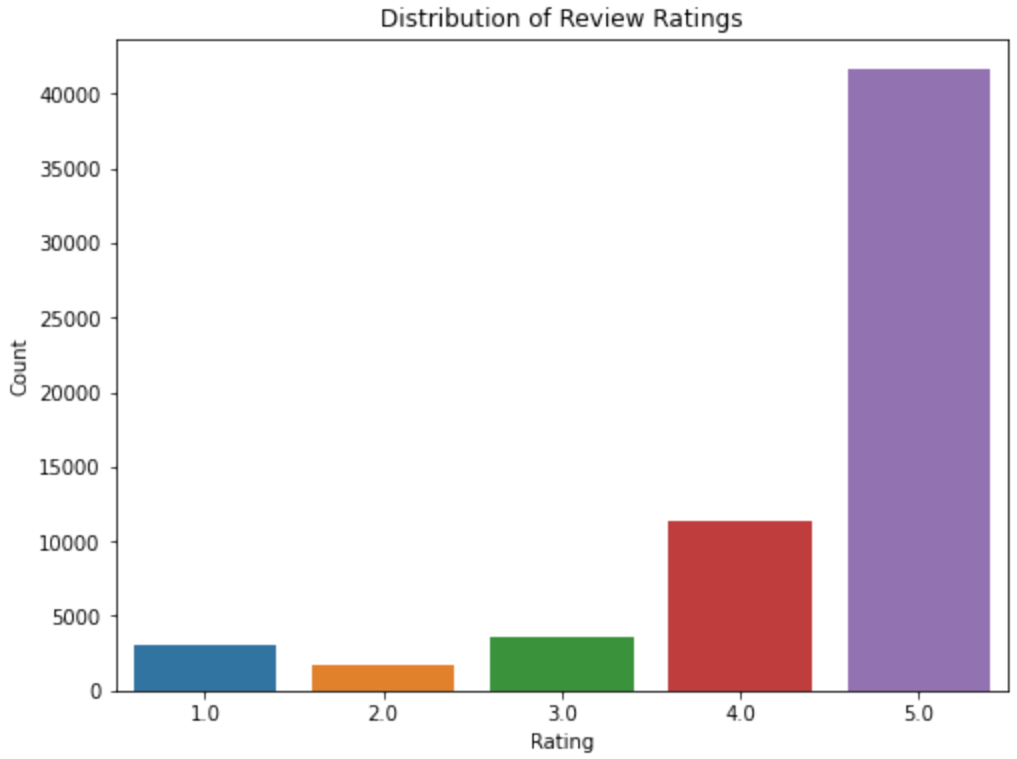
In [1]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from wordcloud import WordCloud  # Importing WordCloud module
```

In [2]:
```
data = pd.read_csv('nyka_top_brands_cosmetics_product_reviews.csv')
```

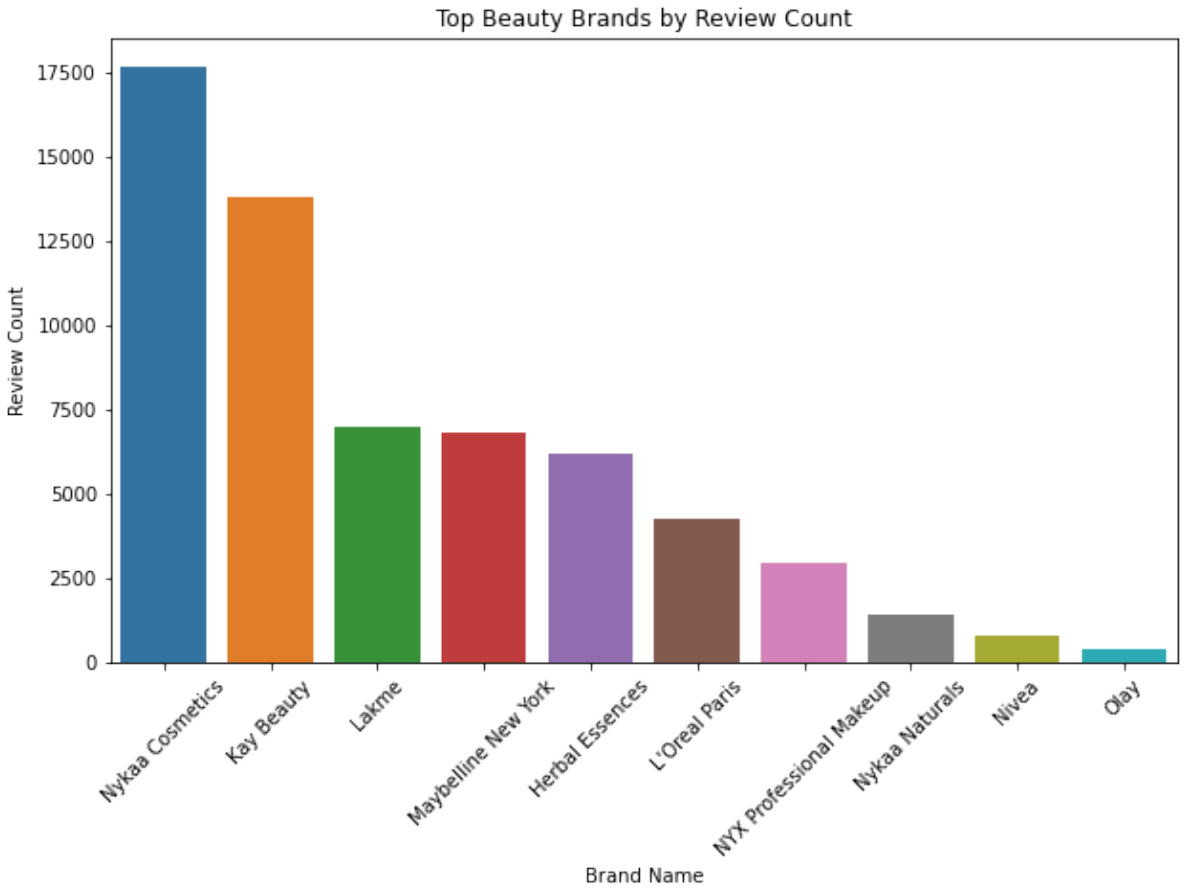
In [3]:
```
# Exploratory Data Analysis (EDA)
# Visualize distribution of review ratings
plt.figure(figsize=(8, 6))
sns.countplot(x='review_rating', data=data)
plt.title('Distribution of Review Ratings')
plt.xlabel('Rating')
plt.ylabel('Count')
plt.show()
```



In [4]:
```
# Analyze top beauty brands by review count
top_brands = data['brand_name'].value_counts().head(10)
print("Top Beauty Brands by Review Count:")
print(top_brands)
```

```
Top Beauty Brands by Review Count:
Nykaa Cosmetics            17652
Kay Beauty                 13788
Lakme                       6999
Maybelline New York         6821
Herbal Essences             6197
L'Oreal Paris               4273
NYX Professional Makeup     2954
Nykaa Naturals              1426
Nivea                        774
Olay                         399
Name: brand_name, dtype: int64
```

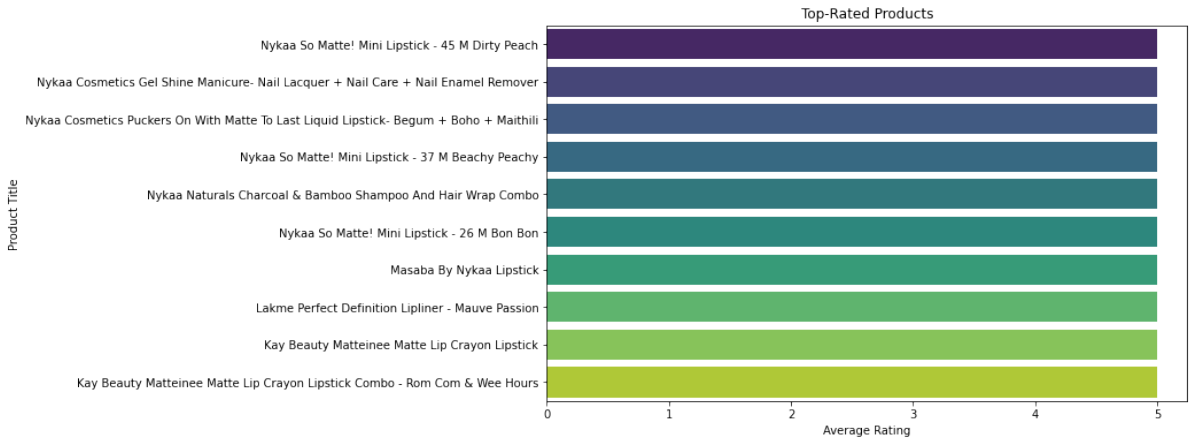
In [5]:
```
# Visualize top brands by review count
plt.figure(figsize=(10, 6))
sns.barplot(x=top_brands.index, y=top_brands.values)
plt.title('Top Beauty Brands by Review Count')
plt.xlabel('Brand Name')
plt.ylabel('Review Count')
plt.xticks(rotation=45)
plt.show()
```



In [6]:
```
# Analyze top-rated products
top_rated_products = data.groupby('product_title')['review_rating'].mean().sor
print("\nTop-Rated Products:")
print(top_rated_products)
```

```
Top-Rated Products:
product_title
Nykaa So Matte! Mini Lipstick - 45 M Dirty Peach
5.0
Nykaa Cosmetics Gel Shine Manicure- Nail Lacquer + Nail Care + Nail Enamel Re
mover        5.0
Nykaa Cosmetics Puckers On With Matte To Last Liquid Lipstick- Begum + Boho +
Maithili    5.0
Nykaa So Matte! Mini Lipstick - 37 M Beachy Peachy
5.0
Nykaa Naturals Charcoal & Bamboo Shampoo And Hair Wrap Combo
5.0
Nykaa So Matte! Mini Lipstick - 26 M Bon Bon
5.0
Masaba By Nykaa Lipstick
5.0
Lakme Perfect Definition Lipliner - Mauve Passion
5.0
Kay Beauty Matteinee Matte Lip Crayon Lipstick
5.0
Kay Beauty Matteinee Matte Lip Crayon Lipstick Combo - Rom Com & Wee Hours
5.0
Name: review_rating, dtype: float64
```

In [7]:
```
# Visualize top-rated products
plt.figure(figsize=(10, 6))
sns.barplot(x=top_rated_products.values, y=top_rated_products.index, palette='
plt.title('Top-Rated Products')
plt.xlabel('Average Rating')
plt.ylabel('Product Title')
plt.show()
```



In [8]:
```
# Sort the dataset by 'review_rating' column in ascending order to get the wors
worst_rated_products = data.sort_values(by='review_rating', ascending=True)

# Display the products with the lowest ratings
print("Products with the Lowest Ratings:")
print(worst_rated_products[['product_title', 'review_rating']].head(10))
```

```
Products with the Lowest Ratings:
                                           product_title  review_rating
8543    Nykaa Oh My Brow! Eyebrow Mascara - Sirius Brown            1.0
41206  L'Oreal Paris Infallible Pro-Spray & Set Makeu...            1.0
41687                Kay Beauty Illuminating Highlighter            1.0
41688                Kay Beauty Illuminating Highlighter            1.0
41689                Kay Beauty Illuminating Highlighter            1.0
41690                Kay Beauty Illuminating Highlighter            1.0
41691                Kay Beauty Illuminating Highlighter            1.0
41107  L'Oreal Paris Infallible Pro-Spray & Set Makeu...            1.0
41692                Kay Beauty Illuminating Highlighter            1.0
41694                Kay Beauty Illuminating Highlighter            1.0
```

In [9]:
```
# Sort the dataset by 'review_rating' column in ascending order to get the wors
worst_rated_products = data.sort_values(by='review_rating', ascending=True)

# Sort the dataset by 'review_rating' column in descending order to get the bes
best_rated_products = data.sort_values(by='review_rating', ascending=False)

# Plotting the distribution of review ratings for worst and best-rated products
plt.figure(figsize=(10, 6))
sns.histplot(data=worst_rated_products, x='review_rating', bins=10, color='red
sns.histplot(data=best_rated_products, x='review_rating', bins=10, color='blue
plt.title('Distribution of Review Ratings for Worst and Best Rated Products')
plt.xlabel('Review Rating')
plt.ylabel('Frequency')
plt.legend()
plt.grid(True)
plt.show()
```

In [ ]: