

Code to Data Visualization

1. Data Overview

```
RangeIndex: 7043 entries, 0 to 7042
Data columns (total 10 columns):
#   Column                Non-Null Count  Dtype  
---  -
0   gender                 7043 non-null   object  
1   SeniorCitizen          7043 non-null   int64   
2   Dependents             7043 non-null   object  
3   tenure                 7043 non-null   int64   
4   PhoneService           7043 non-null   object  
5   MultipleLines          7043 non-null   object  
6   InternetService        7043 non-null   object  
7   Contract               7043 non-null   object  
8   MonthlyCharges         7043 non-null   float64  
9   Churn                  7043 non-null   object  
dtypes: float64(1), int64(2), object(7)
```

2. Data Statistics

	SeniorCitizen	tenure	MonthlyCharges
count	7043.000000	7043.000000	7043.000000
mean	0.162147	32.371149	64.761692
std	0.368612	24.559481	30.090047
min	0.000000	0.000000	18.250000
25%	0.000000	9.000000	35.500000
50%	0.000000	29.000000	70.350000
75%	0.000000	55.000000	89.850000
max	1.000000	72.000000	118.750000

3. Missing Values Before and After Imputation

```
Missing Values:
gender          0
SeniorCitizen  0
Dependents      0
tenure          0
PhoneService    0
MultipleLines    0
InternetService  0
Contract        0
MonthlyCharges  0
Churn           0
dtype: int64

Missing Values After Imputation:
gender          0
SeniorCitizen  0
Dependents      0
tenure          0
PhoneService    0
MultipleLines    0
InternetService  0
Contract        0
MonthlyCharges  0
Churn           0
dtype: int64
```

4. Data After Encoding Categorical Variables

Data After Encoding Categorical Variables:							
	gender	SeniorCitizen	Dependents	tenure	PhoneService	MultipleLines	\
0	0	0	0	1	0	0	
1	1	0	0	34	1	0	
2	1	0	0	2	1	0	
3	1	0	0	45	0	0	
4	0	0	0	2	1	0	
	InternetService	Contract	MonthlyCharges	Churn			
0	0	0	29.85	0			
1	0	1	56.95	0			
2	0	0	53.85	1			
3	0	1	42.30	0			
4	1	0	70.70	1			

5. Prepared and Normalised Data

10 Rows of Prepared and Normalized Training Data:							
	gender	SeniorCitizen	Dependents	tenure	PhoneService	MultipleLines	\
0	-1.025166	-0.437749	1.532186	-0.465683	0.329573	-0.860523	
1	-1.025166	-0.437749	-0.652662	0.885537	0.329573	1.162083	
2	0.975452	-0.437749	-0.652662	-1.284605	-3.034225	-0.860523	
3	0.975452	-0.437749	-0.652662	-1.161766	0.329573	-0.860523	
4	0.975452	-0.437749	1.532186	-1.325551	0.329573	1.162083	
5	0.975452	-0.437749	-0.652662	-1.038928	0.329573	-0.860523	
6	0.975452	-0.437749	1.532186	-0.015277	0.329573	-0.860523	
7	0.975452	-0.437749	1.532186	1.622566	0.329573	-0.860523	
8	0.975452	-0.437749	-0.652662	-0.547575	-3.034225	-0.860523	
9	0.975452	-0.437749	1.532186	-0.916090	0.329573	-0.860523	
	InternetService	Contract	MonthlyCharges				
0	-0.887057	0.372908	-0.000474				
1	1.127324	1.577591	1.074754				
2	-0.887057	-0.831774	-1.376499				
3	1.127324	-0.831774	0.177346				
4	-0.887057	1.577591	-0.098524				
5	1.127324	-0.831774	0.155742				
6	-0.887057	1.577591	-1.526067				
7	-0.887057	1.577591	-1.497815				
8	-0.887057	-0.831774	-0.838054				
9	-0.887057	0.372908	-1.492830				

6. Graphical representation of MonthlyCharge Distribution Before and After Scaling

