```
C:\Users\yashh\anaconda3\python.exe D:\ada-ia4\statistical.py
            SOC (%)  Voltage (V)  ...     EV Model  Optimal Charging Duration Class
count  1000.000000  1000.000000  ...  1000.000000                      1000.000000
mean     54.123090     3.854912  ...     1.010000                         1.194000
std      26.292363     0.204533  ...     0.822543                         0.747611
min      10.416882     3.502253  ...     0.000000                         0.000000
25%      31.237594     3.668752  ...     0.000000                         1.000000
50%      54.712664     3.863114  ...     1.000000                         1.000000
75%      76.988763     4.032326  ...     2.000000                         2.000000
max      99.974591     4.199590  ...     2.000000                         2.000000

[8 rows x 13 columns]

--- SOC (%) ---

Feature: SOC (%)
Skewness: 0.04
Right-skewed Distribution
Kurtosis: -1.23
Extreme outliers are rare (Platykurtic)
Shapiro-Wilk Test p-value: 0.0000
Not normally distributed
C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):

--- Voltage (V) ---

```

```
Feature: Voltage (V)
Skewness: -0.06
Left-skewed Distribution
Kurtosis: -1.22
Extreme outliers are rare (Platykurtic)
Shapiro-Wilk Test p-value: 0.0000
Not normally distributed
C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):

--- Current (A) ---

Feature: Current (A)
Skewness: -0.02
Left-skewed Distribution
Kurtosis: -1.19
Extreme outliers are rare (Platykurtic)
Shapiro-Wilk Test p-value: 0.0000
Not normally distributed
C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):

--- Battery Temp (°C) ---

Feature: Battery Temp (°C)
Skewness: 0.03
Right-skewed Distribution
Kurtosis: -1.20
Extreme outliers are rare (Platykurtic)
Shapiro-Wilk Test p-value: 0.0000
Not normally distributed
C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1119: FutureWarning: use_inf_as_na option
```

```
 is deprecated and will be removed in a future
version. Convert inf values to NaN before operating
instead.
  with pd.option_context('mode.use_inf_as_na', True):

--- Ambient Temp (°C) ---

Feature: Ambient Temp (°C)
Skewness: 0.03
Right-skewed Distribution
Kurtosis: -1.19
Extreme outliers are rare (Platykurtic)
Shapiro-Wilk Test p-value: 0.0000
Not normally distributed
C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\
_oldcore.py:1119: FutureWarning: use_inf_as_na option
 is deprecated and will be removed in a future
version. Convert inf values to NaN before operating
instead.
  with pd.option_context('mode.use_inf_as_na', True):

--- Charging Duration (min) ---

Feature: Charging Duration (min)
Skewness: 0.03
Right-skewed Distribution
Kurtosis: -1.18
Extreme outliers are rare (Platykurtic)
Shapiro-Wilk Test p-value: 0.0000
Not normally distributed
C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\
_oldcore.py:1119: FutureWarning: use_inf_as_na option
 is deprecated and will be removed in a future
version. Convert inf values to NaN before operating
instead.
  with pd.option_context('mode.use_inf_as_na', True):

--- Degradation Rate (%) ---

Feature: Degradation Rate (%)
Skewness: -0.01
```

```
 90 Left-skewed Distribution
 91 Kurtosis: -0.78
 92 Extreme outliers are rare (Platykurtic)
 93 Shapiro-Wilk Test p-value: 0.0000
 94 Not normally distributed
 95 C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\
    _oldcore.py:1119: FutureWarning: use_inf_as_na
    option is deprecated and will be removed in a future
     version. Convert inf values to NaN before operating
     instead.
 96   with pd.option_context('mode.use_inf_as_na', True
    ):
 97
 98 --- Efficiency (%) ---
 99
100 Feature: Efficiency (%)
101 Skewness: 0.01
102 Right-skewed Distribution
103 Kurtosis: -0.78
104 Extreme outliers are rare (Platykurtic)
105 Shapiro-Wilk Test p-value: 0.0000
106 Not normally distributed
107 C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\
    _oldcore.py:1119: FutureWarning: use_inf_as_na
    option is deprecated and will be removed in a future
     version. Convert inf values to NaN before operating
     instead.
108   with pd.option_context('mode.use_inf_as_na', True
    ):
109
110 --- Charging Cycles ---
111
112 Feature: Charging Cycles
113 Skewness: -0.07
114 Left-skewed Distribution
115 Kurtosis: -1.22
116 Extreme outliers are rare (Platykurtic)
117 Shapiro-Wilk Test p-value: 0.0000
118 Not normally distributed
119 C:\Users\yashh\anaconda3\Lib\site-packages\seaborn\
    _oldcore.py:1119: FutureWarning: use_inf_as_na
```

```
119 option is deprecated and will be removed in a future
     version. Convert inf values to NaN before operating
     instead.
120   with pd.option_context('mode.use_inf_as_na', True
    ):
121
122 Chi-Square Test between 'Charging Mode' and 'Optimal
     Charging Duration Class'
123 Contingency Table:
124 Optimal Charging Duration Class   0    1    2
125 Charging Mode
126 Fast                            60  143  116
127 Normal                          71  136  133
128 Slow                            70  125  146
129 Chi2 Statistic: 4.8990
130 p-value: 0.2978
131 No significant association
132
133 Chi-Square Test between 'Battery Type' and 'Optimal
    Charging Duration Class'
134 Contingency Table:
135 Optimal Charging Duration Class    0    1    2
136 Battery Type
137 Li-ion                           99  202  196
138 LiFePO4                         102  202  199
139 Chi2 Statistic: 0.0316
140 p-value: 0.9843
141 No significant association
142
143 Chi-Square Test between 'EV Model' and 'Optimal
    Charging Duration Class'
144 Contingency Table:
145 Optimal Charging Duration Class   0    1    2
146 EV Model
147 Model A                         71  141  121
148 Model B                         55  124  145
149 Model C                         75  139  129
150 Chi2 Statistic: 6.4464
151 p-value: 0.1682
152 No significant association
153
```

```
154 Process finished with exit code 0
155
```