PROJECT FOR WEB SCRAPING

Web Scraping of Apple Macbook From Flipkart

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AIM OF THE PROJECT

The aim of this project is to create a Python Web scraping to extract specific details of the Apple Macbook from flipkart .

Using BeautifulSoup and Requests libraries, the objective is to gather essential information such as product names, prices, customer reviews, ratings, and comments associated with the Apple Macbook listings

Description:-

Web scraping of Flipkart products involves programmatically extracting information about various products listed on the Flipkart e-commerce platform. This process allows users to gather data such as product names, prices, ratings and reviews available on Flipkart's product pages.

To perform web scraping on Flipkart, you'd typically utilize tools, programming languages, or libraries like Python's Beautiful Soup. These tools can simulate human browsing behavior, sending requests to Flipkart's servers, retrieving the HTML content of product pages, and then parsing the HTML to extract the desired product information.

Project Steps :-

● **URL Retrieval**: You've defined the URL for the Apple Macbook product page on Flipkart. HTTP Request: Using the requests library, you've fetched the HTML content from the URL.

● **Parsing HTML:** Utilizing BeautifulSoup, you've parsed the HTML content to navigate and extract specific elements.

● **Data Extraction**: Extracted data includes product prices, customer names,comments, reviews, ratings, filtering.

● **Data Manipulation**: You've stored extracted data into lists and a pandas DataFrame.

● **Data Export**: Exported the DataFrame containing the extracted data to a CSV file.

Project Benefits:-

Market Analysis and Pricing Strategy: Extracting product details, pricing information, discounts, and stock availability helps in analyzing market trends, understanding competitor pricing strategies, and adjusting your own pricing strategy accordingly.

Competitor Monitoring: Regularly scraping Flipkart's product listings allows for tracking competitors' product ranges, availability, and pricing changes. This information helps in identifying gaps in the market or potential niches to explore.

Product Research and Development: Scraping Flipkart can provide insights into customer reviews, ratings, and feedback on products. This data aids in understanding customer preferences, identifying popular features, and guiding product development decisions.

Sales and Marketing Insights: Extracting data on product descriptions, specifications, and customer reviews can guide marketing campaigns, content creation, and SEO strategies by understanding what features or aspects customers value the most.

Price Comparison and Adjustment: Scraping Flipkart allows for comparing prices of similar products across different vendors. This enables businesses to adjust their pricing strategies to stay competitive in the market.

Consumer Behavior Analysis: Analyzing data from Flipkart's product reviews and ratings can provide valuable insights into consumer behavior, preferences, and sentiments toward certain products or brands.

Personalized Customer Experience: Insights gained from scraping Flipkart can be used to tailor product offerings, customer service, and shopping experiences to meet specific customer needs and preferences.

Output Format:
The scraped data is stored in a structured format, such as CSV or JSON, for easy integration with downstream processes.

Analysis of project:
Based on our analysis we conclude that this project has most sales in the Macbook in Flipkart as this product has no negative review and has average of 4.8

Apple Macbook Web Scraping from Flipkart Code command:

(1) Access Flipkart web site by using import requests URL and BeautifulSoup library.

```
In [7]: import pandas as pd
        import requests
        from bs4 import BeautifulSoup
```

```
In [8]: url ="https://www.flipkart.com/apple-2022-macbook-air-m2-8-gb-256-gb-ssd-mac-os-monterey-mly33hn-a/product-reviews/itm0946c05e63:
```

```
In [9]: r =requests.get(url)
        data =r.content
        print(data)
```

```
b'<!doctype html><html lang="en"><head><link href="https://rukminim2.flixcart.com" rel="preconnect"/><link rel="stylesheet" h
ref="//static-assets-web.flixcart.com/fk-p-linchpin-web/fk-cp-zion/css/app_modules.chunk.905c37.css"/><link rel="stylesheet"
href="//static-assets-web.flixcart.com/fk-p-linchpin-web/fk-cp-zion/css/app.chunk.615ed9.css"/><meta http-equiv="Content-typ
e" content="text/html; charset=utf-8"/><meta http-equiv="X-UA-Compatible" content="IE=Edge"/><meta property="fb:page_id" cont
ent="102988293558"/><meta property="fb:admins" content="658873552,624500995,100000233612389"/><meta name="robots" content="no
odp"/><link rel="shortcut icon" href="https:///www/promos/new/20150528-140547-favicon-retina.ico"/><link type="application/op
ensearchdescription+xml" rel="search" href="/osdd.xml?v=2"/><meta property="og:type" content="website"/><meta name="og_site_n
ame" property="og:site_name" content="Flipkart.com"/><link rel="apple-touch-icon" sizes="57x57" href="/apple-touch-icon-57x5
7.png"/><link rel="apple-touch-icon" sizes="72x72" href="/apple-touch-icon-72x72.png"/><link rel="apple-touch-icon" sizes="11
4x114" href="/apple-touch-icon-114x114.png"/><link rel="apple-touch-icon" sizes="144x144" href="/apple-touch-icon-144x144.pn
g"/><link rel="apple-touch-icon" href="/apple-touch-icon-57x57.png"/><meta name="twitter:card" content="app"><meta name="twit
ter:site" content="@flipkart"><meta name="twitter:creator" content="@flipkart"><meta name="twitter:title" content="Apple 2022
Macbook Air M2 8 Gb 256 Gb Ssd Mac Os Monterey Mly33hn A Reviews: Latest Review of Apple 2022 Macbook Air M2 8 Gb 256 Gb Ssd
Mac Os Monterey Mly33hn A | Price in India | Flipkart.com"><meta name="twitter:description" content="Shop for electronics, ap
parels & more using our Flipkart app Free shipping & COD."><meta name="twitter:app:country" content="in"><meta name="al:ios:a
pp_name" content="Flipkart"><meta name="al:ios:app_store_id" content="742044692"><meta name="twitter:app:name:iphone" content
="Flipkart"><meta name="twitter:app:id:iphone" content="742044692"><meta name="twitter:app:url:iphone" content="http://dl.fli
pkart.com/dl/home?"><meta name="twitter:app:name:ipad" content="Flipkart"><meta name="twitter:app:id:ipad" content="74204469
2"><meta name="twitter:app:url:ipad" content="http://dl.flipkart.com/dl/home?"><meta name="twitter:app:name:googleplay" conte
```

```
In [10]: #prettify the codes of html page
         soup =BeautifulSoup(data, "html.parser")
         soup.prettify
```

```
Out[10]: <bound method Tag.prettify of <!DOCTYPE html>
         <html lang="en"><head><link href="https://rukminim2.flixcart.com" rel="preconnect"/><link href="//static-assets-web.flixcart.
         com/fk-p-linchpin-web/fk-cp-zion/css/app_modules.chunk.905c37.css" rel="stylesheet"/><link href="//static-assets-web.flixcar
         t.com/fk-p-linchpin-web/fk-cp-zion/css/app.chunk.615ed9.css" rel="stylesheet"/><meta content="text/html; charset=utf-8" http-
         equiv="Content-type"/><meta content="IE=Edge" http-equiv="X-UA-Compatible"/><meta content="102988293558" property="fb:page_i
         d"/><meta content="658873552,624500995,100000233612389" property="fb:admins"/><meta content="noodp" name="robots"/><link href
         ="https:///www/promos/new/20150528-140547-favicon-retina.ico" rel="shortcut icon"/><link href="/osdd.xml?v=2" rel="search" ty
         pe="application/opensearchdescription+xml"/><meta content="website" property="og:type"/><meta content="Flipkart.com" name="og
         _site_name" property="og:site_name"/><link href="/apple-touch-icon-57x57.png" rel="apple-touch-icon" sizes="57x57"/><link hre
         f="/apple-touch-icon-72x72.png" rel="apple-touch-icon" sizes="72x72"/><link href="/apple-touch-icon-114x114.png" rel="apple-t
         ouch-icon" sizes="114x114"/><link href="/apple-touch-icon-144x144.png" rel="apple-touch-icon" sizes="144x144"/><link href="/a
         pple-touch-icon-57x57.png" rel="apple-touch-icon"/><meta content="app" name="twitter:card"/><meta content="@flipkart" name="t
         witter:site"/><meta content="@flipkart" name="twitter:creator"/><meta content="Apple 2022 Macbook Air M2 8 Gb 256 Gb Ssd Mac
         Os Monterey Mly33hn A Reviews: Latest Review of Apple 2022 Macbook Air M2 8 Gb 256 Gb Ssd Mac Os Monterey Mly33hn A | Price i
         n India | Flipkart.com" name="twitter:title"/><meta content="Shop for electronics, apparels &amp; more using our Flipkart app
         Free shipping &amp; COD." name="twitter:description"/><meta content="in" name="twitter:app:country"/><meta content="Flipkart"
         name="al:ios:app_name"/><meta content="742044692" name="al:ios:app_store_id"/><meta content="Flipkart" name="twitter:app:nam
         e:iphone"/><meta content="742044692" name="twitter:app:id:iphone"/><meta content="http://dl.flipkart.com/dl/home?" name="twit
         ter:app:url:iphone"/><meta content="Flipkart" name="twitter:app:name:ipad"/><meta content="742044692" name="twitter:app:id:ip
```

```
In [11]: title =soup.title
         print(type(soup))       #beautifulsoup
         print(type(title))      #tag
         print(type(title.string))  #navigablestring

         <class 'bs4.BeautifulSoup'>
         <class 'bs4.element.Tag'>
         <class 'bs4.element.NavigableString'>
```

(2) To access Apple Macbook price by using this class.

```
In [12]: title = soup.title
         title
```

```
Out[12]: <title>Apple 2022 Macbook Air M2 8 Gb 256 Gb Ssd Mac Os Monterey Mly33hn A Reviews: Latest Review of Apple 2022 Macbook Air M2
         8 Gb 256 Gb Ssd Mac Os Monterey Mly33hn A | Price in India | Flipkart.com</title>
```

```
In [13]: price =soup.find_all(class_="_30jeq3")
         price
```

```
Out[13]: [<div class="_30jeq3">₹1,04,990</div>]
```

```
In [14]: price[0].get_text()
```

```
Out[14]: '₹1,04,990'
```

(3) To access Apple Macbook Customer Name by using the respective class from its HTML content.

```
In [15]: names =soup.find_all(class_="_2sc7ZR _2V5EHH")
         names =list(names)
         print (type(names))
         print(names)
         len(names)
```

```
         <class 'list'>
         [<p class="_2sc7ZR _2V5EHH">Piyush Khare</p>, <p class="_2sc7ZR _2V5EHH">Vinu Viswan</p>, <p class="_2sc7ZR _2V5EHH">Mohit  Ana
         nd</p>, <p class="_2sc7ZR _2V5EHH">Yash Patil</p>, <p class="_2sc7ZR _2V5EHH">Riya Singh</p>, <p class="_2sc7ZR _2V5EHH">Haripr
         asad Mandal</p>, <p class="_2sc7ZR _2V5EHH">Pratyush Sahu</p>, <p class="_2sc7ZR _2V5EHH">Shatakshi Pathak</p>, <p class="_2sc7
         ZR _2V5EHH">kartik charande</p>, <p class="_2sc7ZR _2V5EHH">Rahul Anand</p>]
```

```
Out[15]: 10
```

```
In [16]: names[0].get_text()
```

```
Out[16]: 'Piyush Khare'
```

```
In [17]: c_names=[]
         for i in names:
             c_names.append(i.get_text())
         c_names
```

```
Out[17]: ['Piyush Khare',
          'Vinu Viswan',
          'Mohit  Anand',
          'Yash Patil',
          'Riya Singh',
          'Hariprasad Mandal',
          'Pratyush Sahu',
          'Shatakshi Pathak',
          'kartik charande',
          'Rahul Anand']
```

(4) To access Apple Macbook Customer Comment by using the respective class.

```
In [18]: comment =soup.find_all(class_ ="_2-N8zT")
         print(len(comment))
```

```
         10
```

```
In [19]: review_comment =[]
         for i in comment:
             review_comment.append(i.get_text())
         review_comment
```

```
Out[19]: ['Perfect product!',
          'Super!',
          'Awesome',
          'Mind-blowing purchase',
          'Fabulous!',
          'Just wow!',
          'Brilliant',
          'Good',
          'Worth every penny',
          'Highly recommended']
```

(5)To access Apple Macbook Customer Review star by using the respective class.

```
In [36]: stars =soup.find_all('div', class_ ="_3LWZlK _1BLPMq")
         print(stars)
```

[<div class="_3LWZlK _1BLPMq">5<img class="_1wB99o" src="data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAw
MC9zdmciIHdpZHRoPSIxMyIgaGVpZ2h0PSIxMiI+PHBhdGggZmlsbD0iI0ZGRiIgZD0iTTYuNSA5LjQzQzOwwtMy42NzQgMi4yMy45NC00LjI2LTMuMjEtMi44ODMgNC4
yNTQtLjQwNEw2LjUuMTEybDEuNjNjNC4wMSA0LjI1NC40MDQtMy4yMySAyLjg4Mi45NCA0LjI2eiIvPjwvc3ZnPg=="/></div>, <div class="_3LWZlK _1BLPM
q">5<img class="_1wB99o" src="data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdmciIHdpZHRoPSIxMyIgaGV
pZ2h0PSIxMiI+PHBhdGggZmlsbD0iI0ZGRiIgZD0iTTYuNSA5LjQzQzOwwtMy42NzQgMi4yMy45NC00LjI2LTMuMjEtMi44ODMgNC4yNTQtLjQwNEw2LjUuMTEybDEuNj
kgNC4wMSA0LjI1NC40MDQtMy4yMySAyLjg4Mi45NCA0LjI2eiIvPjwvc3ZnPg=="/></div>, <div class="_3LWZlK _1BLPMq">5<img class="_1wB99o" src
="data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdmciIHdpZHRoPSIxMyIgaGVpZ2h0PSIxMiI+PHBhdGggZmlsbD0
iI0ZGRiIgZD0iTTYuNSA5LjQzQzOwwtMy42NzQgMi4yMy45NC00LjI2LTMuMjEtMi44ODMgNC4yNTQtLjQwNEw2LjUuMTEybDEuNjkgNC4wMSA0LjI1NC40MDQtMy4yMS
AyLjg4Mi45NCA0LjI2eiIvPjwvc3ZnPg=="/></div>, <div class="_3LWZlK _1BLPMq">5<img class="_1wB99o" src="data:image/svg+xml;base64,
PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdmciIHdpZHRoPSIxMyIgaGVpZ2h0PSIxMiI+PHBhdGggZmlsbD0iI0ZGRiIgZD0iTTYuNSA5LjQzQzOww
tMy42NzQgMi4yMy45NC00LjI2LTMuMjEtMi44ODMgNC4yNTQtLjQwNEw2LjUuMTEybDEuNjkgNC4wMSA0LjI1NC40MDQtMy4yMySAyLjg4Mi45NCA0LjI2eiIvPjwvc3Z
nPg=="/></div>, <div class="_3LWZlK _1BLPMq">5<img class="_1wB99o" src="data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3
dy53My5vcmcvMjAwMC9zdmciIHdpZHRoPSIxMyIgaGVpZ2h0PSIxMiI+PHBhdGggZmlsbD0iI0ZGRiIgZD0iTTYuNSA5LjQzQzOwwtMy42NzQgMi4yMy45NC00LjI2LTM
uMjEtMi44ODMgNC4yNTQtLjQwNEw2LjUuMTEybDEuNjkgNC4wMSA0LjI1NC40MDQtMy4yMySAyLjg4Mi45NCA0LjI2eiIvPjwvc3ZnPg=="/></div>, <div class
="_3LWZlK _1BLPMq">5<img class="_1wB99o" src="data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdmciIHd
pZHRoPSIxMyIgaGVpZ2h0PSIxMiI+PHBhdGggZmlsbD0iI0ZGRiIgZD0iTTYuNSA5LjQzQzOwwtMy42NzQgMi4yMy45NC00LjI2LTMuMjEtMi44ODMgNC4yNTQtLjQwNE
w2LjUuMTEybDEuNjkgNC4wMSA0LjI1NC40MDQtMy4yMySAyLjg4Mi45NCA0LjI2eiIvPjwvc3ZnPg=="/></div>, <div class="_3LWZlK _1BLPMq">5<img cla
ss="_1wB99o" src="data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdmciIHdpZHRoPSIxMyIgaGVpZ2h0PSIxMiI
+PHBhdGggZmlsbD0iI0ZGRiIgZD0iTTYuNSA5LjQzQzOwwtMy42NzQgMi4yMy45NC00LjI2LTMuMjEtMi44ODMgNC4yNTQtLjQwNEw2LjUuMTEybDEuNjkgNC4wMSA0Lj
I1NC40MDQtMy4yMySAyLjg4Mi45NCA0LjI2eiIvPjwvc3ZnPg=="/></div>, <div class="_3LWZlK _1BLPMq">3<img class="_1wB99o" src="data:imag
e/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdmciIHdpZHRoPSIxMyIgaGVpZ2h0PSIxMiI+PHBhdGggZmlsbD0iI0ZGRiIgZD
0iTTYuNSA5LjQzQzOwwtMy42NzQgMi4yMy45NC00LjI2LTMuMjEtMi44ODMgNC4yNTQtLjQwNEw2LjUuMTEybDEuNjkgNC4wMSA0LjI1NC40MDQtMy4yMySAyLjg4Mi45N
CA0LjI2eiIvPjwvc3ZnPg=="/></div>, <div class="_3LWZlK _1BLPMq">5<img class="_1wB99o" src="data:image/svg+xml;base64,PHN2ZyB4bWx
ucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdmciIHdpZHRoPSIxMyIgaGVpZ2h0PSIxMiI+PHBhdGggZmlsbD0iI0ZGRiIgZD0iTTYuNSA5LjQzQzOwwtMy42NzQgMi
4yMy45NC00LjI2LTMuMjEtMi44ODMgNC4yNTQtLjQwNEw2LjUuMTEybDEuNjkgNC4wMSA0LjI1NC40MDQtMy4yMySAyLjg4Mi45NCA0LjI2eiIvPjwvc3ZnPg=="/></
div>, <div class="_3LWZlK _1BLPMq">5<img class="_1wB99o" src="data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmc
vMjAwMC9zdmciIHdpZHRoPSIxMyIgaGVpZ2h0PSIxMiI+PHBhdGggZmlsbD0iI0ZGRiIgZD0iTTYuNSA5LjQzQzOwwtMy42NzQgMi4yMy45NC00LjI2LTMuMjEtMi44OD
MgNC4yNTQtLjQwNEw2LjUuMTEybDEuNjkgNC4wMSA0LjI1NC40MDQtMy4yMySAyLjg4Mi45NCA0LjI2eiIvPjwvc3ZnPg=="/></div>]

```
In [21]: s_stars =[]
         for i in stars:
             s_stars. append (i.get_text())
         s_stars
```

```
Out[21]: ['5', '5', '5', '5', '5', '5', '5', '3', '5', '5']
```

(6)To access Apple Macbook Customer Comment by using the respective class.

```
In [37]: review = soup.find_all('div',class_ ="t-ZTKy")
         print(review)
```

[<div class="t-ZTKy"><div><div class="">Loved it, it's my first MacBook that I earned from my hardwork 😍❤</div><span class
="_1H-bmy">READ MORE</div></div>, <div class="t-ZTKy"><div><div class="">Super product</div><span class="_1
H-bmy">READ MORE</div></div>, <div class="t-ZTKy"><div><div class="">When i ordered and came to know about
seller review,i was scared that in what condition i will get macbook. but i was wrong.

This is my first macbook and i
am fully satisfied with the product with original packaging of apple and got genuine product.

It's very thin and light
and looks very premium.

As A software developer, i installed intellij idea ide and guess what.
It's magic,it is op
ening just in a click and within 5 seconds.
Great performance, no heating issue, sound quality awesome an...</div><span cla
ss="_1BWGvX">READ MORE</div></div>, <div class="t-ZTKy"><div><div class="">just love how apple is in their
own league!!</div>READ MORE</div></div>, <div class="t-ZTKy"><div><div class="">Such
a great deal.. very happy with the performance and battery life..Origional product..🤩❤
Thank you Flipkart..!!!</div><spa
n class="_1H-bmy">READ MORE</div></div>, <div class="t-ZTKy"><div><div class="">Its really very good and co
mpact device.</div>READ MORE</div></div>, <div class="t-ZTKy"><div><div class="">Its
very good product.</div>READ MORE</div></div>, <div class="t-ZTKy"><div><div class
="">Note--
It's not for everyone.
You can't attach dual monitor setup easily
You need to buy 3rd party adopter at y
our risk. I talked to Apple their port support only mirroring, not extended screen feature.

Related to Ms Excel, norma
l excel will work
But will not be able to run high macro based files.

For port and accessories, there is heating i
ssues, hence be ready for another 7000 for display adopter and 2000-5000 for usb hub

Rest UI and using experience is v
ery smooth, unbelievable when i c...</div>READ MORE</div></div>, <div class="t-ZTKy">
<div><div class="">Worth every penny u spend</div>READ MORE</div></div>, <div class
="t-ZTKy"><div><div class="">This is the first MacBook I ever have. And I must say no one can match Apple product.</div><span c
lass="_1H-bmy">READ MORE</div></div>]

```
In [23]: cust_review =[]
         for i in review:
             cust_review.append(i.get_text())
         cust_review
```

```
Out[23]: ["Loved it, it's my first MacBook that I earned from my hardwork 😍 ❤ READ MORE",
          'Super productREAD MORE',
          "When i ordered and came to know about seller review,i was scared that in what condition i will get macbook. but i was wrong.T
          his is my first macbook and i am fully satisfied with the product with original packaging of apple and got genuine product.It's
          very thin and light and looks very premium.As A software developer, i installed intellij idea ide and guess what.It's magic,it
          is opening just in a click and within 5 seconds.Great performance, no heating issue, sound quality awesome an...READ MORE",
          'just love how apple is in their own league!!READ MORE',
          'Such a great deal.. very happy with the performance and battery life..Origional product..🎉❤ Thank you Flipkart..!!!READ MOR
          E',
          'Its really very good and compact device.READ MORE',
          'Its very good product.READ MORE',
          "Note--It's not for everyone.You can't attach dual monitor setup easilyYou need to buy 3rd party adopter at your risk. I talke
          d to Apple their port support only mirroring, not extended screen feature.Related to Ms Excel, normal excel will workBut will n
          ot be able to run high macro based files.For port and accessories, there is heating issues, hence be ready for another 7000 for
          display adopter and 2000-5000 for usb hubRest UI and using experience is very smooth, unbelievable when i c...READ MORE",
          'Worth every penny u spendREAD MORE',
          'This is the first MacBook I ever have. And I must say no one can match Apple product.READ MORE']
```

(7) To arrange properly in column all above data by using -Pandas library

```
In [24]: import pandas as pd
```

```
In [25]: df= pd.DataFrame({"customers_Name":c_names,"Review_Comment":review_comment,"review_stars":s_stars,"review":cust_review})
         df
```

Out[25]:

	customers_Name	Review_Comment	review_stars	review
0	Piyush Khare	Perfect product!	5	Loved it, it's my first MacBook that I earned ...
1	Vinu Viswan	Super!	5	Super productREAD MORE
2	Mohit Anand	Awesome	5	When i ordered and came to know about seller r...
3	Yash Patil	Mind-blowing purchase	5	just love how apple is in their own league!!RE...
4	Riya Singh	Fabulous!	5	Such a great deal.. very happy with the perfor...
5	Hariprasad Mandal	Just wow!	5	Its really very good and compact device.READ MORE
6	Pratyush Sahu	Brilliant	5	Its very good product.READ MORE
7	Shatakshi Pathak	Good	3	Note--It's not for everyone.You can't attach d...
8	kartik charande	Worth every penny	5	Worth every penny u spendREAD MORE
9	Rahul Anand	Highly recommended	5	This is the first MacBook I ever have. And I m...

(8) To see quick overview of the central tendency, spread, and distribution of the data in the DataFrame.

```
In [28]: df.to_csv("apple_macbook.csv")
```

```
In [29]: import os
         os.getcwd
```

```
Out[29]: <function nt.getcwd()>
```

```
In [30]: df1.describe()
```

Out[30]:

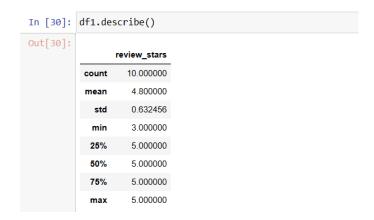|	review_stars
count	10.000000
mean	4.800000
std	0.632456
min	3.000000
25%	5.000000
50%	5.000000
75%	5.000000
max	5.000000

This summary can help in identifying outliers, understanding the range of values, and getting a general sense of the data distribution for further analysis

(9) Then store above all data in CSV file and again open this file in application.

```
In [26]: import os
         os.getcwd()

Out[26]: 'C:\\Users\\HP'
```

```
In [27]: df.to_csv("apple_macbook.csv",index= False )
         df1= pd.read_csv("apple_macbook.csv")
         df1
```

Out[27]:

	customers_Name	Review_Comment	review_stars	review
0	Piyush Khare	Perfect product!	5	Loved it, it's my first MacBook that I earned ...
1	Vinu Viswan	Super!	5	Super productREAD MORE
2	Mohit Anand	Awesome	5	When i ordered and came to know about seller r...
3	Yash Patil	Mind-blowing purchase	5	just love how apple is in their own league!IRE...
4	Riya Singh	Fabulous!	5	Such a great deal.. very happy with the perfor...
5	Hariprasad Mandal	Just wow!	5	Its really very good and compact device.READ MORE
6	Pratyush Sahu	Brilliant	5	Its very good product.READ MORE
7	Shatakshi Pathak	Good	3	Note--It's not for everyone.You can't attach d...
8	kartik charande	Worth every penny	5	Worth every penny u spendREAD MORE
9	Rahul Anand	Highly recommended	5	This is the first MacBook I ever have. And I m...

(10) Find max,mean,min etc

```
In [30]: df1.describe()
```

Out[30]:

	review_stars
count	10.000000
mean	4.800000
std	0.632456
min	3.000000
25%	5.000000
50%	5.000000
75%	5.000000
max	5.000000

(11) Find INFO of data

```
In [31]: df1.info()

         <class 'pandas.core.frame.DataFrame'>
         RangeIndex: 10 entries, 0 to 9
         Data columns (total 4 columns):
          #   Column          Non-Null Count  Dtype
         ---  ------          --------------  -----
          0   customers_Name  10 non-null     object
          1   Review_Comment  10 non-null     object
          2   review_stars    10 non-null     int64
          3   review          10 non-null     object
         dtypes: int64(1), object(3)
         memory usage: 452.0+ bytes
```

(13) sort the name of Customer in Ascending order

```
In [32]: df1.customers_Name.sort_values()

Out[32]: 5      Hariprasad Mandal
         2            Mohit  Anand
         0           Piyush Khare
         6          Pratyush Sahu
         9            Rahul Anand
         4             Riya Singh
         7        Shatakshi Pathak
         1            Vinu Viswan
         3             Yash Patil
         8         kartik charande
         Name: customers_Name, dtype: object
```

(14) Sort the Names of Customer in Descending order

```
In [33]: df1.customers_Name.sort_values(ascending=False)

Out[33]: 8         kartik charande
         3             Yash Patil
         1            Vinu Viswan
         7        Shatakshi Pathak
         4             Riya Singh
         9            Rahul Anand
         6          Pratyush Sahu
         0           Piyush Khare
         2            Mohit  Anand
         5      Hariprasad Mandal
         Name: customers_Name, dtype: object
```

(15) Find who had given full rating

```
In [34]: df1[df1.review_stars==5]
Out[34]:
```

	customers_Name	Review_Comment	review_stars	review
0	Piyush Khare	Perfect product!	5	Loved it, it's my first MacBook that I earned ...
1	Vinu Viswan	Super!	5	Super productREAD MORE
2	Mohit Anand	Awesome	5	When i ordered and came to know about seller r...
3	Yash Patil	Mind-blowing purchase	5	just love how apple is in their own league!!RE...
4	Riya Singh	Fabulous!	5	Such a great deal.. very happy with the perfor...
5	Hariprasad Mandal	Just wow!	5	Its really very good and compact device.READ MORE
6	Pratyush Sahu	Brilliant	5	Its very good product.READ MORE
8	kartik charande	Worth every penny	5	Worth every penny u spendREAD MORE
9	Rahul Anand	Highly recommended	5	This is the first MacBook I ever have. And I m...

(16) Find who gave less than 5 rating

```
In [35]: df1[df1.review_stars<5]
```

Out[35]:

	customers_Name	Review_Comment	review_stars	review
7	Shatakshi Pathak	Good	3	Note--It's not for everyone.You can't attach d...

CONCLUSION

The web scraping process for the **Apple Macbook** Flipkart product page was
successful, The extracted data can be used for further analysis and revealed
customer sentiments, and product popularity metrics. Regular monitoring and
maintenance are recommended to adapt to any changes in the website
structure.