with phone service 70%: multi-line service	<u>10% Churning rate</u> Monthly charges: 21 avg. Total Charges: 665 avg. 50%: no partner 60%: no dependent  30%: 1-12 months tenure, 20%: 61-72 <i>40%: 2-year contract</i> <i>No Internet Service</i> All with phone service 20%: multi-line service 50% mailed check	<u>20% Churning rate</u> Monthly charges: 42 avg. Total Charges: 1500 avg. 50%: no partner 70%: no dependent  30%: 1-12 months tenure, 20%: 61-72 <i>60%: Month-Month Contract</i> <i>All DSL internet users</i> 60%: No services related to the Internet No phone service 30% Electronic check	<u>50% Churning rate</u> Monthly charges: 74 avg. Total Charges: 1246 avg. 70%: no partner 80%: no dependent  50%: 1-12 months tenure <i>90%:Month-Month Contract</i> 70%: Fiber-Optic internet 70-80%: No services related to the Internet All with phone service 40%: multi-line service 50% Electronic check

# Summary

## Churning Drivers:

- New customers approx. 1-12 months
- month-month payment contracts
- payment method of Electronic check
- Internet service of "Fiber Optic"
- No online security
- No device protection
- No tech support
- More Monthly charges

## Who are Your Users (the highest distributions):

- Male customers
- Younger age group
- No partners
- No dependents

# Recommendations to reduce churning

- Focus on new customers more, because their churning rate is high.
- Enhance the reliability of internet services and price optimization for Fiber optic users. The churning rate is high for this service (41.8%), indicating customers are attracted to this service but are not happy after subscribing. People who use Fiber Optic seem to have more average monthly charges.
- Give offers for Online Security, Backup, Device protection, and Tech Support.
- Another internet service is DSL (DSL has fewer users and a churning rate of only 18%). It means the service is good, but due to an older type of service, people are not interested in buying. So, combine DSL with another service from above and make the second one free for 3-6 months.
- Price optimization for Monthly Charges, especially having a contract month-to-month.
- Need more investigation on why customers who use Electronic check payment have a 45% churning rate. These customers mostly belong to segmentation group 3.