In [13]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

In [14]:
```
file_path = 'Financial Analytics data.csv'
df = pd.read_csv(file_path)
```

In [15]:
```
print(df.head())
```

```
   S.No.            Name  Mar Cap - Crore  Sales Qtr - Crore  Unnamed: 4
0      1  Reliance Inds.        583436.72           99810.00         NaN
1      2             TCS        563709.84           30904.00         NaN
2      3       HDFC Bank        482953.59           20581.27         NaN
3      4             ITC        320985.27            9772.02         NaN
4      5         H D F C        289497.37           16840.51         NaN
```

In [16]:
```
print(df.isnull().sum())
```

```
S.No.                  0
Name                   0
Mar Cap - Crore        9
Sales Qtr - Crore    123
Unnamed: 4           394
dtype: int64
```

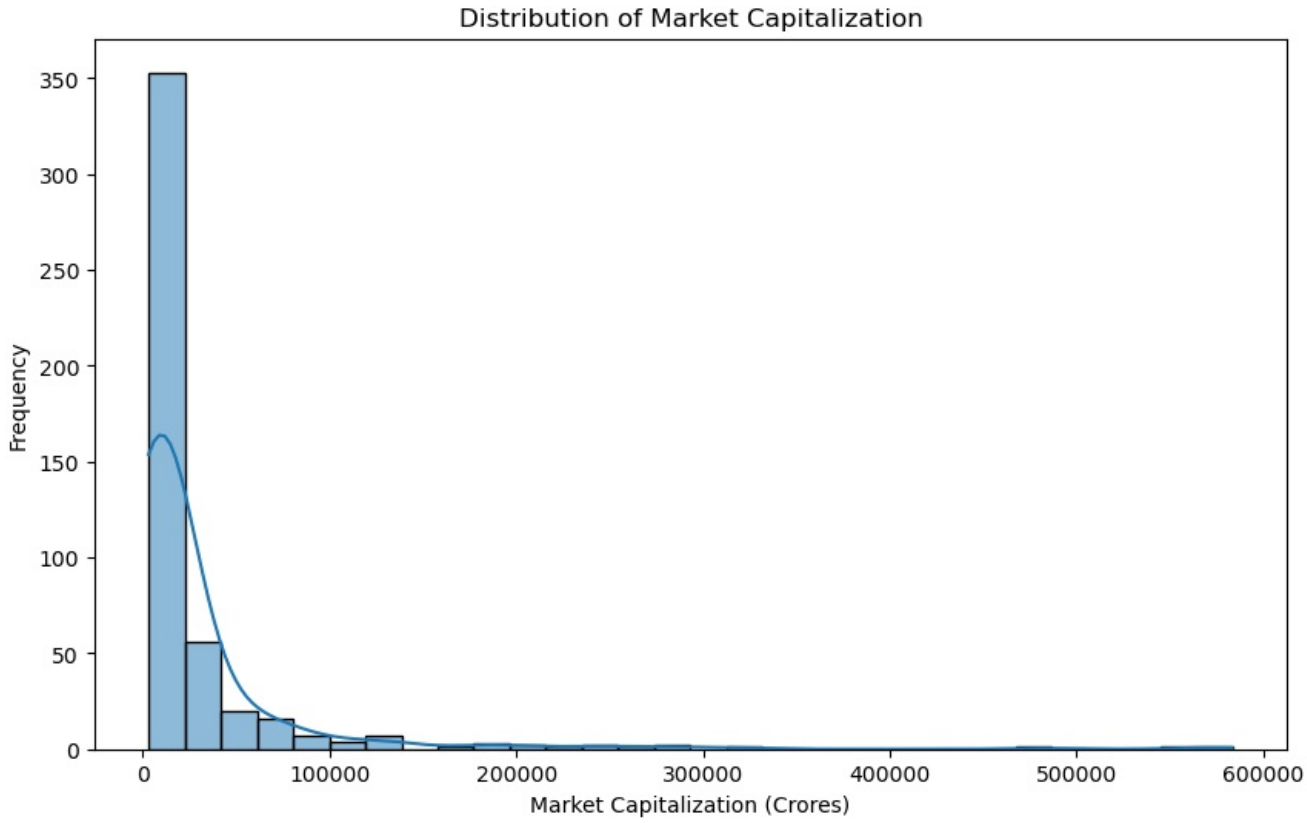
In [17]:
```
print(df.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 488 entries, 0 to 487
Data columns (total 5 columns):
 #   Column             Non-Null Count  Dtype
---  ------             --------------  -----
 0   S.No.              488 non-null    int64
 1   Name               488 non-null    object
 2   Mar Cap - Crore    479 non-null    float64
 3   Sales Qtr - Crore  365 non-null    float64
 4   Unnamed: 4         94 non-null     float64
dtypes: float64(3), int64(1), object(1)
memory usage: 19.2+ KB
None
```

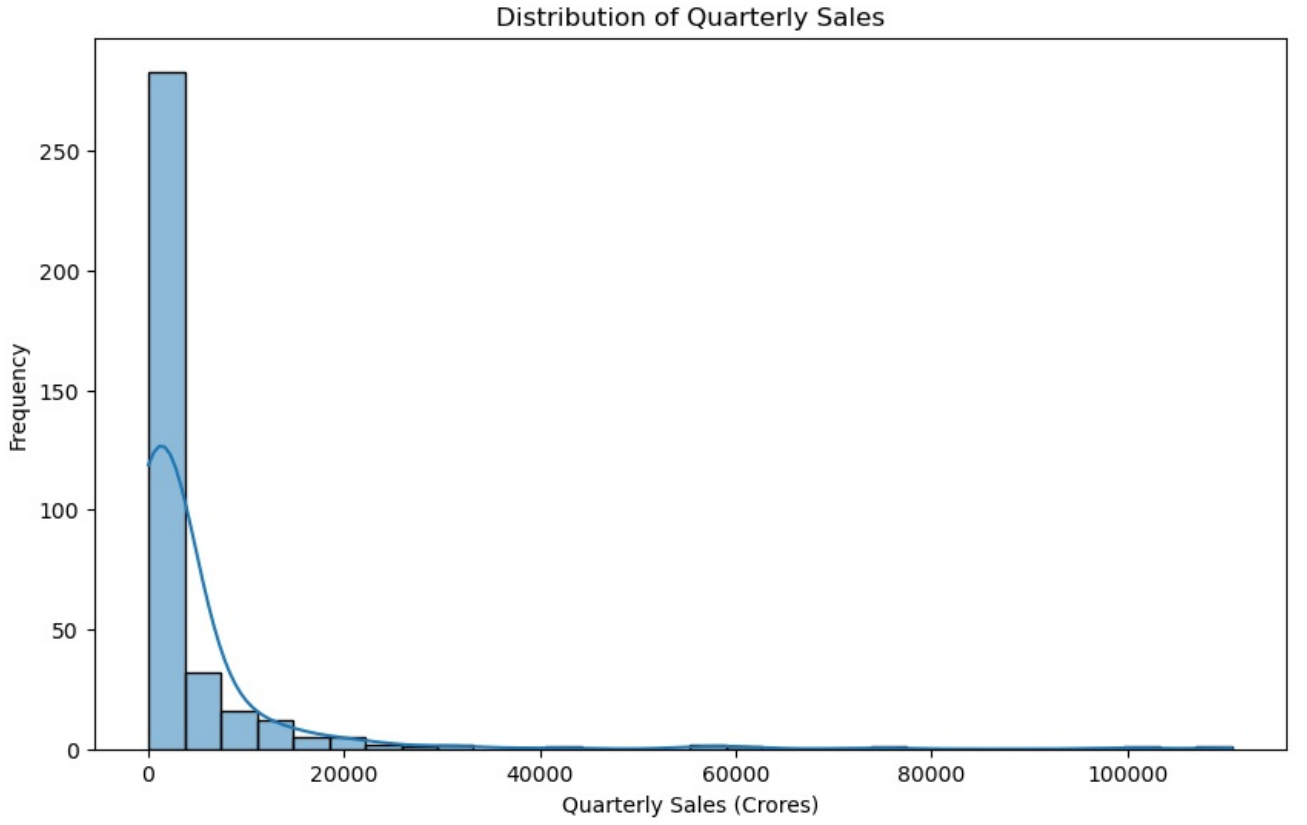
In [18]:
```
print(df.describe())
```

```
            S.No.  Mar Cap - Crore  Sales Qtr - Crore   Unnamed: 4
count  488.000000       479.000000         365.000000    94.000000
mean   251.508197     28043.857119        4395.976849  1523.870106
std    145.884078     59464.615831       11092.206185  1800.008836
min      1.000000      3017.070000          47.240000     0.000000
25%    122.750000      4843.575000         593.740000   407.167500
50%    252.500000      9885.050000        1278.300000   702.325000
75%    378.250000     23549.900000        2840.750000  2234.815000
max    500.000000    583436.720000      110666.930000  7757.060000
```

In [20]:
```
# Distribution of Market Capitalization
plt.figure(figsize=(10, 6))
sns.histplot(df['Mar Cap - Crore'], bins=30, kde=True)
plt.title('Distribution of Market Capitalization')
plt.xlabel('Market Capitalization (Crores)')
plt.ylabel('Frequency')
plt.show()
```



In [21]:
```
# Distribution of Quarterly Sales
plt.figure(figsize=(10, 6))
sns.histplot(df['Sales Qtr - Crore'], bins=30, kde=True)
plt.title('Distribution of Quarterly Sales')
plt.xlabel('Quarterly Sales (Crores)')
plt.ylabel('Frequency')
plt.show()
```



In [24]:
```
# Key metrics for Market Capitalization
mean_market_cap = df['Mar Cap - Crore'].mean()
median_market_cap = df['Mar Cap - Crore'].median()
total_market_cap = df['Mar Cap - Crore'].sum()

print(f"Mean Market Capitalization: {mean_market_cap:.2f} Crores")
print(f"Median Market Capitalization: {median_market_cap:.2f} Crores")
print(f"Total Market Capitalization: {total_market_cap:.2f} Crores")
```

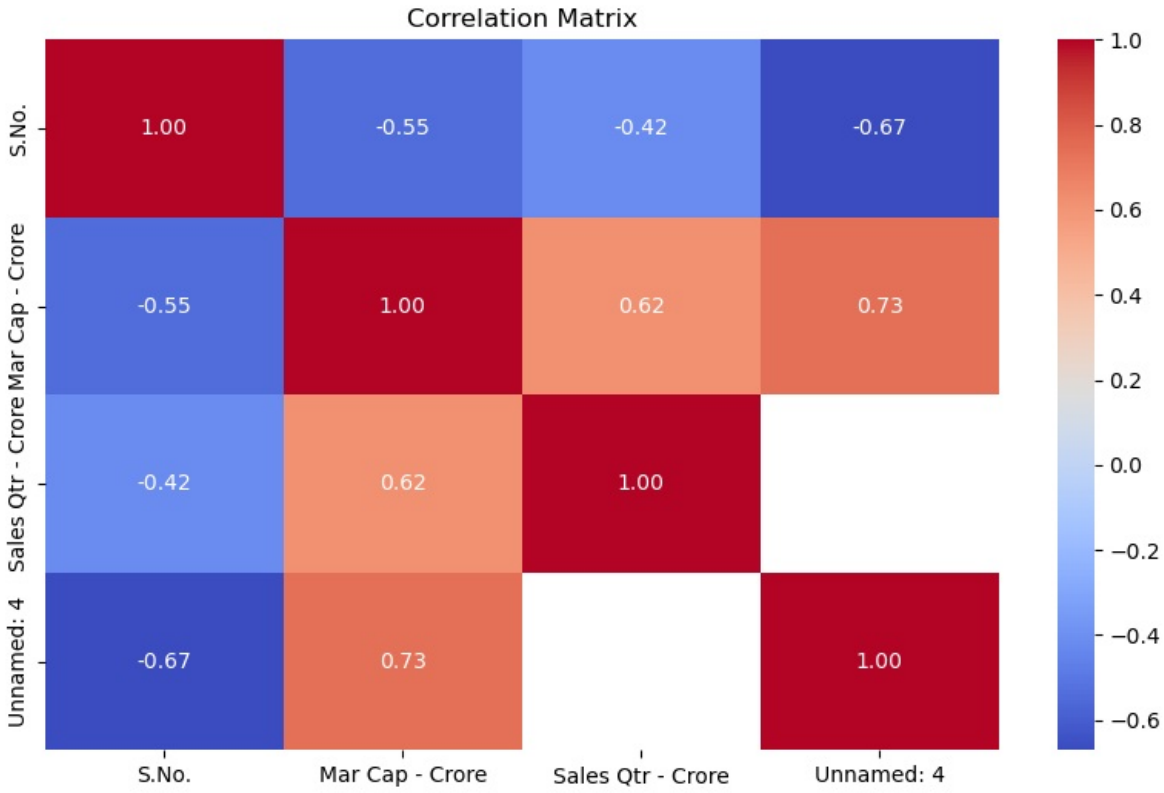
```
Mean Market Capitalization: 28043.86 Crores
Median Market Capitalization: 9885.05 Crores
Total Market Capitalization: 13433007.56 Crores
```

In [25]:
```python
# Key metrics for Quarterly Sales
mean_sales_qtr = df['Sales Qtr - Crore'].mean()
median_sales_qtr = df['Sales Qtr - Crore'].median()
total_sales_qtr = df['Sales Qtr - Crore'].sum()

print(f"Mean Quarterly Sales: {mean_sales_qtr:.2f} Crores")
print(f"Median Quarterly Sales: {median_sales_qtr:.2f} Crores")
print(f"Total Quarterly Sales: {total_sales_qtr:.2f} Crores")
```

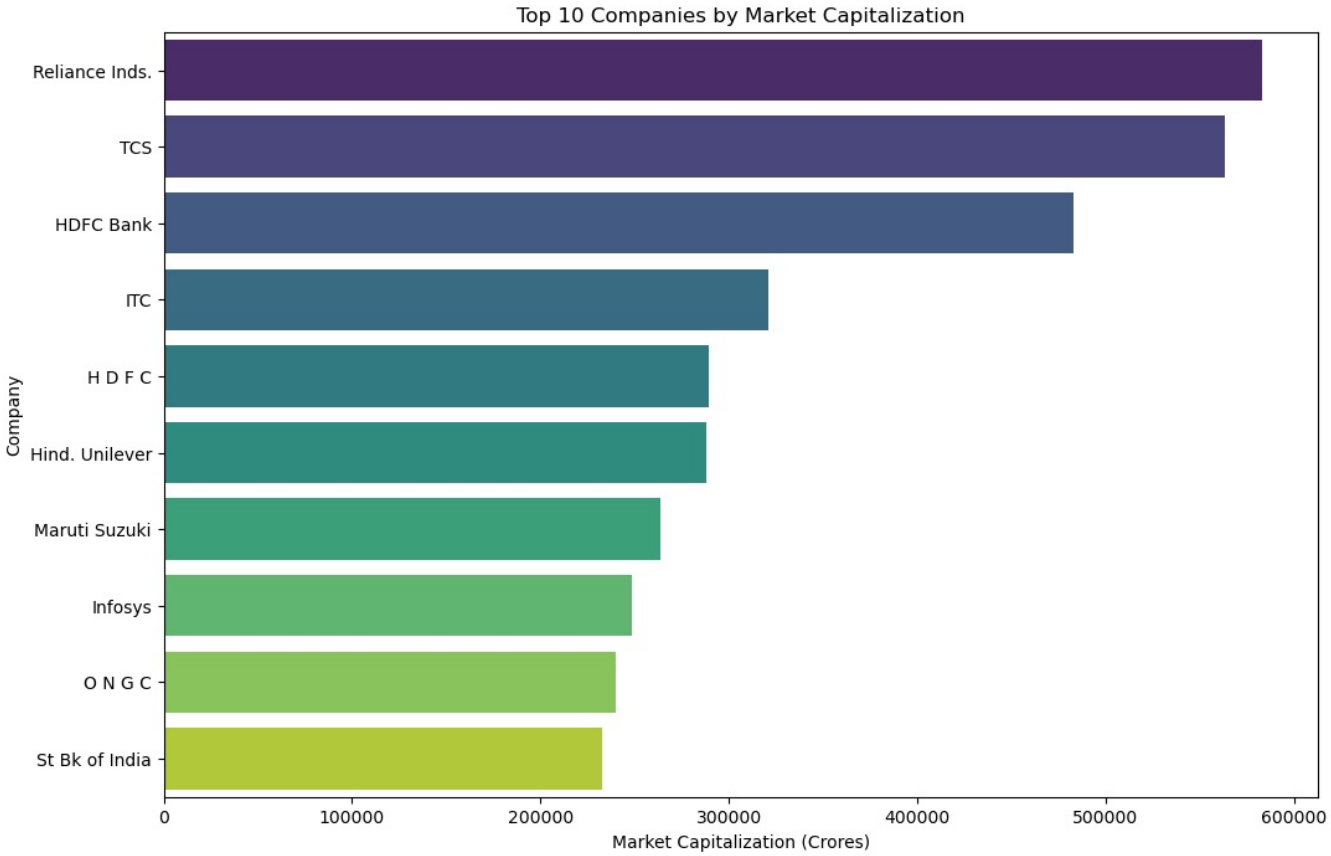
```
Mean Quarterly Sales: 4395.98 Crores
Median Quarterly Sales: 1278.30 Crores
Total Quarterly Sales: 1604531.55 Crores
```

In [27]:
```python
def correlation_analysis(df):
    numeric_df = df.select_dtypes(include=[np.number])
    corr = numeric_df.corr()
    plt.figure(figsize=(10, 6))
    sns.heatmap(corr, annot=True, cmap='coolwarm', fmt='.2f')
    plt.title('Correlation Matrix')
    plt.show()
correlation_analysis(df)
```



In [29]:
```python
# Top 10 companies by Market Capitalization
top_10_market_cap = df.nlargest(10, 'Mar Cap - Crore')

plt.figure(figsize=(12, 8))
sns.barplot(x= 'Mar Cap - Crore', y='Name', data=top_10_market_cap, palette='viridis')
plt.title('Top 10 Companies by Market Capitalization')
plt.xlabel('Market Capitalization (Crores)')
plt.ylabel('Company')
plt.show()
```



In [32]:
```
# Top 10 companies by Quarterly Sales
top_10_sales_qtr = df.nlargest(10, 'Sales Qtr - Crore')

plt.figure(figsize=(12, 8))
sns.barplot(x= 'Sales Qtr - Crore', y='Name', data=top_10_sales_qtr, palette='magma')
plt.title('Top 10 Companies by Quarterly Sales')
plt.xlabel('Quarterly Sales (Crores)')
plt.ylabel('Company')
plt.show()
```