```
!pip install kaggle
```

```
Collecting package metadata (current_repodata.json): ...working... done
Solving environment: ...working... done

# All requested packages already installed.
```

```
Note: you may need to restart the kernel to use updated packages.
```

```
!pip install ydata-profiling
```

```
Collecting package metadata (current_repodata.json): ...working... done
Solving environment: ...working... done

# All requested packages already installed.
```

```
Note: you may need to restart the kernel to use updated packages.
```

```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
%matplotlib inline
```

```
df=pd.read_csv("E:\\DATA\PROJECT\data Science\zomato.csv")
df.head()
```

	url	address	name	online_order	book_table	rate	votes	phone	location	rest_type	dish_liked	cuisines	approx_cost(for two people)	reviews_list	menu_item	listed_in(type)	listed_in(city)
0	https://www.zomato.com/bangalore/jalsa-banashankari	942, 21st Main Road, 2nd Stage, Banashankari, Bangalore	Jalsa	Yes	Yes	4.1/5	775	080 42674225\n+91 9902210108	Banashankari	Casual Dining	Paneer Tikka, Kaju Paneer, Lunch Buffet, Masala Papad, Spicy Vegetables	North Indian, Mughlai, Chinese	800	[('Rated 4.0', 'RATED\n A lovely place with good food. Ordered a few dishes from the buffet and all were very tasty. Service was good and ambience was nice.'), ('Rated 5.0', 'RATED\n Ambience is very good and the food is tasty. Buffet is a good option. Staff is very helpful and cooperative.')]	[]	Buffets	Banashankari
1	https://www.zomato.com/bangalore/spa-elita-sun-banashankari	2nd Floor, Sai Arcade, 7th Cross, 15th Main, 24th Main, Near Reliance Fresh, 5th Block, Kathriguppe, Bangalore	Spa Elita Sun	Yes	No	4.1/5	787	080 41714161	Banashankari	Casual Dining	Chicken Tikka Pizza, Veg Kolhapuri Pizza, Mushroom Pizza, Veg Pizza, Cheese Pizza, Chicken Pizza	Pizza, Fast Food, Beverages	300	[('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.'), ('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.')]	[]	Buffets	Banashankari
2	https://www.zomato.com/bangalore/spice-elephant-2-kaggadasapura	1153, Ground Floor, 100 Feet Road, Near Big Bazaar, 6th Block, Kaggadasapura, Bangalore	Spice Elephant	Yes	No	3.8/5	918	080 28524603	Banashankari	Casual Dining	Pan Fried Prawns, Steamed Lobster, Lobster Pepper Fry, Lobster Thermidor, Lobster Butter Garlic, Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic, Lobster Malaysian, Lobster Hot Garlic	Chinese, Seafood, Mangalorean, Thai	1500	[('Rated 5.0', 'RATED\n Food is tasty and quantity is more. Live Lobster and Live Crab are the highlights of this place. Lobster Thermidor is a must try. Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic are good. Service is slow and place is very noisy.'), ('Rated 5.0', 'RATED\n Food is tasty and quantity is more. Live Lobster and Live Crab are the highlights of this place. Lobster Thermidor is a must try. Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic are good. Service is slow and place is very noisy.')]	[]	Buffets	Banashankari
3	https://www.zomato.com/bangalore/spice-elephant-2-kaggadasapura	1153, Ground Floor, 100 Feet Road, Near Big Bazaar, 6th Block, Kaggadasapura, Bangalore	Spice Elephant	Yes	No	3.8/5	826	080 28524603	Banashankari	Casual Dining	Butter Naan, Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura	North Indian, Mughlai, Chinese	800	[('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.'), ('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.')]	[]	Buffets	Banashankari
4	https://www.zomato.com/bangalore/spice-finesse-kitchen-banashankari	2nd Floor, Devi Plaza, 100 Feet Road, Near Indian Oil Petrol Bunk, 7th Block, Kathriguppe, Bangalore	Spice Finesse Kitchen	No	No	3.7/5	43	080 26615900	Banashankari	Casual Dining	Cold Drinks, Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura	North Indian, Mughlai, Chinese	500	[('Rated 3.0', 'RATED\n Food is average. Not to your expectations. Ordered Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura. Kulfi was good. Ambience is average. Not to your expectations. Ordered Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura. Kulfi was good. Ambience is average.')]	[]	Buffets	Banashankari

```
df.shape
```

```
(51717, 17)
```

```
df.columns
```

```
Index(['url', 'address', 'name', 'online_order', 'book_table', 'rate',
       'votes', 'phone', 'location', 'rest_type', 'dish_liked', 'cuisines',
       'approx_cost(for two people)', 'reviews_list', 'menu_item',
       'listed_in(type)', 'listed_in(city)'],
      dtype='object')
```

```
df.drop(['url', 'address', 'phone', 'menu_item', 'dish_liked', 'reviews_list'], axis=1)
df.head()
```

	name	online_order	book_table	rate	votes	location	rest_type	cuisines	approx_cost(for two people)	listed_in(type)	listed_in(city)
0	Jalsa	Yes	Yes	4.1/5	775	Banashankari	Casual Dining	North Indian, Mughlai, Chinese	800	Buffets	Banashankari
1	Spa Elita Sun	Yes	No	4.1/5	787	Banashankari	Casual Dining	Pizza, Fast Food, Beverages	300	Buffets	Banashankari
2	Spice Elephant	Yes	No	3.8/5	918	Banashankari	Casual Dining	Chinese, Seafood, Mangalorean, Thai	1500	Buffets	Banashankari
3	Spice Elephant	Yes	No	3.8/5	826	Banashankari	Casual Dining	North Indian, Mughlai, Chinese	800	Buffets	Banashankari
4	Spice Finesse Kitchen	No	No	3.7/5	43	Banashankari	Casual Dining	Cafe, Mexican, Italian	500	Buffets	Banashankari

```
df.dtypes
```

```
name                         object
online_order                 object
book_table                   object
rate                         object
votes                         int64
location                     object
rest_type                    object
dish_liked                   object
cuisines                     object
approx_cost(for two people)  object
reviews_list                 object
menu_item                    object
listed_in(type)              object
listed_in(city)              object
dtype: object
```

```
df.describe()
```

	votes
count	51717.000000
mean	283.697527
std	803.838853
min	0.000000
25%	7.000000
50%	41.000000
75%	198.000000
max	16832.000000

```
df.drop_duplicates(inplace=True)
df.shape
```

```
(23066, 51)
```

```
df.columns
```

```
Index(['name', 'online_order', 'book_table', 'rate', 'votes', 'location',
       'rest_type', 'cuisines', 'approx_cost(for two people)',
       'listed_in(type)', 'listed_in(city)'],
      dtype='object')
```

```
df.head()
```

	url	address	name	online_order	book_table	rate	votes	phone	location	rest_type	dish_liked	cuisines	approx_cost(for two people)	reviews_list	menu_item	listed_in(type)	listed_in(city)
0	https://www.zomato.com/bangalore/jalsa-banashankari	942, 21st Main Road, 2nd Stage, Banashankari, Bangalore	Jalsa	Yes	Yes	4.1/5	775	080 42674225\n+91 9902210108	Banashankari	Casual Dining	Paneer Tikka, Kaju Paneer, Lunch Buffet, Masala Papad, Spicy Vegetables	North Indian, Mughlai, Chinese	800	[('Rated 4.0', 'RATED\n A lovely place with good food. Ordered a few dishes from the buffet and all were very tasty. Service was good and ambience was nice.'), ('Rated 5.0', 'RATED\n Ambience is very good and the food is tasty. Buffet is a good option. Staff is very helpful and cooperative.')]	[]	Buffets	Banashankari
1	https://www.zomato.com/bangalore/spa-elita-sun-banashankari	2nd Floor, Sai Arcade, 7th Cross, 15th Main, 24th Main, Near Reliance Fresh, 5th Block, Kathriguppe, Bangalore	Spa Elita Sun	Yes	No	4.1/5	787	080 41714161	Banashankari	Casual Dining	Chicken Tikka Pizza, Veg Kolhapuri Pizza, Mushroom Pizza, Veg Pizza, Cheese Pizza, Chicken Pizza	Pizza, Fast Food, Beverages	300	[('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.'), ('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.')]	[]	Buffets	Banashankari
2	https://www.zomato.com/bangalore/spice-elephant-2-kaggadasapura	1153, Ground Floor, 100 Feet Road, Near Big Bazaar, 6th Block, Kaggadasapura, Bangalore	Spice Elephant	Yes	No	3.8/5	918	080 28524603	Banashankari	Casual Dining	Pan Fried Prawns, Steamed Lobster, Lobster Pepper Fry, Lobster Thermidor, Lobster Butter Garlic, Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic, Lobster Malaysian, Lobster Hot Garlic	Chinese, Seafood, Mangalorean, Thai	1500	[('Rated 5.0', 'RATED\n Food is tasty and quantity is more. Live Lobster and Live Crab are the highlights of this place. Lobster Thermidor is a must try. Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic are good. Service is slow and place is very noisy.'), ('Rated 5.0', 'RATED\n Food is tasty and quantity is more. Live Lobster and Live Crab are the highlights of this place. Lobster Thermidor is a must try. Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic are good. Service is slow and place is very noisy.')]	[]	Buffets	Banashankari
3	https://www.zomato.com/bangalore/spice-elephant-2-kaggadasapura	1153, Ground Floor, 100 Feet Road, Near Big Bazaar, 6th Block, Kaggadasapura, Bangalore	Spice Elephant	Yes	No	3.8/5	826	080 28524603	Banashankari	Casual Dining	Butter Naan, Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura	North Indian, Mughlai, Chinese	800	[('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.'), ('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.')]	[]	Buffets	Banashankari
4	https://www.zomato.com/bangalore/spice-finesse-kitchen-banashankari	2nd Floor, Devi Plaza, 100 Feet Road, Near Indian Oil Petrol Bunk, 7th Block, Kathriguppe, Bangalore	Spice Finesse Kitchen	No	No	3.7/5	43	080 26615900	Banashankari	Casual Dining	Cold Drinks, Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura	North Indian, Mughlai, Chinese	500	[('Rated 3.0', 'RATED\n Food is average. Not to your expectations. Ordered Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura. Kulfi was good. Ambience is average. Not to your expectations. Ordered Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura. Kulfi was good. Ambience is average.')]	[]	Buffets	Banashankari

```
df.isnull().sum(axis = 0)
```

```
name                         0
online_order                 0
book_table                   0
rate                         0
votes                        0
location                     0
rest_type                    0
dish_liked                   0
cuisines                     0
approx_cost(for two people)  0
reviews_list                 0
menu_item                    0
listed_in(type)              0
listed_in(city)              0
dtype: object
```

```
df.rate.value_counts
```

	url	address	name	online_order	book_table	rate	votes	phone	location	rest_type	dish_liked	cuisines	approx_cost(for two people)	reviews_list	menu_item	listed_in(type)	listed_in(city)
0	https://www.zomato.com/bangalore/jalsa-banashankari	942, 21st Main Road, 2nd Stage, Banashankari, Bangalore	Jalsa	Yes	Yes	4.1/5	775	080 42674225\n+91 9902210108	Banashankari	Casual Dining	Paneer Tikka, Kaju Paneer, Lunch Buffet, Masala Papad, Spicy Vegetables	North Indian, Mughlai, Chinese	800	[('Rated 4.0', 'RATED\n A lovely place with good food. Ordered a few dishes from the buffet and all were very tasty. Service was good and ambience was nice.'), ('Rated 5.0', 'RATED\n Ambience is very good and the food is tasty. Buffet is a good option. Staff is very helpful and cooperative.')]	[]	Buffets	Banashankari
1	https://www.zomato.com/bangalore/spa-elita-sun-banashankari	2nd Floor, Sai Arcade, 7th Cross, 15th Main, 24th Main, Near Reliance Fresh, 5th Block, Kathriguppe, Bangalore	Spa Elita Sun	Yes	No	4.1/5	787	080 41714161	Banashankari	Casual Dining	Chicken Tikka Pizza, Veg Kolhapuri Pizza, Mushroom Pizza, Veg Pizza, Cheese Pizza, Chicken Pizza	Pizza, Fast Food, Beverages	300	[('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.'), ('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.')]	[]	Buffets	Banashankari
2	https://www.zomato.com/bangalore/spice-elephant-2-kaggadasapura	1153, Ground Floor, 100 Feet Road, Near Big Bazaar, 6th Block, Kaggadasapura, Bangalore	Spice Elephant	Yes	No	3.8/5	918	080 28524603	Banashankari	Casual Dining	Pan Fried Prawns, Steamed Lobster, Lobster Pepper Fry, Lobster Thermidor, Lobster Butter Garlic, Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic, Lobster Malaysian, Lobster Hot Garlic	Chinese, Seafood, Mangalorean, Thai	1500	[('Rated 5.0', 'RATED\n Food is tasty and quantity is more. Live Lobster and Live Crab are the highlights of this place. Lobster Thermidor is a must try. Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic are good. Service is slow and place is very noisy.'), ('Rated 5.0', 'RATED\n Food is tasty and quantity is more. Live Lobster and Live Crab are the highlights of this place. Lobster Thermidor is a must try. Lobster Cheese Fondue, Lobster Kung Pao, Lobster Pepper Garlic are good. Service is slow and place is very noisy.')]	[]	Buffets	Banashankari
3	https://www.zomato.com/bangalore/spice-elephant-2-kaggadasapura	1153, Ground Floor, 100 Feet Road, Near Big Bazaar, 6th Block, Kaggadasapura, Bangalore	Spice Elephant	Yes	No	3.8/5	826	080 28524603	Banashankari	Casual Dining	Butter Naan, Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura	North Indian, Mughlai, Chinese	800	[('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.'), ('Rated 4.0', 'RATED\n Ordered a medium size veggie pizza from here. Pizza was good in taste and quantity was sufficient for 2 people. Will visit again to try other dishes.')]	[]	Buffets	Banashankari
4	https://www.zomato.com/bangalore/spice-finesse-kitchen-banashankari	2nd Floor, Devi Plaza, 100 Feet Road, Near Indian Oil Petrol Bunk, 7th Block, Kathriguppe, Bangalore	Spice Finesse Kitchen	No	No	3.7/5	43	080 26615900	Banashankari	Casual Dining	Cold Drinks, Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura	North Indian, Mughlai, Chinese	500	[('Rated 3.0', 'RATED\n Food is average. Not to your expectations. Ordered Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura. Kulfi was good. Ambience is average. Not to your expectations. Ordered Kadai Paneer, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura. Kulfi was good. Ambience is average.')]	[]	Buffets	Banashankari
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
51712	https://www.zomato.com/bangalore/insanity-lounge-bannerghatta-road	Ground Floor, The Crest, Bannerghatta Road, Near Meenakshi Mall, Bangalore	Insanity Lounge	No	No	NEW	-	-	Bannerghatta Road	Bar	-	Finger Food	600	-	-	Pubs and bars	Bannerghatta Road
51713	https://www.zomato.com/bangalore/shanthi-sagar-jp-nagar	5th Floor, Next Door Shopping Complex, Opp Reliance Fresh, 7th Phase, J P Nagar, Bangalore	Shanthi Sagar	No	No	3.6 / 5.0	8	080 65461477	J P Nagar	Casual Dining	Veg Biryani, Gobi Manchurian, Veg Fried Rice, Paneer Tikka, Chicken Biryani, Chicken Tikka, Butter Naan, Kadai Paneer, Kulfi, Masala Papad	North Indian, Chinese, Biryani, Mangalorean, Chettinad	1,000	[('Rated 4.0', 'RATED\n Food is good. Quantity is good. Ambience is good. Service is good. Overall it was a good experience.'), ('Rated 4.0', 'RATED\n Food is good. Quantity is good. Ambience is good. Service is good. Overall it was a good experience.')]	[]	Buffets	Bannerghatta Road
51714	https://www.zomato.com/bangalore/ashwin-rajajinagar	1st Floor, Gangotri Plaza, Near Kalpana Chitra Theatre, Rajajinagar, Bangalore	Ashwin	No	No	3.6 / 5.0	10	+91 9071577903	Rajajinagar	Casual Dining	Paneer Tikka, Kaju Kadi, Tandoor Roti, Nan, Kulfi, Masala Papad, Vegetable Stuffed Papad, Garlic Naan, Bhatura	North Indian, Chinese	1,000	[('Rated 4.0', 'RATED\n Food is good. Quantity is good. Ambience is good. Service is good. Overall it was a good experience.'), ('Rated 4.0', 'RATED\n Food is good. Quantity is good. Ambience is good. Service is good. Overall it was a good experience.')]	[]	Buffets	Rajajinagar

51717 rows × 17 columns

```
df['address'].unique()
```

```
array(['942, 21st Main Road, 2nd Stage, Banashankari, Bangalore',
       '2nd Floor, SR Arcade, Near Big Bazaar, 6th Block, Kathriguppe, 3rd Stage, Banashankari, Bangalore',
       '1153, Ground Floor, 100 Feet Road, Near Big Bazaar, 6th Block, Kathriguppe, Bangalore',
       '2nd Floor, Devi Plaza, 100 Feet Road, Near Indian Oil Petrol Bunk, 7th Block, Kathriguppe, Bangalore',
       '1st Floor, Gangotri Plaza, Near Kalpana Chitra Theatre, Rajajinagar, Bangalore',
       '5th Floor, Next Door Shopping Complex, Opp Reliance Fresh, 7th Phase, J P Nagar, Bangalore',
       '1st Floor, Sai Arcade, 7th Cross, 15th Main, 24th Main, Near Reliance Fresh, 5th Block, Kathriguppe, Bangalore',
       '1st Floor, Ganga Plaza, Near Kalpana Chitra Theatre, Rajajinagar, Bangalore',
       '1st Floor, Ground Floor, The Crest, Bannerghatta Road, Near Meenakshi Mall, Bangalore',
       '1st Floor, Ground Floor, The Crest, Bannerghatta Road, Near Meenakshi Mall, Bangalore, Karnataka
```