

"QUESTIONS"

1. Display Top 10 Rows of The Dataset
2. Check Last 10 Rows of The Dataset
3. Check Datatype of Each Column
4. Check null values in the dataset
5. How many rows and columns are there in our Dataset?
6. Highest and Lowest Purchase Prices.
7. Average Purchase Price
8. How many people have French 'fr' as their Language?
9. Job Title Contains Engineer
10. Find The Email of the person with the following IP Address: 132.207.160.22
11. How many People have Mastercard as their Credit Card Provider and made a purchase above 50?
12. Find the email of the person with the following Credit Card Number: 4664825258997302
13. How many people purchase during the AM and how many people purchase during PM?
14. How many people have a credit card that expires in 2020?
15. What are the top 5 most popular email providers (e.g. gmail.com, yahoo.com, etc...)

```
from google.colab import files
files.upload()
```



Choose Files kaggle.json

- **kaggle.json**(application/json) - 65 bytes, last modified: 3/19/2025 - 100% done
- Saving kaggle.json to kaggle.json
- ```
{'kaggle.json': b'{"username":"onkar0629","key":"d3b74c8466360314c093d84f478041ec"}' }
```

```
import os
os.makedirs("/root/.kaggle", exist_ok=True)
!mv kaggle.json /root/.kaggle/
```

```
!chmod 600 /root/.kaggle/kaggle.json
```

```
!kaggle datasets download -d utkarsharya/ecommerce-purchases
```



Warning: Looks like you're using an outdated API Version, please consider updating (serv  
Dataset URL: <https://www.kaggle.com/datasets/utkarsharya/ecommerce-purchases>  
License(s): unknown  
ecommerce-purchases.zip: Skipping, found more recently modified local copy (use --force

```
import zipfile
```

```
with zipfile.ZipFile("ecommerce-purchases.zip", "r") as zip_ref:
 zip_ref.extractall("ecommerce_data")
```

```
import pandas as pd
```

```
df = pd.read_csv("ecommerce_data/Ecommerce Purchases")
print(df.head()) # Display the first 5 rows
```



|   | Address                                           | Lot   | AM or PM | \ |
|---|---------------------------------------------------|-------|----------|---|
| 0 | 16629 Pace Camp Apt. 448\nAlexisborough, NE 77... | 46 in | PM       |   |
| 1 | 9374 Jasmine Spurs Suite 508\nSouth John, TN 8... | 28 rn | PM       |   |
| 2 | Unit 0065 Box 5052\nDPO AP 27450                  | 94 vE | PM       |   |
| 3 | 7780 Julia Fords\nNew Stacy, WA 45798             | 36 vm | PM       |   |
| 4 | 23012 Munoz Drive Suite 337\nNew Cynthia, TX 5... | 20 IE | AM       |   |

|   | Browser Info                                      | \ |
|---|---------------------------------------------------|---|
| 0 | Opera/9.56.(X11; Linux x86_64; sl-SI) Presto/2... |   |
| 1 | Opera/8.93.(Windows 98; Win 9x 4.90; en-US) Pr... |   |
| 2 | Mozilla/5.0 (compatible; MSIE 9.0; Windows NT ... |   |
| 3 | Mozilla/5.0 (Macintosh; Intel Mac OS X 10_8_0 ... |   |
| 4 | Opera/9.58.(X11; Linux x86_64; it-IT) Presto/2... |   |

|   | Company                         | Credit Card      | CC Exp Date | \ |
|---|---------------------------------|------------------|-------------|---|
| 0 | Martinez-Herman                 | 6011929061123406 | 02/20       |   |
| 1 | Fletcher, Richards and Whitaker | 3337758169645356 | 11/18       |   |
| 2 | Simpson, Williams and Pham      | 675957666125     | 08/19       |   |
| 3 | Williams, Marshall and Buchanan | 6011578504430710 | 02/24       |   |
| 4 | Brown, Watson and Andrews       | 6011456623207998 | 10/25       |   |

|   | CC Security Code | CC Provider                 | \ |
|---|------------------|-----------------------------|---|
| 0 | 900              | JCB 16 digit                |   |
| 1 | 561              | Mastercard                  |   |
| 2 | 699              | JCB 16 digit                |   |
| 3 | 384              | Discover                    |   |
| 4 | 678              | Diners Club / Carte Blanche |   |

|   | Email                                                                              | Job                                    | \ |
|---|------------------------------------------------------------------------------------|----------------------------------------|---|
| 0 | <a href="mailto:pdunlap@yahoo.com">pdunlap@yahoo.com</a>                           | Scientist, product/process development |   |
| 1 | <a href="mailto:anthony41@reed.com">anthony41@reed.com</a>                         | Drilling engineer                      |   |
| 2 | <a href="mailto:amymiller@morales-harrison.com">amymiller@morales-harrison.com</a> | Customer service manager               |   |
| 3 | <a href="mailto:brent16@olson-robinson.info">brent16@olson-robinson.info</a>       | Drilling engineer                      |   |
| 4 | <a href="mailto:christopherwright@gmail.com">christopherwright@gmail.com</a>       | Fine artist                            |   |

|   | IP Address      | Language | Purchase Price |
|---|-----------------|----------|----------------|
| 0 | 149.146.147.205 | el       | 98.14          |
| 1 | 15.160.41.51    | fr       | 70.73          |
| 2 | 132.207.160.22  | de       | 0.95           |
| 3 | 30.250.74.19    | es       | 78.04          |
| 4 | 24.140.33.94    | es       | 77.82          |

```
import pandas as pd
```

```
data = pd.read_csv("ecommerce_data/Ecommerce Purchases")
data
```



|      | Address                                                 | Lot      | AM<br>or<br>PM | Browser Info                                                | Company                                  | Credit Card      | CC<br>Exp<br>Date |
|------|---------------------------------------------------------|----------|----------------|-------------------------------------------------------------|------------------------------------------|------------------|-------------------|
| 0    | 16629 Pace Camp Apt.<br>448\nAlexisborough,<br>NE 77... | 46<br>in | PM             | Opera/9.56.(X11;<br>Linux x86_64; sl-<br>SI) Presto/2...    | Martinez-<br>Herman                      | 6011929061123406 | 02/20             |
| 1    | 9374 Jasmine Spurs<br>Suite 508\nSouth John,<br>TN 8... | 28<br>rn | PM             | Opera/8.93.<br>(Windows 98; Win<br>9x 4.90; en-US)<br>Pr... | Fletcher,<br>Richards<br>and<br>Whitaker | 3337758169645356 | 11/18             |
| 2    | Unit 0065 Box<br>5052\nDPO AP 27450                     | 94<br>vE | PM             | Mozilla/5.0<br>(compatible; MSIE<br>9.0; Windows NT<br>...  | Simpson,<br>Williams<br>and<br>Pham      | 675957666125     | 08/19             |
| 3    | 7780 Julia Fords\nNew<br>Stacy, WA 45798                | 36<br>vm | PM             | Mozilla/5.0<br>(Macintosh; Intel<br>Mac OS X 10_8_0<br>...  | Williams,<br>Marshall<br>and<br>Buchanan | 6011578504430710 | 02/24             |
| 4    | 23012 Munoz Drive<br>Suite 337\nNew<br>Cynthia, TX 5... | 20<br>IE | AM             | Opera/9.58.(X11;<br>Linux x86_64; it-<br>IT) Presto/2...    | Brown,<br>Watson<br>and<br>Andrews       | 6011456623207998 | 10/25             |
| ...  | ...                                                     | ...      | ...            | ...                                                         | ...                                      | ...              | ...               |
| 9995 | 966 Castaneda<br>Locks\nWest Juliafurt,<br>CO 96415     | 92<br>XI | PM             | Mozilla/5.0<br>(Windows NT 5.1)<br>AppleWebKit/5352<br>...  | Randall-<br>Sloan                        | 342945015358701  | 03/22             |
| 9996 | 832 Curtis Dam Suite<br>785\nNorth<br>Edwardburgh, T... | 41<br>JY | AM             | Mozilla/5.0<br>(compatible; MSIE<br>9.0; Windows NT<br>...  | Hale,<br>Collins<br>and<br>Wilson        | 210033169205009  | 07/25             |
| 9997 | Unit 4434 Box<br>6343\nDPO AE 28026-<br>0283            | 74<br>Zh | AM             | Mozilla/5.0<br>(Macintosh; U;<br>Intel Mac OS X<br>10_7...  | Anderson<br>Ltd                          | 6011539787356311 | 05/21             |
| 9998 | 0096 English<br>Rest\nRoystad, IA<br>12457              | 74<br>cL | PM             | Mozilla/5.0<br>(Macintosh; Intel<br>Mac OS X<br>10_8_8;...  | Cook Inc                                 | 180003348082930  | 11/17             |
| 9999 | 40674 Barrett<br>Stravenue\nGrimesville,<br>WI 79682    | 64<br>Hr | AM             | Mozilla/5.0 (X11;<br>Linux i686;<br>rv:1.9.5.20) Gec...     | Greene<br>Inc                            | 4139972901927273 | 02/19             |

10000 rows × 14 columns



Next steps:

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#1. Display Top 10 Rows of The Dataset  
data.head(10)



|   | Address                                                 | Lot      | AM<br>or<br>PM | Browser Info                                               | Company                                  | Credit Card      | Ex<br>Dat |
|---|---------------------------------------------------------|----------|----------------|------------------------------------------------------------|------------------------------------------|------------------|-----------|
| 0 | 16629 Pace Camp Apt.<br>448\nAlexisborough, NE<br>77... | 46<br>in | PM             | Opera/9.56.(X11;<br>Linux x86_64; sl-SI)<br>Presto/2...    | Martinez-<br>Herman                      | 6011929061123406 | 02/2      |
| 1 | 9374 Jasmine Spurs Suite<br>508\nSouth John, TN 8...    | 28<br>rn | PM             | Opera/8.93.<br>(Windows 98; Win<br>9x 4.90; en-US) Pr...   | Fletcher,<br>Richards<br>and<br>Whitaker | 3337758169645356 | 11/1      |
| 2 | Unit 0065 Box 5052\nDPO<br>AP 27450                     | 94<br>vE | PM             | Mozilla/5.0<br>(compatible; MSIE<br>9.0; Windows NT ...    | Simpson,<br>Williams<br>and<br>Pham      | 675957666125     | 08/1      |
| 3 | 7780 Julia Fords\nNew<br>Stacy, WA 45798                | 36<br>vm | PM             | Mozilla/5.0<br>(Macintosh; Intel<br>Mac OS X 10_8_0<br>... | Williams,<br>Marshall<br>and<br>Buchanan | 6011578504430710 | 02/2      |
| 4 | 23012 Munoz Drive Suite<br>337\nNew Cynthia, TX 5...    | 20<br>IE | AM             | Opera/9.58.(X11;<br>Linux x86_64; it-IT)<br>Presto/2...    | Brown,<br>Watson<br>and<br>Andrews       | 6011456623207998 | 10/2      |
| 5 | 7502 Powell Mission Apt.<br>768\nTravisland, VA 3...    | 21<br>XT | PM             | Mozilla/5.0<br>(Macintosh; U; PPC<br>Mac OS X 10_8_5...    | Silva-<br>Anderson                       | 30246185196287   | 07/2      |
| 6 | 93971 Conway<br>Causeway\nAndersonburgh,<br>AZ 75107    | 96<br>Xt | AM             | Mozilla/5.0<br>(compatible; MSIE<br>7.0; Windows NT ...    | Gibson<br>and Sons                       | 6011398782655569 | 07/2      |
| 7 | 260 Rachel Plains Suite<br>366\nCastroberg, WV 24...    | 96<br>pG | PM             | Mozilla/5.0 (X11;<br>Linux i686)<br>AppleWebKit/5350...    | Marshall-<br>Collins                     | 561252141909     | 06/2      |
| 8 | 2129 Dylan Burg\nNew<br>Michelle, ME 28650              | 45<br>JN | PM             | Mozilla/5.0<br>(Macintosh; U; Intel<br>Mac OS X 10_7...    | Galloway<br>and Sons                     | 180041795790001  | 04/2      |
| 9 | 3795 Dawson<br>Extensions\nLake Tinafort,<br>ID 88739   | 15<br>Ug | AM             | Mozilla/5.0 (X11;<br>Linux i686;<br>rv:1.9.7.20) Gec...    | Rivera,<br>Buchanan<br>and<br>Ramirez    | 4396283918371    | 01/1      |

Next steps:

[Generate code with data](#)[View recommended plots](#)[New interactive sheet](#)

```
#2 Check Last 10 Rows of The Dataset
data.tail(10)
```



|      | Address                                           | Lot   | AM<br>or<br>PM | Browser Info                                      | Company                    | Credit Card      | CC<br>Exp<br>Date |
|------|---------------------------------------------------|-------|----------------|---------------------------------------------------|----------------------------|------------------|-------------------|
| 9990 | 75731 Molly Springs\nWest Danielle, VT 96934-5102 | 93 ty | PM             | Mozilla/5.0 (Macintosh; Intel Mac OS X 10_7_4;... | Pace, Vazquez and Richards | 869968197049750  | 04/24             |
| 9991 | PSC 8165, Box 8498\nAPO AP 60327-0346             | 50 dA | AM             | Mozilla/5.0 (compatible; MSIE 8.0; Windows NT ... | Snyder Inc                 | 4221582137197481 | 02/24             |
| 9992 | 885 Allen Mountains Apt. 230\nWallhaven, LA 16995 | 40 vH | PM             | Mozilla/5.0 (Macintosh; PPC Mac OS X 10_6_5) A... | Wells Ltd                  | 4664825258997302 | 10/20             |
| 9993 | 7555 Larson Locks Suite 229\nEllisburgh, MA 34... | 72 jg | PM             | Mozilla/5.0 (Macintosh; U; Intel Mac OS X 10_8... | Colon and Sons             | 30025560104631   | 10/25             |
| 9994 | 6276 Rojas Hollow\nLake Louis, WY 56410-7837      | 93 Ex | PM             | Opera/9.68.(X11; Linux x86_64; sl-SI) Presto/2... | Ritter-Smith               | 3112186784121077 | 01/25             |
| 9995 | 966 Castaneda Locks\nWest Juliafurt, CO 96415     | 92 XI | PM             | Mozilla/5.0 (Windows NT 5.1) AppleWebKit/5352 ... | Randall-Sloan              | 342945015358701  | 03/22             |
| 9996 | 832 Curtis Dam Suite 785\nNorth Edwardburgh, T... | 41 JY | AM             | Mozilla/5.0 (compatible; MSIE 9.0; Windows NT ... | Hale, Collins and Wilson   | 210033169205009  | 07/25             |
| 9997 | Unit 4434 Box 6343\nDPO AE 28026-0283             | 74 Zh | AM             | Mozilla/5.0 (Macintosh; U; Intel Mac OS X 10_7... | Anderson Ltd               | 6011539787356311 | 05/21             |
| 9998 | 0096 English Rest\nRoystad, IA 12457              | 74 cL | PM             | Mozilla/5.0 (Macintosh; Intel Mac OS X 10_8_8;... | Cook Inc                   | 180003348082930  | 11/17             |
| 9999 | 40674 Barrett Stravenue\nGrimesville, WI 79682    | 64 Hr | AM             | Mozilla/5.0 (X11; Linux i686; rv:1.9.5.20) Gec... | Greene Inc                 | 4139972901927273 | 02/19             |



#3 Check Datatype of Each Column  
data.dtypes



0

---

|                         |         |
|-------------------------|---------|
| <b>Address</b>          | object  |
| <b>Lot</b>              | object  |
| <b>AM or PM</b>         | object  |
| <b>Browser Info</b>     | object  |
| <b>Company</b>          | object  |
| <b>Credit Card</b>      | int64   |
| <b>CC Exp Date</b>      | object  |
| <b>CC Security Code</b> | int64   |
| <b>CC Provider</b>      | object  |
| <b>Email</b>            | object  |
| <b>Job</b>              | object  |
| <b>IP Address</b>       | object  |
| <b>Language</b>         | object  |
| <b>Purchase Price</b>   | float64 |

**dtype:** object

```
#4 Check null values in the dataset
data.isnull().sum()
```





|                         | 0 |
|-------------------------|---|
| <b>Address</b>          | 0 |
| <b>Lot</b>              | 0 |
| <b>AM or PM</b>         | 0 |
| <b>Browser Info</b>     | 0 |
| <b>Company</b>          | 0 |
| <b>Credit Card</b>      | 0 |
| <b>CC Exp Date</b>      | 0 |
| <b>CC Security Code</b> | 0 |
| <b>CC Provider</b>      | 0 |
| <b>Email</b>            | 0 |
| <b>Job</b>              | 0 |
| <b>IP Address</b>       | 0 |
| <b>Language</b>         | 0 |
| <b>Purchase Price</b>   | 0 |

**dtype:** int64

#5 How many rows and columns are there in our Dataset?

```
len(data.columns)
```



14

```
len(data)
```



10000

```
data.info()
```



```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10000 entries, 0 to 9999
Data columns (total 14 columns):
Column Non-Null Count Dtype
--- -
0 Address 10000 non-null object
1 Lot 10000 non-null object
2 AM or PM 10000 non-null object
3 Browser Info 10000 non-null object
4 Company 10000 non-null object
5 Credit Card 10000 non-null int64
```

```
6 CC Exp Date 10000 non-null object
7 CC Security Code 10000 non-null int64
8 CC Provider 10000 non-null object
9 Email 10000 non-null object
10 Job 10000 non-null object
11 IP Address 10000 non-null object
12 Language 10000 non-null object
13 Purchase Price 10000 non-null float64
```

```
dtypes: float64(1), int64(2), object(11)
```

```
memory usage: 1.1+ MB
```

#6 Highest and Lowest Purchase Prices.

```
data.columns
```

```
Index(['Address', 'Lot', 'AM or PM', 'Browser Info', 'Company', 'Credit Card',
 'CC Exp Date', 'CC Security Code', 'CC Provider', 'Email', 'Job',
 'IP Address', 'Language', 'Purchase Price'],
 dtype='object')
```

```
data['Purchase Price'].max()
```

```
99.99
```

```
data['Purchase Price'].min()
```

```
0.0
```

#7 Average Purchase Price

```
data['Purchase Price'].mean()
```

```
np.float64(50.347302)
```

#8 How many people have French 'fr' as their Language?

```
data.columns
```

```
Index(['Address', 'Lot', 'AM or PM', 'Browser Info', 'Company', 'Credit Card',
 'CC Exp Date', 'CC Security Code', 'CC Provider', 'Email', 'Job',
 'IP Address', 'Language', 'Purchase Price'],
 dtype='object')
```

```
data[data['Language']=='fr']
```



|      | Address                                                    | Lot      | AM<br>or<br>PM | Browser<br>Info                                               | Company                                  | Credit Card      | CC<br>Exp<br>Date | Sec |
|------|------------------------------------------------------------|----------|----------------|---------------------------------------------------------------|------------------------------------------|------------------|-------------------|-----|
| 1    | 9374 Jasmine<br>Spurs Suite<br>508\nSouth John,<br>TN 8... | 28<br>rn | PM             | Opera/8.93.<br>(Windows 98;<br>Win 9x 4.90;<br>en-US) Pr...   | Fletcher,<br>Richards<br>and<br>Whitaker | 3337758169645356 | 11/18             |     |
| 19   | 125 Hall<br>Summit\nBoothton,<br>IL 41721                  | 99<br>CU | PM             | Mozilla/5.0<br>(compatible;<br>MSIE 7.0;<br>Windows NT<br>... | Turner-<br>Mckinney                      | 676343504830     | 02/20             |     |
| 53   | PSC 9431, Box<br>7059\nAPO AA<br>29285-1363                | 14<br>qD | AM             | Opera/9.34.<br>(X11; Linux<br>x86_64; it-IT)<br>Presto/2...   | Higgins,<br>Cardenas<br>and<br>Kennedy   | 869972604798355  | 08/17             |     |
| 76   | 49206 Campbell<br>Port\nNorth<br>Cliffordshire, HI 3...    | 71<br>iu | PM             | Mozilla/5.0<br>(Macintosh;<br>U; PPC Mac<br>OS X<br>10_5_9... | Jacobs-<br>Tucker                        | 6011343518820988 | 01/17             |     |
| 82   | 493 Smith Valleys<br>Suite 004\nNew<br>Madelineville...    | 35<br>ls | PM             | Mozilla/5.0<br>(iPod; U;<br>CPU iPhone<br>OS 4_0 like<br>M... | Robinson,<br>Johnston<br>and<br>Valdez   | 4351359627548412 | 06/17             |     |
| ...  | ...                                                        | ...      | ...            | ...                                                           | ...                                      | ...              | ...               | ... |
| 9941 | 43757 Brown<br>Lodge\nValerieberg,<br>PR 88518             | 68<br>DG | AM             | Mozilla/5.0<br>(compatible;<br>MSIE 5.0;<br>Windows NT<br>... | Jones,<br>Williams<br>and Dunn           | 6011508474487291 | 04/26             |     |
| 9947 | 32827 Carl<br>Inlet\nSouth Nicole,<br>NY 38081-6636        | 40<br>Dp | PM             | Mozilla/5.0<br>(Windows; U;<br>Windows 95)<br>AppleWebK...    | Pruitt-<br>Flores                        | 3158564208754951 | 03/17             |     |
| 9951 | 518 Brown<br>Dam\nGarciaside,<br>IN 33057                  | 71<br>wq | AM             | Mozilla/5.0<br>(compatible;<br>MSIE 8.0;<br>Windows NT<br>... | Crosby,<br>Vasquez<br>and<br>Ballard     | 5256758441931287 | 12/17             |     |
| 9977 | 02182 Keith<br>Expressway\nEast<br>Shannon, CT<br>20578... | 34<br>RL | AM             | Mozilla/5.0<br>(compatible;<br>MSIE 9.0;<br>Windows NT<br>... | Deleon,<br>Jacobson<br>and<br>Benton     | 4186094003664688 | 06/21             |     |
|      |                                                            |          |                | Opera/8.58.                                                   |                                          |                  |                   |     |

```
len(data[data['Language']=='fr'])
```

➡ 1097

```
data[data['Language']=='fr'].count()
```

➡

|                  | 0    |
|------------------|------|
| Address          | 1097 |
| Lot              | 1097 |
| AM or PM         | 1097 |
| Browser Info     | 1097 |
| Company          | 1097 |
| Credit Card      | 1097 |
| CC Exp Date      | 1097 |
| CC Security Code | 1097 |
| CC Provider      | 1097 |
| Email            | 1097 |
| Job              | 1097 |
| IP Address       | 1097 |
| Language         | 1097 |
| Purchase Price   | 1097 |

dtype: int64

```
#9 Job Title Contains Engineer
data.columns
```

➡ Index(['Address', 'Lot', 'AM or PM', 'Browser Info', 'Company', 'Credit Card', 'CC Exp Date', 'CC Security Code', 'CC Provider', 'Email', 'Job', 'IP Address', 'Language', 'Purchase Price'], dtype='object')

```
data[data['Job'].str.contains('engineer',case=False)]
```



|      | Address                                                     | Lot      | AM<br>or<br>PM | Browser<br>Info                                                 | Company                                  | Credit Card      | CC<br>Exp<br>Date | Se |
|------|-------------------------------------------------------------|----------|----------------|-----------------------------------------------------------------|------------------------------------------|------------------|-------------------|----|
| 1    | 9374 Jasmine Spurs<br>Suite 508\nSouth<br>John, TN 8...     | 28<br>rn | PM             | Opera/8.93.<br>(Windows<br>98; Win 9x<br>4.90; en-<br>US) Pr... | Fletcher,<br>Richards<br>and<br>Whitaker | 3337758169645356 | 11/18             |    |
| 3    | 7780 Julia<br>Fords\nNew Stacy,<br>WA 45798                 | 36<br>vm | PM             | Mozilla/5.0<br>(Macintosh;<br>Intel Mac<br>OS X<br>10_8_0 ...   | Williams,<br>Marshall<br>and<br>Buchanan | 6011578504430710 | 02/24             |    |
| 50   | 41159 Michael<br>Centers\nAdamsfort,<br>RI 37108-6674       | 46<br>Ce | PM             | Mozilla/5.0<br>(Windows<br>98; Win 9x<br>4.90; sl-SI;<br>r...   | Wright,<br>Williams<br>and<br>Mendez     | 4008586485908075 | 05/19             |    |
| 55   | 27635 Maureen<br>Bypass Apt.<br>883\nSandrerview, SD<br>... | 59<br>LJ | AM             | Mozilla/5.0<br>(iPod; U;<br>CPU<br>iPhone OS<br>3_3 like M...   | Sims-<br>Lyons                           | 3158113629128344 | 09/19             |    |
| 60   | 7126 Katherine<br>Squares\nPerkinsview,<br>CO 97299-...     | 63<br>qu | AM             | Opera/8.68.<br>(X11; Linux<br>x86_64; en-<br>US)<br>Presto/2... | Marshall-<br>Fernandez                   | 349767747049645  | 05/20             |    |
| ...  | ...                                                         | ...      | ...            | ...                                                             | ...                                      | ...              | ...               |    |
| 9948 | 95544 Johnson Isle<br>Suite<br>939\nMichaelberg, RI<br>...  | 91<br>bW | AM             | Opera/8.36.<br>(X11; Linux<br>x86_64; sl-<br>SI)<br>Presto/2... | Fox-<br>Peterson                         | 4762924304307    | 03/17             |    |
| 9952 | 9991 Vaughn<br>Hills\nRacheltown, PA<br>55409               | 36<br>KC | PM             | Mozilla/5.0<br>(X11; Linux<br>i686;<br>rv:1.9.5.20)<br>Gec...   | Ward,<br>Smith and<br>Castillo           | 6011679271321726 | 09/19             |    |
| 9970 | 0060 Keith<br>Stream\nWestport, CO<br>47097                 | 11<br>nt | PM             | Mozilla/5.0<br>(Macintosh;<br>U; Intel Mac<br>OS X<br>10_8...   | Carpenter,<br>Good and<br>Hart           | 6011485664704662 | 07/19             |    |
| 9977 | 02182 Keith<br>Expressway\nEast<br>Shannon, CT 20578        | 34<br>RL | AM             | Mozilla/5.0<br>(compatible;<br>MSIE 9.0;<br>Windows             | Deleon,<br>Jacobson<br>and               | 4186094003664688 | 06/21             |    |

|      |                                                         |          |    |                                                               |                                   |                 |       |
|------|---------------------------------------------------------|----------|----|---------------------------------------------------------------|-----------------------------------|-----------------|-------|
|      | Shannon, CT 20070...                                    |          |    | Windows NT ...                                                | Benton                            |                 |       |
| 9996 | 832 Curtis Dam Suite<br>785\nNorth<br>Edwardburgh, T... | 41<br>JY | AM | Mozilla/5.0<br>(compatible;<br>MSIE 9.0;<br>Windows<br>NT ... | Hale,<br>Collins<br>and<br>Wilson | 210033169205009 | 07/25 |


984 rows × 14 columns

```
len(data[data['Job'].str.contains('engineer',case=False)])
```

 984


#10 Find The Email of the person with the following IP Address: 132.207.160.22

```
data.columns
```



```
Index(['Address', 'Lot', 'AM or PM', 'Browser Info', 'Company', 'Credit Card',
 'CC Exp Date', 'CC Security Code', 'CC Provider', 'Email', 'Job',
 'IP Address', 'Language', 'Purchase Price'],
 dtype='object')
```

```
data[data['IP Address']=="132.207.160.22"]['Email']
```




|   | Email                          |
|---|--------------------------------|
| 2 | amymiller@morales-harrison.com |

**dtype:** object

#11 How many People have Mastercard as their Credit Card Provider and made a purchase above

```
data.columns
```



```
Index(['Address', 'Lot', 'AM or PM', 'Browser Info', 'Company', 'Credit Card',
 'CC Exp Date', 'CC Security Code', 'CC Provider', 'Email', 'Job',
 'IP Address', 'Language', 'Purchase Price'],
 dtype='object')
```

```
data[(data['CC Provider']=="Mastercard") & (data['Purchase Price']>50)]
```



|      | Address                                                 | Lot      | AM<br>or<br>PM | Browser<br>Info                                               | Company                                  | Credit Card      | I<br>D# |
|------|---------------------------------------------------------|----------|----------------|---------------------------------------------------------------|------------------------------------------|------------------|---------|
| 1    | 9374 Jasmine Spurs Suite<br>508\nSouth John, TN 8...    | 28<br>rn | PM             | Opera/8.93.<br>(Windows 98;<br>Win 9x 4.90;<br>en-US) Pr...   | Fletcher,<br>Richards<br>and<br>Whitaker | 3337758169645356 | 11      |
| 18   | 461 Christopher<br>Square\nWest<br>Michaelchester, C... | 17<br>SB | PM             | Mozilla/5.0<br>(X11; Linux<br>i686;<br>rv:1.9.6.20)<br>Gec... | Beard,<br>Abbott and<br>Pena             | 6011350184276270 | 12      |
| 31   | USNS Alvarado\nFPO AA<br>27052-1231                     | 26<br>Lh | PM             | Opera/8.84.<br>(X11; Linux<br>i686; sl-SI)<br>Presto/2.9...   | Nicholson<br>Group                       | 4614997834548    | 03      |
| 35   | 93392 Webb Gardens<br>Apt. 220\nLaurabury, AR<br>999... | 37<br>om | AM             | Mozilla/5.0<br>(Macintosh; U;<br>Intel Mac OS<br>X 10_7...    | Mora Ltd                                 | 6011049630969815 | 09      |
| 90   | 431 Bowen<br>Lights\nFergusonborough,<br>MH 01362       | 31<br>tG | AM             | Mozilla/5.0<br>(Windows NT<br>5.2; it-IT;<br>rv:1.9.1.2...    | Copeland-<br>Lee                         | 639032576097     | 06      |
| ...  | ...                                                     | ...      | ...            | ...                                                           | ...                                      | ...              | ...     |
| 9941 | 43757 Brown<br>Lodge\nValerieberg, PR<br>88518          | 68<br>DG | AM             | Mozilla/5.0<br>(compatible;<br>MSIE 5.0;<br>Windows NT<br>... | Jones,<br>Williams<br>and Dunn           | 6011508474487291 | 04      |
| 9948 | 95544 Johnson Isle Suite<br>939\nMichaelberg, RI ...    | 91<br>bW | AM             | Opera/8.36.<br>(X11; Linux<br>x86_64; sl-SI)<br>Presto/2...   | Fox-<br>Peterson                         | 4762924304307    | 03      |
| 9954 | 051 Samantha Wells Apt.<br>328\nScottborough, OR ...    | 11<br>vG | AM             | Mozilla/5.0<br>(Macintosh; U;<br>PPC Mac OS<br>X 10_8_2...    | Mendoza,<br>Zimmerman<br>and Reilly      | 30232295374907   | 05      |
| 9981 | 087 Larson Roads Apt.<br>587\nRicestad, WI<br>98077-... | 95<br>Kw | AM             | Opera/9.63.<br>(Windows NT<br>5.01; en-US)<br>Presto/2.9...   | Ortiz,<br>Schultz and<br>Adams           | 4690863684605    | 01      |
| 9987 | 2754 Klein<br>Mission\nJohnsonview,<br>PA 64925-9624    | 65<br>Fg | PM             | Opera/9.26.<br>(Windows CE;<br>sl-SI)<br>Presto/2.9.188       | Curtis LLC                               | 180027305702263  | 12      |
| ...  | ...                                                     | ...      | ...            | ...                                                           | ...                                      | ...              | ...     |