```
import pandas as pd
from textblob import TextBlob
import matplotlib.pyplot as plt
from wordcloud import WordCloud
```

```
df = pd.read_csv('/content/Women Dresses Reviews Dataset .csv')
df.head()
```

	s.no	age	division_name	department_name	class_name	clothing_id	title	review_text	alike_feedback_count	rating	recommend
0	0	40	General	Bottoms	Jeans	1028	Amazing fit and wash	Like other reviewers i was hesitant to spend t...	0	5	
1	1	62	General Petite	Tops	Blouses	850	Lovely and unique!	As is true of a bunch of the fall clothing pho...	12	5	
2	2	47	General Petite	Bottoms	Skirts	993	Meh	I so wanted this skirt to work, love	3	1	

```
Start coding or generate with AI.
```

```
df=df[['review_text','rating']].dropna()
```

```
df
```

	review_text	rating
0	Like other reviewers i was hesitant to spend t...	5
1	As is true of a bunch of the fall clothing pho...	5
2	I so wanted this skirt to work, love the desig...	1
3	Love love this! i was hesitant to buy this at ...	5
4	I absolutely love the retro look of this swims...	5
...	...	...
23481	I oot this dress in the blue. it fits great--h...	5
23482	I was very patient with this dress. i was wait...	5
23483	The deep v doesn't gape, and flatters the neck...	5
23484	I saw this dress online this morning, went int...	5
23485	Super cute jacket .perfect for fall i can't st...	5

22641 rows × 2 columns

```
df.reset_index(drop=True, inplace=True)
```

```
df
```

	review_text	rating
0	Like other reviewers i was hesitant to spend t...	5
1	As is true of a bunch of the fall clothing pho...	5
2	I so wanted this skirt to work, love the desig...	1
3	Love love this! i was hesitant to buy this at ...	5
4	I absolutely love the retro look of this swims...	5
...	...	...
22636	I oot this dress in the blue. it fits great--h...	5
22637	I was very patient with this dress. i was wait...	5
22638	The deep v doesn't gape, and flatters the neck...	5
22639	I saw this dress online this morning, went int...	5
22640	Super cute jacket .perfect for fall i can't st...	5

22641 rows × 2 columns

```
import nltk
nltk.download('stopwords')
from nltk.stem import PorterStemmer

ps =PorterStemmer()
import os
import pandas as pd
import numpy as np
from sklearn.preprocessing import LabelEncoder
import nltk
import re
from nltk.corpus import stopwords
from nltk.stem import PorterStemmer
from sklearn.feature_extraction.text import CountVectorizer
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import MultinomialNB
from sklearn.metrics import accuracy_score,classification_report,confusion_matrix
import pickle
import seaborn as sns
def preprocess_text(text):
    review=re.sub("[^a-zA-Z]"," ",text)
    review=review.lower()
    review=review.split()
    review=[ps.stem(word) for word in review if word not in set(stopwords.words("english"))]
    review=" ".join(review)
    return review
```

```
[nltk_data] Downloading package stopwords to /root/nltk_data...
[nltk_data]   Package stopwords is already up-to-date!
```

```
df['cleaned_review'] = df['review_text'].apply(preprocess_text)
```

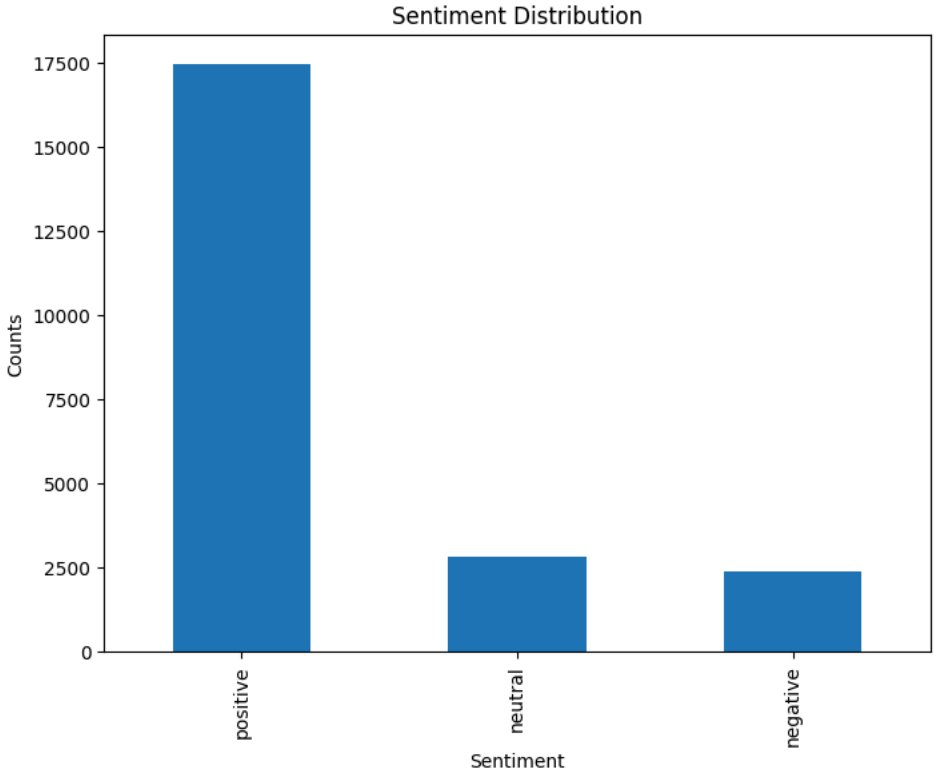
```
df
```

	review_text	rating	cleaned_review
0	Like other reviewers i was hesitant to spend t...	5	like review hesit spend much pair jean howev p...
1	As is true of a bunch of the fall clothing pho...	5	true bunch fall cloth photo color total wash m...
2	I so wanted this skirt to work, love the desig...	1	want skirt work love design way way long lb sm...
3	Love love this! i was hesitant to buy this at ...	5	love love hesit buy first review made seem big...
4	I absolutely love the retro look of this swims...	5	absolut love retro look swimsuit first saw blo...
...	...	...	...
22636	I oot this dress in the blue. it fits great--h...	5	oot dress blue fit great hit knee short awkwar...
22637	I was very patient with this dress. i was wait...	5	patient dress wait almost forev till dress get...
22638	The deep v doesn't gape, and flatters the neck...	5	deep v gape flatter necklin waist high side sl...
22639	I saw this dress online this morning, went int...	5	saw dress onlin morn went store afternoon walk...
22640	Super cute jacket .perfect for fall i can't st...	5	super cute jacket perfect fall stop wear

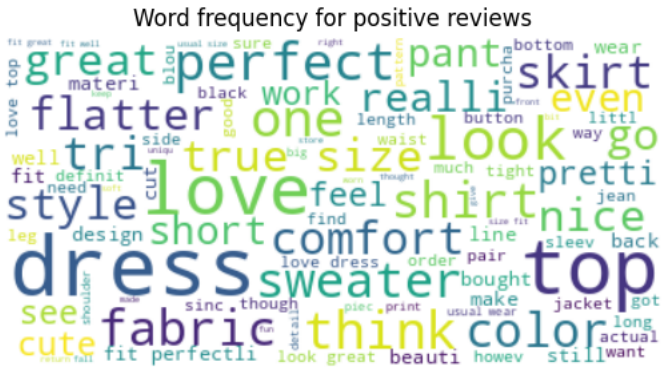
22641 rows × 3 columns

```
# Function to calculate sentiment
def sentiment_analysis(text):
    analysis = TextBlob(text)
    return analysis.sentiment.polarity  # Returns the polarity

# Apply the function
df['sentiment'] = df['rating'].apply(lambda x: 'positive' if x >= 4 else ('neutral' if x == 3 else 'negative'))
print(df['sentiment'].value_counts())

# Sentiment distribution
plt.figure(figsize=(8, 6))
df['sentiment'].value_counts().plot(kind='bar')
plt.title('Sentiment Distribution')
plt.xlabel('Sentiment')
plt.ylabel('Counts')
plt.show()
print()
```

```
sentiment
positive    17448
neutral      2823
negative     2370
Name: count, dtype: int64
```




```
# Word Cloud for Positive Sentiments
positive_reviews = ' '.join(text for text in df[df['sentiment'] == 'positive']['cleaned_review'])
wordcloud = WordCloud(max_font_size=50, max_words=100, background_color="white").generate(positive_reviews)
plt.figure()
plt.imshow(wordcloud, interpolation="bilinear")
plt.title('Word frequency for positive reviews')
plt.axis("off")
plt.show()
print()
```




```
# Word Cloud for Negative Sentiments
positive_reviews = ' '.join(text for text in df[df['sentiment'] == 'negative']['cleaned_review'])
wordcloud = WordCloud(max_font_size=50, max_words=100, background_color="white").generate(positive_reviews)
plt.figure()
plt.imshow(wordcloud, interpolation="bilinear")
plt.title('Word frequency for negative reviews')
plt.axis("off")
plt.show()
```