

In [1]:

```
import numpy as np
import pandas as pd
```

In [2]:

```
review=pd.read_csv('winemag-data-130k-v2.csv')
```

Ques-1: Overview of the DataFrame:

In [3]:

```
review
```

Out[3]:

	Unnamed: 0	country	description	designation	points	price	province	region_1	region_2	taster
0	0	Italy	Aromas include tropical fruit, broom, brimston...	Vulkà Bianco	87	NaN	Sicily & Sardinia	Etna	NaN	C
1	1	Portugal	This is ripe and fruity, a wine that is smooth...	Avidagos	87	15.0	Douro	NaN	NaN	Rog
2	2	US	Tart and snappy, the flavors of lime flesh and...	NaN	87	14.0	Oregon	Willamette Valley	Willamette Valley	Paul

In [4]:

```
review.shape
```

Out[4]:

(129971, 14)

In [5]:

```
review.columns
```

Out[5]:

```
Index(['Unnamed: 0', 'country', 'description', 'designation', 'points',
      'price', 'province', 'region_1', 'region_2', 'taster_name',
      'taster_twitter_handle', 'title', 'variety', 'winery'],
      dtype='object')
```

In [6]:

```
review.head()
```

Out[6]:

Unnamed: 0	country	description	designation	points	price	province	region_1	region_2
0	Italy	Aromas include tropical fruit, broom, brimston...	Vulkà Bianco	87	NaN	Sicily & Sardinia	Etna	NaN
1	Portugal	This is ripe and fruity, a wine that is smooth...	Avidagos	87	15.0	Douro	NaN	NaN
2	US	Tart and snappy, the flavors of lime flesh and...	NaN	87	14.0	Oregon	Willamette Valley	Willamette Valley
3	US	Pineapple rind, lemon pith and orange blossom ...	Reserve Late Harvest	87	13.0	Michigan	Lake Michigan Shore	NaN
4	US	Much like the regular bottling from 2012, this...	Vintner's Reserve Wild Child Block	87	65.0	Oregon	Willamette Valley	Willamette Valley



Ques-2:

In [7]:

```
desc=review['description']
desc
```

Out[7]:

```
0      Aromas include tropical fruit, broom, brimston...
1      This is ripe and fruity, a wine that is smooth...
2      Tart and snappy, the flavors of lime flesh and...
3      Pineapple rind, lemon pith and orange blossom ...
4      Much like the regular bottling from 2012, this...
      ...
129966  Notes of honeysuckle and cantaloupe sweeten th...
129967  Citation is given as much as a decade of bottl...
129968  Well-drained gravel soil gives this wine its c...
129969  A dry style of Pinot Gris, this is crisp with ...
129970  Big, rich and off-dry, this is powered by inte...
Name: description, Length: 129971, dtype: object
```

Ques-3:

In [8]:

```
first_description=review['description'][0]
first_description
```

Out[8]:

"Aromas include tropical fruit, broom, brimstone and dried herb. The palate isn't overly expressive, offering unripened apple, citrus and dried sage alongside brisk acidity."

Ques-4:

In [9]:

```
first_row=review.loc[0]
first_row
```

Out[9]:

```
Unnamed: 0      0
country      Italy
description    Aromas include tropical fruit, broom, brimston...
designation    Vulkà Bianco
points        87
price         NaN
province      Sicily & Sardinia
region_1      Etna
region_2      NaN
taster_name    Kerin O'Keefe
taster_twitter_handle  @kerinokeefe
title          Nicosia 2013 Vulkà Bianco (Etna)
variety        White Blend
winery         Nicosia
Name: 0, dtype: object
```

Ques-5:

In [10]:

```
first_descriptions=review['description'].head(10)
first_descriptions
```

Out[10]:

```
0    Aromas include tropical fruit, broom, brimston...
1    This is ripe and fruity, a wine that is smooth...
2    Tart and snappy, the flavors of lime flesh and...
3    Pineapple rind, lemon pith and orange blossom ...
4    Much like the regular bottling from 2012, this...
5    Blackberry and raspberry aromas show a typical...
6    Here's a bright, informal red that opens with ...
7    This dry and restrained wine offers spice in p...
8    Savory dried thyme notes accent sunnier flavor...
9    This has great depth of flavor with its fresh ...
Name: description, dtype: object
```

Ques-6:

In [11]:

```
arr=review.values
review.columns
```

Out[11]:

```
Index(['Unnamed: 0', 'country', 'description', 'designation', 'points',
      'price', 'province', 'region_1', 'region_2', 'taster_name',
      'taster_twitter_handle', 'title', 'variety', 'winery'],
      dtype='object')
```

In [12]:

```
numpy_arr=np.array([arr[1],arr[2],arr[3],arr[5],arr[8]])
numpy_arr
```

Out[12]:

```
array([[1, 'Portugal',
        "This is ripe and fruity, a wine that is smooth while still structur
ed. Firm tannins are filled out with juicy red berry fruits and freshened wi
th acidity. It's already drinkable, although it will certainly be better fr
om 2016.",
        'Avidagos', 87, 15.0, 'Douro', nan, nan, 'Roger Voss',
        '@vossroger', 'Quinta dos Avidagos 2011 Avidagos Red (Douro)',
        'Portuguese Red', 'Quinta dos Avidagos'],
       [2, 'US',
        'Tart and snappy, the flavors of lime flesh and rind dominate. Some
green pineapple pokes through, with crisp acidity underscoring the flavors.
The wine was all stainless-steel fermented.',
        nan, 87, 14.0, 'Oregon', 'Willamette Valley',
        'Willamette Valley', 'Paul Gregutt', '@paulgwine\xa0',
        'Rainstorm 2013 Pinot Gris (Willamette Valley)', 'Pinot Gris',
        'Rainstorm'],
       [3, 'US',
        'Pineapple rind, lemon pith and orange blossom start off the aromas.
The palate is a bit more opulent, with notes of honey-drizzled guava and man
go giving way to a slightly astringent, semidry finish.',
        'Reserve Late Harvest', 87, 13.0, 'Michigan',
        'Lake Michigan Shore', nan, 'Alexander Peartree', nan,
        'St. Julian 2013 Reserve Late Harvest Riesling (Lake Michigan Shor
e)',
        'Riesling', 'St. Julian'],
       [5, 'Spain',
        'Blackberry and raspberry aromas show a typical Navarran whiff of gr
een herbs and, in this case, horseradish. In the mouth, this is fairly full
bodied, with tomatoey acidity. Spicy, herbal flavors complement dark plum fr
uit, while the finish is fresh but grabby.',
        'Ars In Vitro', 87, 15.0, 'Northern Spain', 'Navarra', nan,
        'Michael Schachner', '@wineschach',
        'Tandem 2011 Ars In Vitro Tempranillo-Merlot (Navarra)',
        'Tempranillo-Merlot', 'Tandem'],
       [8, 'Germany',
        "Savory dried thyme notes accent sunnier flavors of preserved peach
in this brisk, off-dry wine. It's fruity and fresh, with an elegant, spright
ly footprint.",
        'Shine', 87, 12.0, 'Rheinhessen', nan, nan, 'Anna Lee C. Iijima',
        nan, 'Heinz Eifel 2013 Shine Gewürztraminer (Rheinhessen)',
        'Gewürztraminer', 'Heinz Eifel']], dtype=object)
```

In [13]:

```
col=review.columns
sample_reviews=pd.DataFrame(data=numpy_arr,columns=col)
sample_reviews
```

Out[13]:

	Unnamed: 0	country	description	designation	points	price	province	region_1	region_2	taster_name
0	1	Portugal	This is ripe and fruity, a wine that is smooth...	Avidagos	87	15.0	Douro	NaN	NaN	Roger V
1	2	US	Tart and snappy, the flavors of lime flesh and...	NaN	87	14.0	Oregon	Willamette Valley	Willamette Valley	Paul Greg
2	3	US	Pineapple rind, lemon pith and orange blossom ...	Reserve Late Harvest	87	13.0	Michigan	Lake Michigan Shore	NaN	Alexan Peart

Ques-7:

In [14]:

```
review
```

Out[14]:

	Unnamed: 0	country	description	designation	points	price	province	region_1	region_2	taster
0	0	Italy	Aromas include tropical fruit, broom, brimston...	Vulkà Bianco	87	NaN	Sicily & Sardinia	Etna	NaN	C
1	1	Portugal	This is ripe and fruity, a wine that is smooth...	Avidagos	87	15.0	Douro	NaN	NaN	Rog
2	2	US	Tart and snappy, the flavors of lime flesh and...	NaN	87	14.0	Oregon	Willamette Valley	Willamette Valley	Paul

In [15]:

```
def select_cols(df, colm):
    new = df.loc[:, colm]
    return new
```

In [16]:

```
colm=['country','province','region_1','region_2']
df=select_cols(review,colm)
df
```

Out[16]:

	country	province	region_1	region_2
0	Italy	Sicily & Sardinia	Etna	NaN
1	Portugal	Douro	NaN	NaN
2	US	Oregon	Willamette Valley	Willamette Valley
3	US	Michigan	Lake Michigan Shore	NaN
4	US	Oregon	Willamette Valley	Willamette Valley
...
129966	Germany	Mosel	NaN	NaN
129967	US	Oregon	Oregon	Oregon Other
129968	France	Alsace	Alsace	NaN
129969	France	Alsace	Alsace	NaN
129970	France	Alsace	Alsace	NaN

129971 rows × 4 columns

Ques-8:

In [17]:

```
def select_cols(df, colm):
    new = df.loc[:, colm]
    return new
```

In [18]:

```
col_span=['country','variety']
dp1=select_cols(review,col_span)
dp1=dp1.head(100)
dp1
```

Out[18]:

	country	variety
0	Italy	White Blend
1	Portugal	Portuguese Red
2	US	Pinot Gris
3	US	Riesling
4	US	Pinot Noir
...
95	France	Gamay
96	France	Gamay
97	US	Riesling
98	Italy	Sangiovese
99	US	Bordeaux-style Red Blend

100 rows × 2 columns

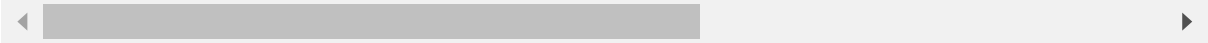
Ques-9:

In [19]:

```
review.head()
```

Out[19]:

Unnamed: 0	country	description	designation	points	price	province	region_1	region_2
0	Italy	Aromas include tropical fruit, broom, brimston...	Vulkà Bianco	87	NaN	Sicily & Sardinia	Etna	NaN
1	Portugal	This is ripe and fruity, a wine that is smooth...	Avidagos	87	15.0	Douro	NaN	NaN
2	US	Tart and snappy, the flavors of lime flesh and...	NaN	87	14.0	Oregon	Willamette Valley	Willamette Valley
3	US	Pineapple rind, lemon pith and orange blossom ...	Reserve Late Harvest	87	13.0	Michigan	Lake Michigan Shore	NaN
4	US	Much like the regular bottling from 2012, this...	Vintner's Reserve Wild Child Block	87	65.0	Oregon	Willamette Valley	Willamette Valley



In [20]:

```

arry=[]
for x in range(0,len(review)-1):
    if(review.loc[x].at['country']=='Italy'):
        arry.append(review.loc[x].values)
arry

```

Out[20]:

```

[array([0, 'Italy',
        "Aromas include tropical fruit, broom, brimstone and dried herb. T
he palate isn't overly expressive, offering unripened apple, citrus and dr
ied sage alongside brisk acidity.",
        'Vulkà Bianco', 87, nan, 'Sicily & Sardinia', 'Etna', nan,
        'Kerin O'Keefe', '@kerinokeefe',
        'Nicosia 2013 Vulkà Bianco (Etna)', 'White Blend', 'Nicosia'],
        dtype=object),
array([6, 'Italy',
        "Here's a bright, informal red that opens with aromas of candied b
erry, white pepper and savory herb that carry over to the palate. It's bal
anced with fresh acidity and soft tannins.",
        'Belsito', 87, 16.0, 'Sicily & Sardinia', 'Vittoria', nan,
        'Kerin O'Keefe', '@kerinokeefe',
        'Terre di Giurfo 2013 Belsito Frappato (Vittoria)', 'Frappato',
        'Terre di Giurfo'], dtype=object),
array([13, 'Italy',
        'This is dominated by oak and oak-driven aromas that include roast

```

In [21]:

```
len(arry)
```

Out[21]:

19540

In [22]:

```
numpy_array=np.array(array)
numpy_array
```

Out[22]:

```
array([[0, 'Italy',
        "Aromas include tropical fruit, broom, brimstone and dried herb. The
        palate isn't overly expressive, offering unripened apple, citrus and dried s
        age alongside brisk acidity.",
        ..., 'Nicosia 2013 Vulkà Bianco (Etna)', 'White Blend',
        'Nicosia'],
       [6, 'Italy',
        "Here's a bright, informal red that opens with aromas of candied ber
        ry, white pepper and savory herb that carry over to the palate. It's balance
        d with fresh acidity and soft tannins.",
        ..., 'Terre di Giurfo 2013 Belsito Frappato (Vittoria)',
        'Frappato', 'Terre di Giurfo'],
       [13, 'Italy',
        'This is dominated by oak and oak-driven aromas that include roasted
        coffee bean, espresso, coconut and vanilla that carry over to the palate, to
        gether with plum and chocolate. Astringent, drying tannins give it a rather
        abrupt finish.',
        ..., 'Masseria Setteporte 2012 Rosso (Etna)',
        'Nerello Mascalese', 'Masseria Setteporte'],
       ...,
       [129947, 'Italy',
        'A blend of 65% Cabernet Sauvignon, 30% Merlot and 5% Petit Verdot,
        this bold wine features aromas of spiced plum, blackcurrant, leather and a h
        int of coconut. On the palate, assertive tannins support the mature blackber
        ry, espresso and licorice flavors.',
        ...,
        'Feudo Principi di Butera 2012 Symposio Red (Terre Siciliane)',
        'Red Blend', 'Feudo Principi di Butera'],
       [129961, 'Italy',
        'Intense aromas of wild cherry, baking spice, tilled soil and savory
        herb lead the nose on this soulful, silky red. The round, smooth palate dole
        s out juicy red cherry, strawberry jelly, mineral, white pepper and an intri
        guing note of zabaglione alongside soft, supple tannins and bright acidit
        y..',
        ..., 'COS 2013 Frappato (Sicilia)', 'Frappato', 'COS'],
       [129962, 'Italy',
        'Blackberry, cassis, grilled herb and toasted aromas come together i
        n the glass. On the palate, espresso, mint and black pepper add depth to the
        core of black cherry and blackberry flavors. It finishes on a licorice not
        e.',
        ...,
        "Cusumano 2012 Sàgana Tenuta San Giacomo Nero d'Avola (Sicilia)",
        "Nero d'Avola", 'Cusumano']], dtype=object)
```

In [23]:

```
temp_dp=pd.DataFrame(data=numpy_array,columns=col)
temp_dp
```

Out[23]:

	Unnamed: 0	country	description	designation	points	price	province	region_1	region_2	taster_name
0	0	Italy	Aromas include tropical fruit, broom, brimston...	Vulkà Bianco	87	NaN	Sicily & Sardinia	Etna	NaN	Kevin O'Keefe
1	6	Italy	Here's a bright, informal red that opens with ...	Belsito	87	16.0	Sicily & Sardinia	Vittoria	NaN	Kevin O'Keefe
2	13	Italy	This is dominated by oak and oak-driven	Rosso	87	NaN	Sicily & Sardinia	Etna	NaN	Kevin O'Keefe

In [24]:

```
def select_cols(df, colm):
    new = df.loc[:, colm]
    return new
```

In [25]:

```
col_new=['description','price','points','taster_name','taster_twitter_handle','title','variety']
last_dp=select_cols(temp_dp,col_new)
last_dp
```

Out[25]:

	description	price	points	taster_name	taster_twitter_handle	title	variety	
0	Aromas include tropical fruit, broom, brimston...	NaN	87	Kerin O'Keefe	@kerinokeefe	Nicosia 2013 Vulkà Bianco (Etna)	White Blend	
1	Here's a bright, informal red that opens with ...	16.0	87	Kerin O'Keefe	@kerinokeefe	Terre di Giurfo 2013 Belsito Frappato (Vittoria)	Frappato	
2	This is dominated by oak and oak-driven aromas...	NaN	87	Kerin O'Keefe	@kerinokeefe	Masseria Setteporte 2012 Rosso (Etna)	Nerello Mascalese	5
3	Delicate aromas recall white flower and citrus...	19.0	87	Kerin O'Keefe	@kerinokeefe	Baglio di Pianetto 2007 Ficiligno White (Sicilia)	White Blend	
4	Aromas of prune, blackcurrant, toast and oak c...	35.0	87	Kerin O'Keefe	@kerinokeefe	Canicatti 2009 Aynat Nero d'Avola (Sicilia)	Nero d'Avola	
...	
19535	This luminous sparkler has a sweet, fruit-forw...	38.0	91	NaN	NaN	Col Vctoraz Spumanti NV Prosecco Superiore di...	Prosecco	Ci
19536	A blend of Nero d'Avola and Syrah, this convey...	29.0	90	Kerin O'Keefe	@kerinokeefe	Baglio del Cristo di Campobello 2012 Adènzia R...	Red Blend	Cè
19537	A blend of 65% Cabernet Sauvignon, 30% Merlot ...	20.0	90	Kerin O'Keefe	@kerinokeefe	Feudo Principi di Butera 2012 Symposio Red (Te...	Red Blend	
19538	Intense aromas of wild cherry, baking spice, t...	30.0	90	Kerin O'Keefe	@kerinokeefe	COS 2013 Frappato (Sicilia)	Frappato	

	description	price	points	taster_name	taster_twitter_handle	title	variety	
19539	Blackberry, cassis, grilled herb and toasted a...	40.0	90	Kerin O'Keefe	@kerinokeefe	Cusumano 2012 Sàgana Tenuta San Giacomo Nero d...	Nero d'Avola	C

19540 rows × 8 columns

