

Tasks 1 Output: Understand the Dataset

First 10 rows of dataset:

	customerID	gender	SeniorCitizen	Partner	Dependents	tenure	PhoneService	\
0	7590-VHVEG	Female	0	Yes	No	1	No	
1	5575-GNVDE	Male	0	No	No	34	Yes	
2	3668-QPYBK	Male	0	No	No	2	Yes	
3	7795-CFOCW	Male	0	No	No	45	No	
4	9237-HQITU	Female	0	No	No	2	Yes	
5	9305-CDSKC	Female	0	No	No	8	Yes	
6	1452-KIOVK	Male	0	No	Yes	22	Yes	
7	6713-OKOMC	Female	0	No	No	10	No	
8	7892-POOKP	Female	0	Yes	No	28	Yes	
9	6388-TABGU	Male	0	No	Yes	62	Yes	

MultipleLines InternetService OnlineSecurity ... DeviceProtection \

0	No	phone service	DSL	No	...	No
1		No	DSL	Yes	...	Yes
2		No	DSL	Yes	...	No
3	No	phone service	DSL	Yes	...	Yes
4		No	Fiber optic	No	...	No
5		Yes	Fiber optic	No	...	Yes
6		Yes	Fiber optic	No	...	No
7	No	phone service	DSL	Yes	...	No
8		Yes	Fiber optic	No	...	Yes
9		No	DSL	Yes	...	No

TechSupport StreamingTV StreamingMovies Contract PaperlessBilling \

0	No	No	No	Month-to-month	Yes
1	No	No	No	One year	No
2	No	No	No	Month-to-month	Yes
3	Yes	No	No	One year	No
4	No	No	No	Month-to-month	Yes
5	No	Yes	Yes	Month-to-month	Yes
6	No	Yes	No	Month-to-month	Yes
7	No	No	No	Month-to-month	No
8	Yes	Yes	Yes	Month-to-month	Yes
9	No	No	No	One year	No

PaymentMethod MonthlyCharges TotalCharges Churn

0	Electronic check	29.85	29.85	No
1	Mailed check	56.95	1889.5	No
2	Mailed check	53.85	108.15	Yes
3	Bank transfer (automatic)	42.30	1840.75	No
4	Electronic check	70.70	151.65	Yes
5	Electronic check	99.65	820.5	Yes
6	Credit card (automatic)	89.10	1949.4	No
7	Mailed check	29.75	301.9	No
8	Electronic check	104.80	3046.05	Yes
9	Bank transfer (automatic)	56.15	3487.95	No

[10 rows x 21 columns]

```
Dataset shape (rows, columns): (7043, 21)
```

```
Data types of each column:  
customerID          object  
gender              object  
SeniorCitizen       int64  
Partner             object  
Dependents          object  
tenure              int64  
PhoneService         object  
MultipleLines        object  
InternetService      object  
OnlineSecurity       object  
OnlineBackup          object  
DeviceProtection     object  
TechSupport           object  
StreamingTV          object  
StreamingMovies       object  
  
Contract             object  
PaperlessBilling      object  
PaymentMethod         object  
MonthlyCharges        float64  
TotalCharges          object  
Churn                object  
dtype: object
```

```
Missing values in each column:
```

```
customerID          0  
gender              0  
SeniorCitizen       0  
Partner             0  
Dependents          0  
tenure              0  
PhoneService         0  
MultipleLines        0  
InternetService      0  
OnlineSecurity       0  
OnlineBackup          0  
DeviceProtection     0  
TechSupport           0  
StreamingTV          0  
StreamingMovies       0  
Contract             0  
  
PaperlessBilling      0  
PaymentMethod         0  
MonthlyCharges        0  
TotalCharges          0  
Churn                0  
dtype: int64
```

```
Dataset info:  
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 7043 entries, 0 to 7042  
Data columns (total 21 columns):  
 #   Column           Non-Null Count  Dtype     
 ---  --     
 0   customerID      7043 non-null    object    
 1   gender          7043 non-null    object    
 2   SeniorCitizen   7043 non-null    int64     
 3   Partner         7043 non-null    object    
 4   Dependents     7043 non-null    object    
 5   tenure          7043 non-null    int64     
 6   PhoneService    7043 non-null    object    
 7   MultipleLines   7043 non-null    object    
 8   InternetService 7043 non-null    object    
 9   OnlineSecurity  7043 non-null    object    
 10  OnlineBackup    7043 non-null    object    
 11  DeviceProtection 7043 non-null    object    
 12  TechSupport    7043 non-null    object    
 13  StreamingTV    7043 non-null    object    
 14  StreamingMovies 7043 non-null    object    
 15  Contract        7043 non-null    object    
 16  PaperlessBilling 7043 non-null    object    
 17  PaymentMethod   7043 non-null    object    
 18  MonthlyCharges 7043 non-null    float64   
 19  TotalCharges   7043 non-null    object    
 20  Churn           7043 non-null    object    
dtypes: float64(1), int64(2), object(18)  
memory usage: 1.1+ MB  
None
```