

```
In [1]: from bs4 import BeautifulSoup
import requests
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from textblob import TextBlob

Names = []
Rating = []
Reviews = []
Cities = []
Occasions = []
PostedOn = []

In [2]: url = "https://www.floweraura.com/reviews/p/6617/10-red-roses-bouquet?page=1"
url_new = "https://www.floweraura.com/reviews/p/10172/divine-butter-crepe-cake?page=1"

for i in range(1,51):
    url_i = url + str(i)
    url_new_i = url_new + str(i)

    r = requests.get(url_i)
    r_new = requests.get(url_new_i)

    soup = BeautifulSoup(r.text, "html.parser")
    main = soup.find("div", {"class": "review-left-container"})
    sub = main.find_all("div", {"class": "new-review-card-container"})

    for i in sub:
        name = i.find("span", {"class": "review-author-name"})
        Names.append(name.text.title())
        date = i.find("span", {"class": "date"})
        PostedOn.append(date.text)
        rating = i.find("span", {"class": "star-count-container"})
        Rating.append(rating.text)

        review = i.find_all("div")
        Reviews.append(review[-1].text)

In [4]: df = pd.DataFrame({'Names':Names, 'Cities':Cities, 'Posted_On':PostedOn, 'Occasion':Occasions, 'Ratings':Rating, 'Reviews':Reviews})

In [5]: df
```

	Names	Cities	Posted_On	Occasion	Ratings	Reviews
0	Ramesh Kumar Pariyar	Bengaluru	Posted On : 7th Jan 2026	Occasion : Birthday	5	Great experience with FlowerAura.Delivery was ...
1	Anki M	Shillong	Posted On : 21st Oct 2025		Nan	5 Fresh flowers..liked it.
2	Suraj Chauhan	Noida	Posted On : 23rd Sep 2025	Occasion : Birthday	5	the flowers were fresh and colorful. TBH they ...
3	Bakiyalakshmi	Bangalore	Posted On : 22nd Sep 2025	Occasion : Anniversary	5	Very fresh flowers, delivered on time with bea...
4	Pulak.Pal77	Kolkata	Posted On : 19th Sep 2025	Occasion : Birthday	5	Roses quality is very nice.
...
495	Meghna Chaturvedi	Lucknow	Posted On : 7th Sep 2023		Nan	5 The flowers arrived at time and they were fres...
496	Jidhu Joshua	Jodhpur	Posted On : 10th Sep 2023	Occasion : Anniversary	5	It was amazing....!!!
497	Arun	Hyderabad	Posted On : 9th Sep 2023		Nan	4 Thanks for the flowers
498	Premasaini	Gurgaon	Posted On : 8th Sep 2023		Nan	5 Thank you so much
499	Jhanvi Jaiswal	Mumbai	Posted On : 7th Sep 2023		Nan	5 Thankyou somuch for helping and making my sur...

500 rows × 6 columns

Data Cleaning and Preprocessing:

```
In [6]: df.columns
Out[6]: Index(['Names', 'Cities', 'Posted_On', 'Occasion', 'Ratings', 'Reviews'], dtype='object')

In [11]: df["Posted_On"] = df["Posted_On"].str.replace("Posted On :","")
df["Occasion"] = df["Occasion"].str.replace("Occasion :","")

In [12]: df
```

```
Out[12]:      Names          Cities          Posted_On Occasion Ratings   Reviews
0  Ramesh Kumar Pariyar  Bengaluru  7th Jan 2026  Birthday     5  Great experience with FlowerAura.Delivery was ...
1       Anki M            Shillong  21st Oct 2025        NaN      5  Fresh flowers..liked it.
2      Suraj Chauhan           Noida  23rd Sep 2025  Birthday     5  the flowers were fresh and colorful. TBH they ...
3     Bakiyalakshmi        Bangalore  22nd Sep 2025 Anniversary     5  Very fresh flowers, delivered on time with bea...
4      Pulak.Pal77          Kolkata  19th Sep 2025  Birthday     5  Roses quality is very nice.
...        ...
495  Meghna Chaturvedi        Lucknow  7th Sep 2023        NaN      5  The flowers arrived at time and they were fres...
496    Jidhu Joshua          Jodhpur  10th Sep 2023 Anniversary     5  It was amazing....!!!
497        Arun        Hyderabad  9th Sep 2023        NaN      4  Thanks for the flowers
498  Premasaini            Gurgaon  8th Sep 2023        NaN      5  Thank you so much
499  Jhanvi Jaiswal          Mumbai  7th Sep 2023        NaN      5  Thankyou somuch for helping and making my sur...
```

500 rows × 6 columns

```
In [17]: #finding duplicate
a = df.duplicated().sum()
print(a)
if a == 0:
    print("There is no Duplicate Value")
else:
    print("Contains Duplicate Values")
0
There is no Duplicate Value
df.sum()
```

```
Out[18]:      Names          0          Cities          0          Posted_On          0          Occasion          113          Ratings          0          Reviews          0          dtype: int64
```

```
In [19]: df["Occasion"] = df["Occasion"].fillna("Unknown") #filling null values with Unknown
```

```
In [20]: df
```

```
Out[20]:      Names          Cities          Posted_On Occasion Ratings   Reviews
0  Ramesh Kumar Pariyar  Bengaluru  7th Jan 2026  Birthday     5  Great experience with FlowerAura.Delivery was ...
1       Anki M            Shillong  21st Oct 2025        Unknown      5  Fresh flowers..liked it.
2      Suraj Chauhan           Noida  23rd Sep 2025  Birthday     5  the flowers were fresh and colorful. TBH they ...
3     Bakiyalakshmi        Bangalore  22nd Sep 2025 Anniversary     5  Very fresh flowers, delivered on time with bea...
4      Pulak.Pal77          Kolkata  19th Sep 2025  Birthday     5  Roses quality is very nice.
...        ...
495  Meghna Chaturvedi        Lucknow  7th Sep 2023        Unknown      5  The flowers arrived at time and they were fres...
496    Jidhu Joshua          Jodhpur  10th Sep 2023 Anniversary     5  It was amazing....!!!
497        Arun        Hyderabad  9th Sep 2023        Unknown      4  Thanks for the flowers
498  Premasaini            Gurgaon  8th Sep 2023        Unknown      5  Thank you so much
499  Jhanvi Jaiswal          Mumbai  7th Sep 2023        Unknown      5  Thankyou somuch for helping and making my sur...
```

500 rows × 6 columns

```
In [34]: df["Reviews"] = df["Reviews"].str.lower() #converting review text into lower
df["Reviews"] = df["Reviews"].str.replace("'", "")
```

```
In [42]: pd.set_option('display.max_colwidth', None)
df["Reviews"].head(10)
```

```
Out[42]: 0      great experience with floweraura delivery was on time and the products were really nice thank you for making the birthday special
1      fresh flowers..liked it.
2      the flowers were fresh and colorful tbh they were better than i expected thanks
3      very fresh flowers, delivered on time with beautiful packaging thank you floweraura for making our day special
4      roses quality is very nice
...        ...
495      ...
496      ...
497      ...
498      ...
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```

```
In [43]: # i would highly recommended had a sweet surprise to arrange for my friends anniversary from airoli had to deliver it to sakinaka tried zepto swiggy hence googled and found out this amazing website i ended up downloading then app and then adding
```

```
In [44]: import nltk
nltk.download('wordnet')
nltk.download('omw-1.4')
from nltk.stem import WordNetLemmatizer
lemmatizer = WordNetLemmatizer()

df["Lemmatized_Reviews"] = df["Reviews"].apply(
    lambda x: " ".join([lemmatizer.lemmatize(word) for word in x.split()]))
```

```
[nltk_data] Downloading package: wordnet
[nltk_data]   C:\Users\DELL\ApplData\Roaming\nltk_data...
[nltk_data] Package wordnet is already up-to-date!
[nltk_data] Downloading package cmce-1.4 to
[nltk_data]   C:\Users\DELL\ApplData\Roaming\nltk_data...
[nltk_data] Package cmce-1.4 is already up-to-date!
```

Sentiment Analysis:

```
In [44]: def analyze_sentiment(text):
    # Create Textblob object
    blob = TextBlob(text)

    # Get sentiment polarity
    polarity = blob.sentiment.polarity
    subjectivity = blob.sentiment.subjectivity

    # Define sentiment based on threshold
    if polarity >= 0.1:
        sentiment = "Positive"
    else:
        sentiment = "Negative"

    return polarity, subjectivity, sentiment
```

```
In [45]: df[["Polarity", "Subjectivity", "Sentiment"]] = df["Reviews"].apply(lambda x: pd.Series(analyze_sentiment(x)))
```

```
In [46]: df[["Reviews", "Polarity", "Subjectivity", "Sentiment"]].head(10)
```

```
Out[46]:      Reviews          Polarity  Subjectivity Sentiment
0  great experience with floweraura delivery was on time and the products were really nice thank you for making the birthday special  0.452381  0.507143  Positive
1      fresh flowers..liked it.  0.507143  0.500000  Positive
2      the flowers were fresh and colorful tbh they were better than i expected thanks  0.240000  0.400000  Positive
3      very fresh flowers, delivered on time with beautiful packaging thank you floweraura for making our day special  0.532381  0.740476  Positive
4      roses quality is very nice  0.780000  1.000000  Positive
...        ...
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500 rows × 10 columns

Data Analysis and Insights:

```
In [49]: sentiment_counts = df["Sentiment"].value_counts()
print(sentiment_counts)
```

```
0    great experience with floweraura delivery was on time and the products were really nice thank you for making the birthday special
1      fresh flowers..liked it.
```

```
2      the flowers were fresh and colorful tbh they were better than i expected thanks
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```
3      very fresh flowers, delivered on time with beautiful packaging thank you floweraura for making our day special
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4      roses quality is very nice
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