




```

29  -- Data Quality checks
30  -- 1.1 Checking for totals & missing values
31
32 • select count(*) as total_rows,
33         sum(case when totalCharges is null then 1 else 0 end) as totalCharges_null,
34         sum(case when monthlyCharges is null then 1 else 0 end) as monthlyCharges_null
35 from Customers;
36

```

Result Grid   Filter Rows: Export:  Wrap Cell Content: 

	total_rows	totalCharges_null	monthlyCharges_null
▶	7032	0	0

```
37 -- 1.2 Checking for Duplicates
38
39 • select customerID, count(*)
40 from customers
41 group by customerID
42 having count(*) > 1;
43
```

Result Grid



Filter Rows:

Export:



Wrap

	customerID	count(*)
--	------------	----------

```

44  -- 1. Initial Data Exploration & Churn Rate
45  -- 1.1 Calculate Overall Churn Rate (Aggregate Function)
46
47 •  select count(customerID) as total_customers,
48         sum(case when churn = "Yes" then 1 else 0 end) as total_churned,
49         avg(case when churn = "Yes" then 1 else 0 end) as overall_churn_rate
50  from customers;

```




Result Grid   Filter Rows: Export:  Wrap Cell Content: 

	total_customers	total_churned	overall_churn_rate
▶	7032	1869	0.2658

```

52  -- 2. Analyzing Churn by Demographics and Services
53  -- 2.1 Churn Rate by Internet Service Type (GROUP BY, ORDER BY, Aggregate Function)
54
55  • select internetService,
56         count(customerID) as total_customers,
57         avg(case when churn = 'Yes' then 1 else 0 end) as churn_rate
58  from customers
59  group by internetService
60  order by churn_rate DESC;
61

```




Result Grid |  Filter Rows: | Export:  | Wrap Cell Content: 

	internetService	total_customers	churn_rate
▶	Fiber optic	3096	0.4189
	DSL	2416	0.1900
	No	1520	0.0743

```

62  -- 2.2 Churn Rate by Contract Type (GROUP BY, ORDER BY, Aggregate Function)
63
64  • select contract,
65         count(customerID) as total_customers,
66         avg(case when churn = 'Yes' then 1 else 0 end) as churn_rate
67  from customers
68  group by contract
69  order by churn_rate DESC;

```





Result Grid |   Filter Rows: | Export:  | Wrap Cell Content: 

contract	total_customers	churn_rate
Month-to-month	3875	0.4271
One year	1472	0.1128
Two year	1685	0.0285

```


71 -- 3. Investigating Tenure and Monthly Charges (WHERE, SUM, AVG)
72 -- 3.1 Average Tenure and Charges for Churned vs. Retained Customers (WHERE, AVG)
73
74 • select churn,
75       avg(tenure) as avg_tenure,
76       avg(monthlyCharges) as avg_monthly_charges,
77       avg(totalCharges) as avg_total_charges
78 from customers
79 group by churn;

```

Result Grid   Filter Rows: Export:  Wrap Cell Content: 

churn	avg_tenure	avg_monthly_charges	avg_total_charges
No	37.6500	61.307408	2555.344141
Yes	17.9791	74.441332	1531.796094

```
81  -- 3.2 High-Value, Short-Term Churners (WHERE, Subquery/Conditional Logic)
82
83 • select count(customerID) as high_value_short_term_churners
84    from customers
85   where churn = 'Yes' and tenure < 12 and monthlyCharges > 80;
86
```

Result Grid |   Filter Rows: | Export:  | Wrap Cell Content: 

	high_value_short_term_churners
▶	321

customer_churn_prediction

Tables

customers

Views

churned_customers_view

- customerID
- gender
- seniorCitizen
- partner
- dependents
- tenure
- phoneService
- multipleLines
- internetService
- onlineSecurity
- onlineBackup
- deviceProtection
- techSupport
- streamingTV
- streamingMovies
- contract
- paperlessBilling
- paymentMethod
- monthlyCharges
- totalCharges
- churn

```
09
90 -- To simplify subsequent queries and analysis, we'll create a view focusing on the churn segment.
91
92 • create view Churned_Customers_View as
93 select
94     customerID, gender, seniorCitizen, partner, dependents, tenure, phoneService, multipleLines,
95     internetService, onlineSecurity, onlineBackup, deviceProtection, techSupport, streamingTV,
96     streamingMovies, contract, paperlessBilling, paymentMethod , monthlyCharges, totalCharges, churn
97 from customers
98 where churn = 'Yes';
99
100
101
102
103
104
105
```