**Final Project**

| **Project Title** | Predicting Customer Churn in Telecom Industry using Power BI or Tableau and SQL |
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| **Skills take away From This Project** | **Power BI, Tableau and SQL** |
| **Domain** | **Telecom** |

**Problem Statement:**

### Predicting Customer Churn in Telecom Industry

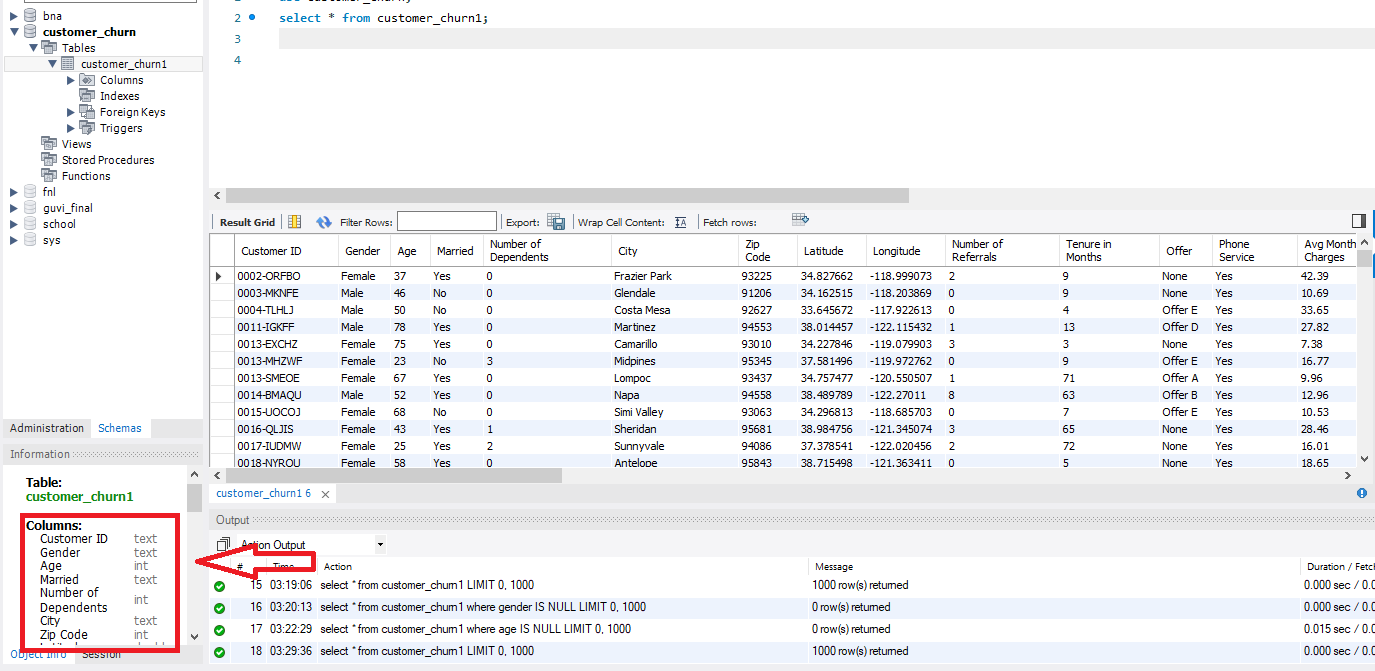
### **Business Use Cases:**

1. **Customer Retention**: Identify at-risk customers and proactively implement retention strategies.
2. **Marketing Campaigns**: Tailor marketing efforts towards customers who are more likely to churn.
3. **Service Improvement**: Analyze churn patterns to improve service offerings and customer support.
4. **Revenue Optimization**: Reduce churn rates to maintain a steady revenue stream.

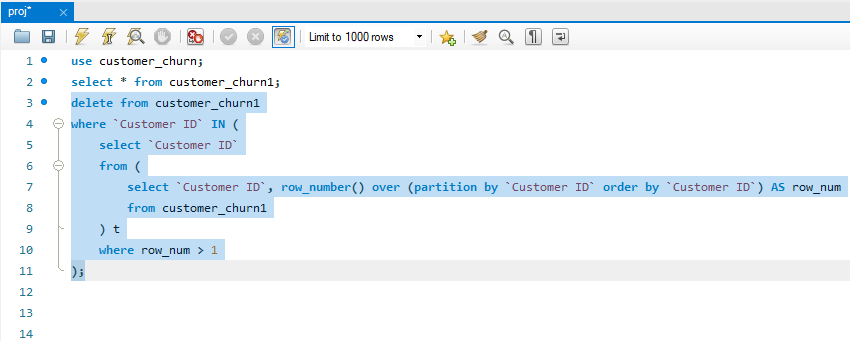
**Customer Segmentation**: Segment customers based on churn probability to offer personalized experiences.

**1. Data Preprocessing Documentation**

**1.1 Checking Data type of each column**

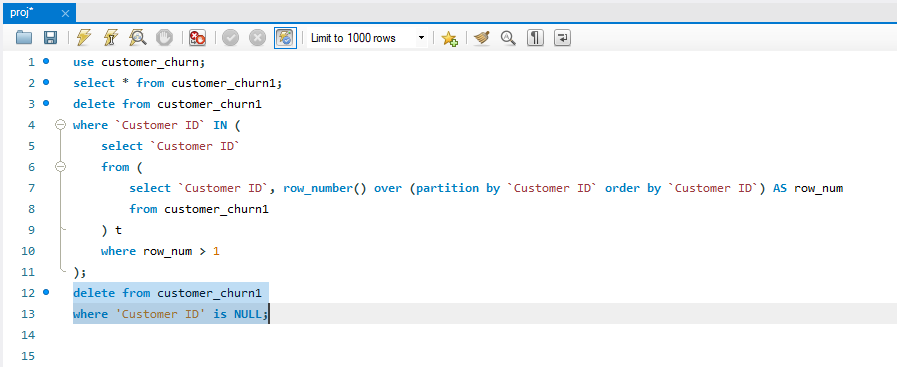


**1.2 Remove any duplicate entry in customer id**

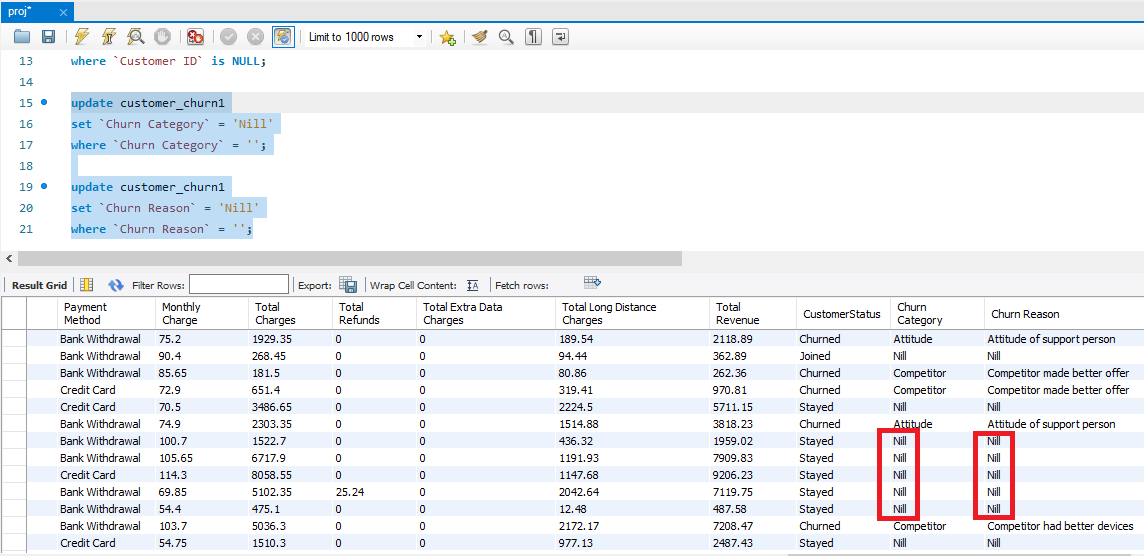


1.3 **Missing Values**

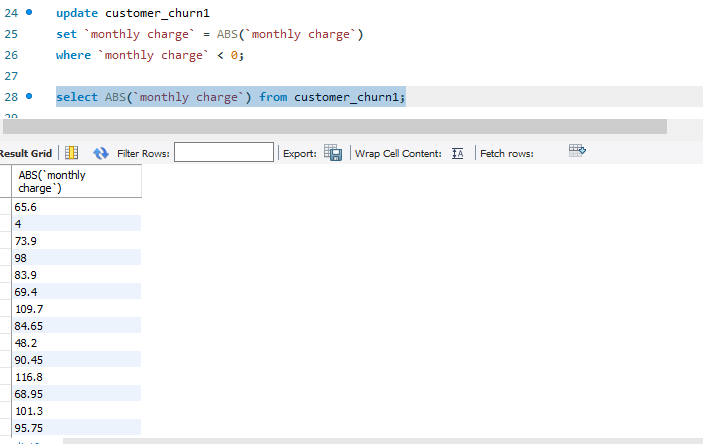
1. Delete NULL value from Customer ID



2. Update “NILL” for blank cells churn category, churn reason



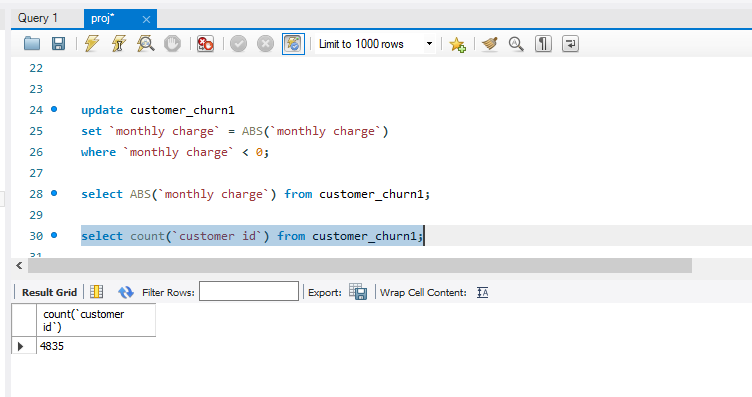
**1.4 Negative values in Monthly charge, monthly charge should not be negative, change it to positive value.**

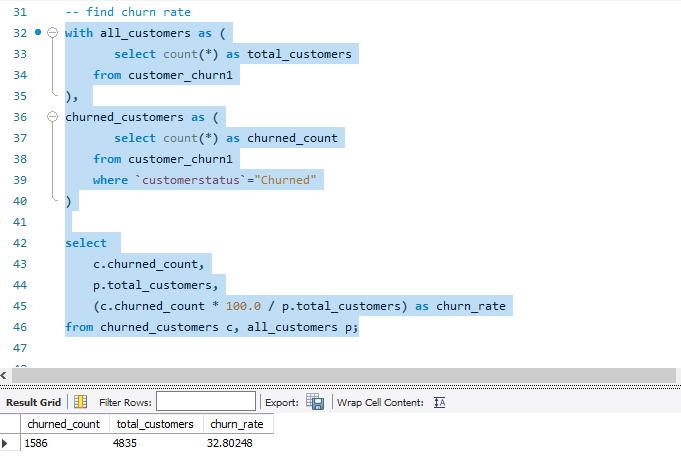


**Reports: Question & Answer**

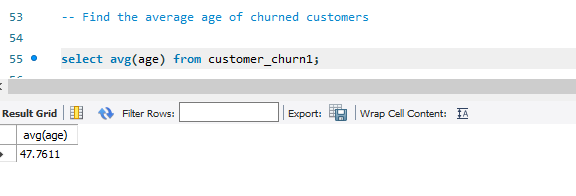
**Ques1.** Identify the total number of customers and the churn rate

Count total number of customers

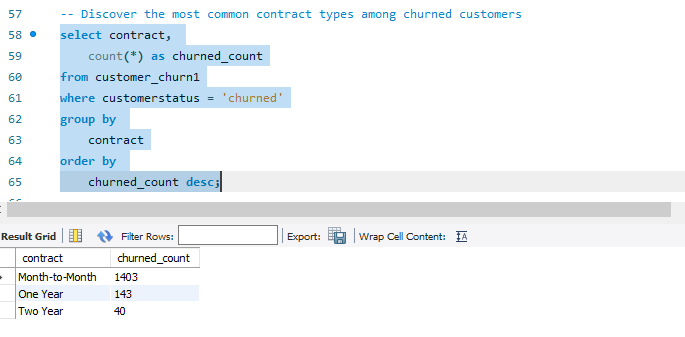


Find the Churn rate

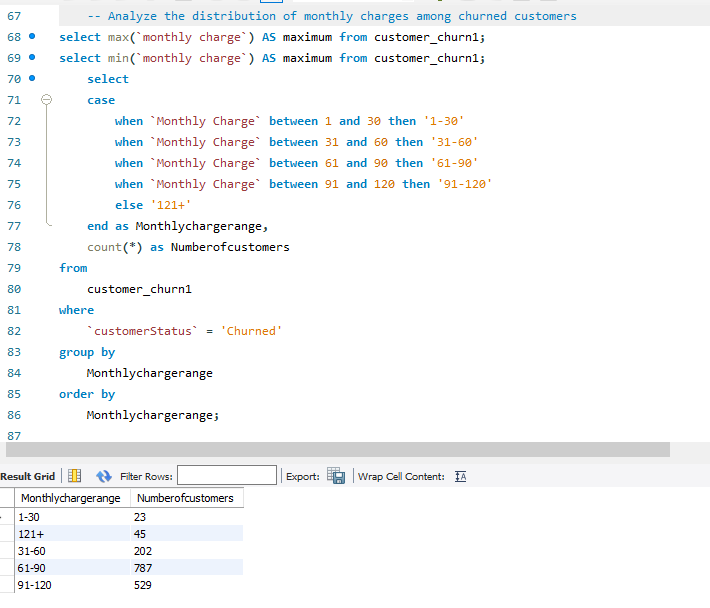
**Ques2. Find the average age of churned customers**



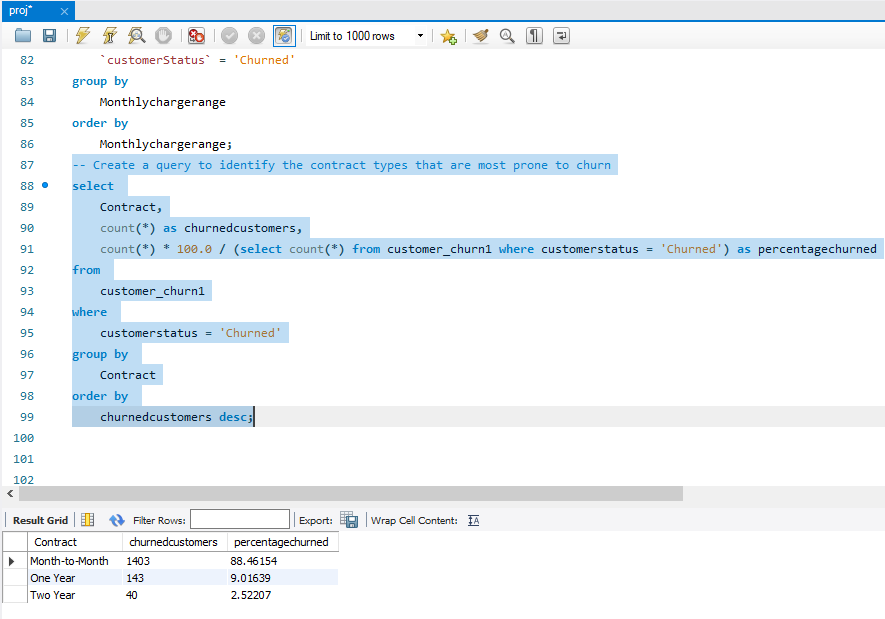
**Ques3.** Discover the most common contract types among churned customers



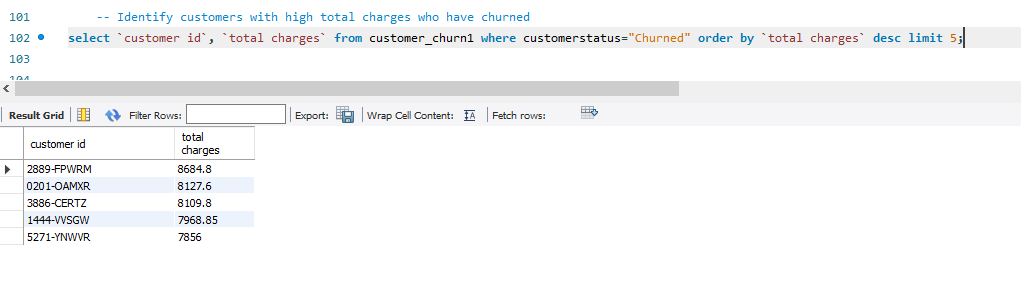
**Ques4.** Analyze the distribution of monthly charges among churned customers



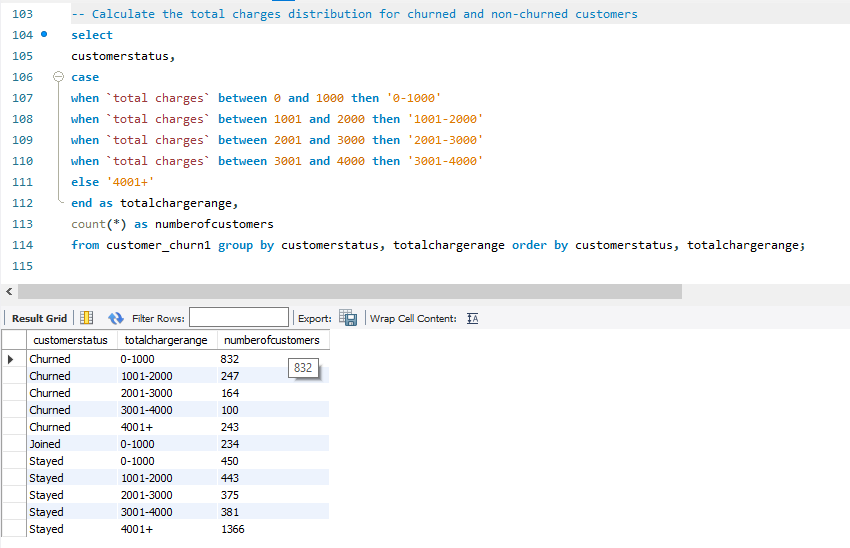
**Ques5.** Create a query to identify the contract types that are most prone to churn



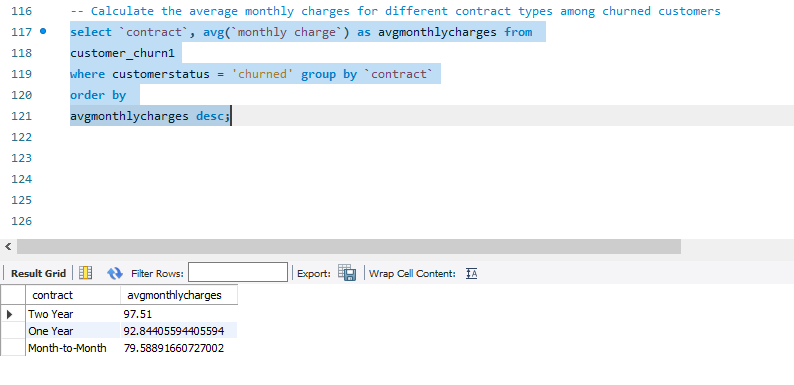
**Ques6.** Identify customers with high total charges who have churned



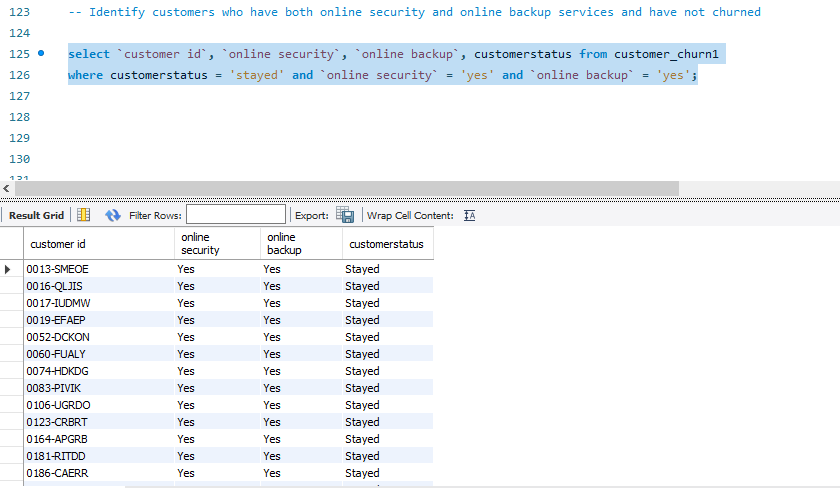
**Ques7.** Calculate the total charges distribution for churned and non-churned customers



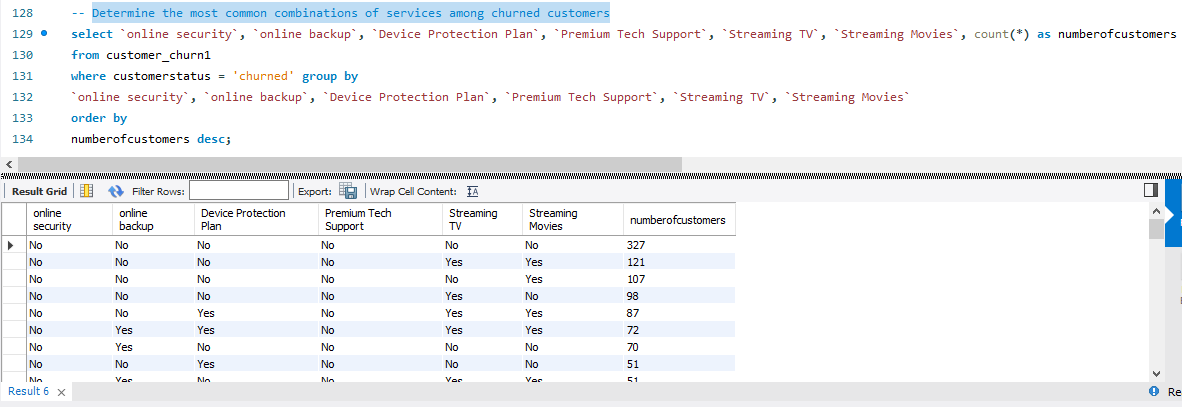
**Ques8.** Calculate the average monthly charges for different contract types among churned customers



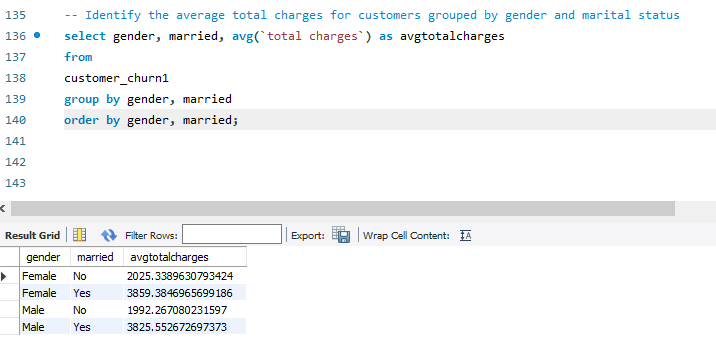
**Ques9.** Identify customers who have both online security and online backup services and have not churned



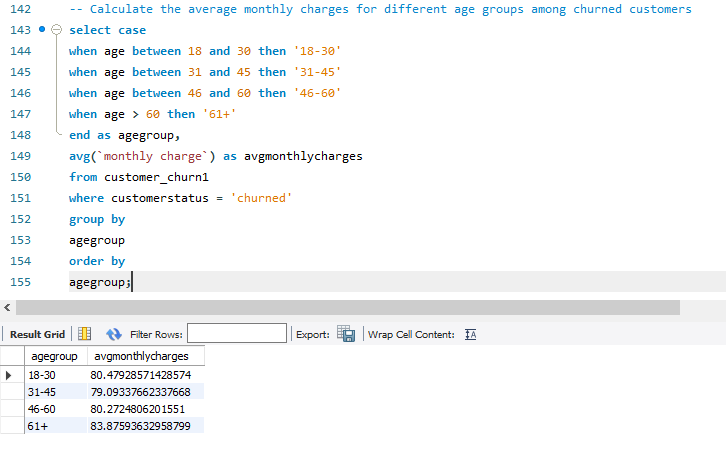
**Ques10.** Determine the most common combinations of services among churned customers



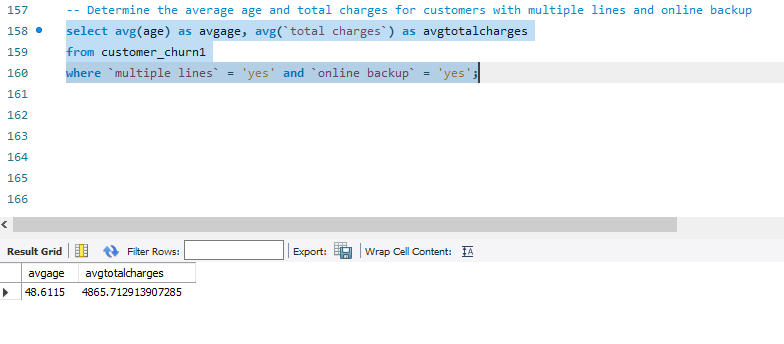
**Ques11.** Identify the average total charges for customers grouped by gender and marital status



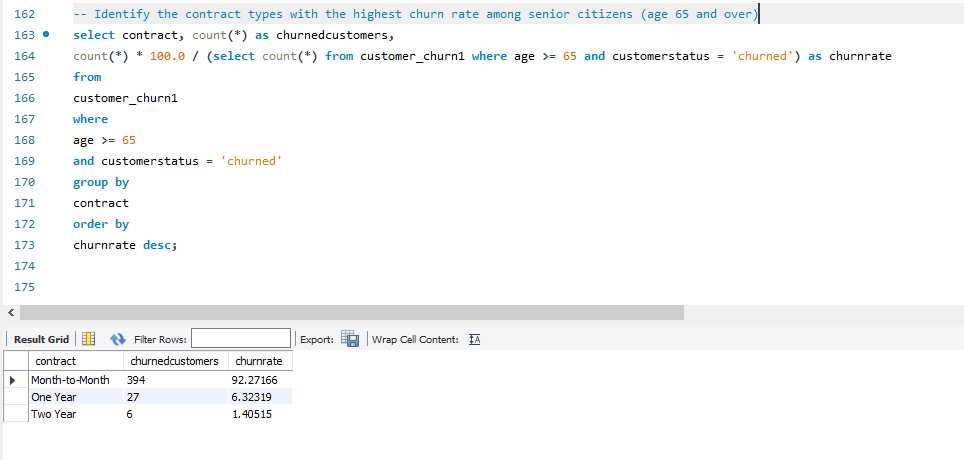
**Ques12.** Calculate the average monthly charges for different age groups among churned customers



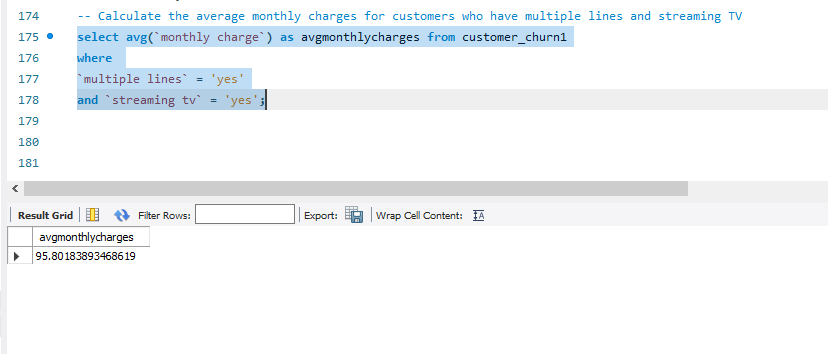
**Ques13.** Determine the average age and total charges for customers with multiple lines and online backup

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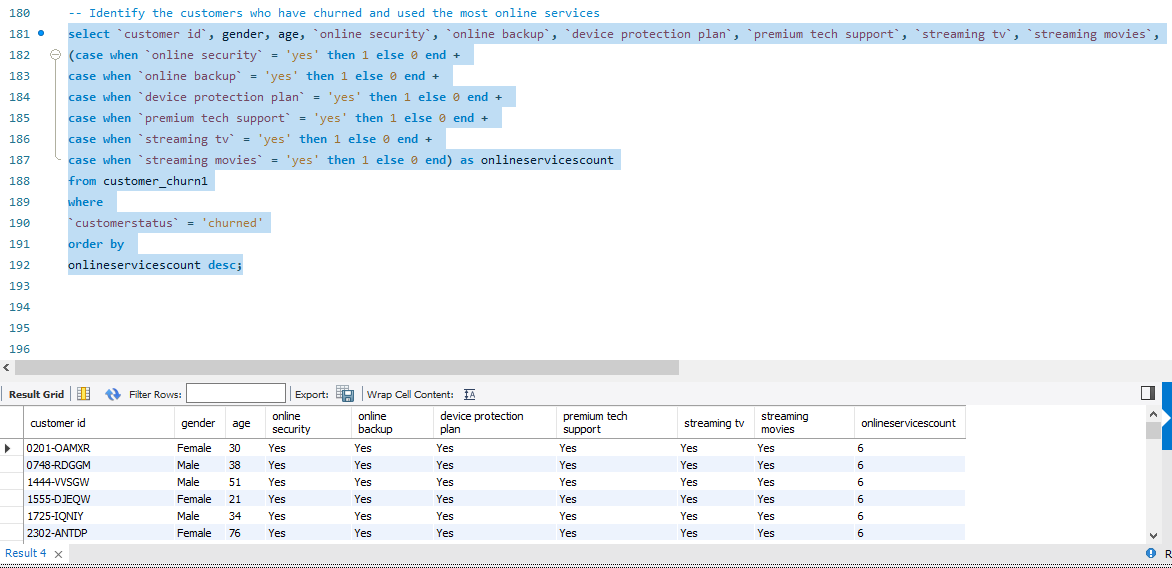
**Ques14.** Identify the contract types with the highest churn rate among senior citizens (age 65 and over)



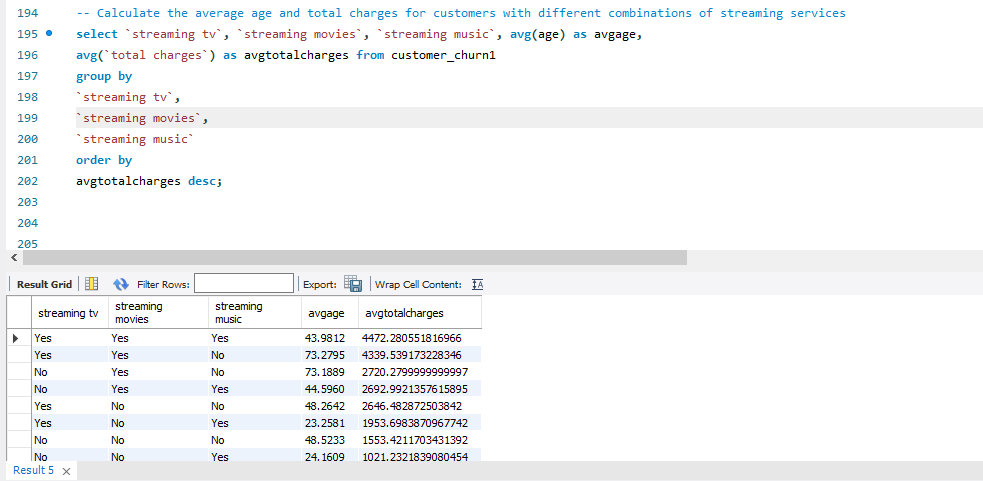
**Ques15.** Calculate the average monthly charges for customers who have multiple lines and streaming TV



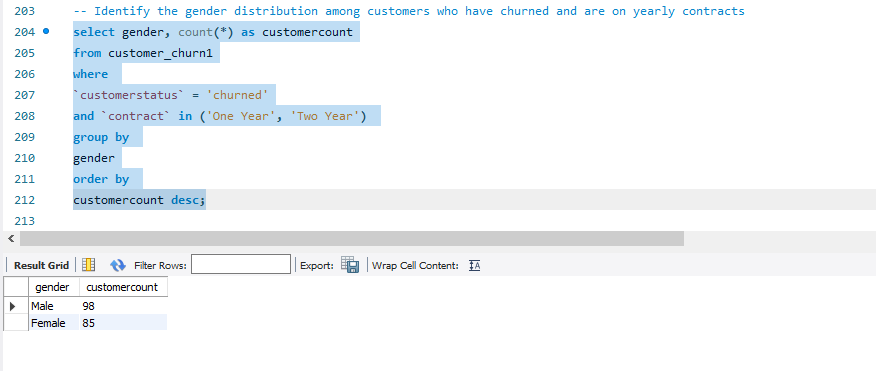
**Ques16.** Identify the customers who have churned and used the most online services



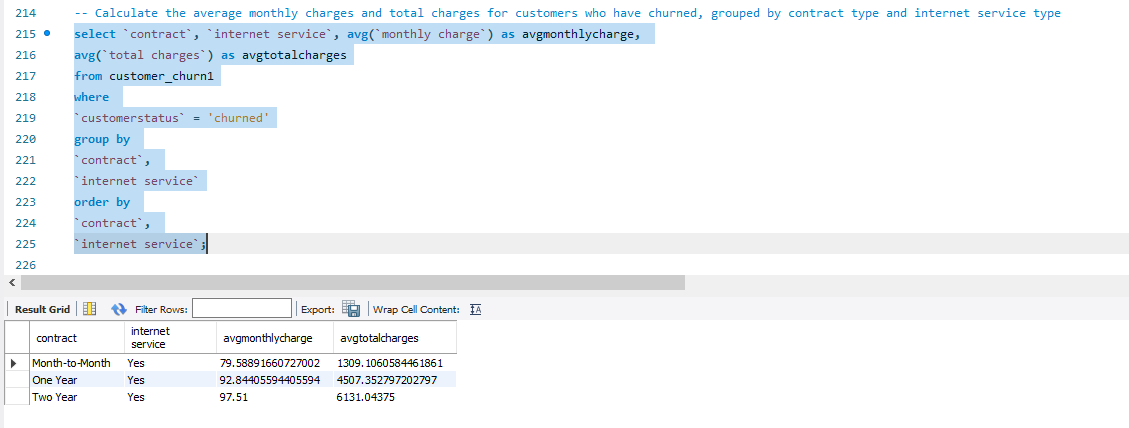
**Ques17.** Calculate the average age and total charges for customers with different combinations of streaming services



**Ques18.** Identify the gender distribution among customers who have churned and are on yearly contracts

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**Ques19.** Calculate the average monthly charges and total charges for customers who have churned, grouped by contract type and internet service type



**Ques20.** Find the customers who have churned and are not using online services, and their average total charges

