

# Working with Missing Data in pandas

## Import Library

```
In [10]: import pandas as pd # import Library pandas  
import numpy as np # import Library numpy
```

## Reading Csv files in Pandas

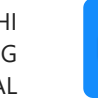
```
In [4]: df = pd.read_excel("C:/Users/prata/Downloads/restaurant.xlsx") #It will work if csv file in same folder
```

```
In [5]: df # to Cheek DataSet
```



Out[5]:

	id	name	Country	city	rating	rating_count	cuisine	link	address
0	567335	AB FOODS POINT	India	Abohar	--	Too Few Ratings	Beverages,Pizzas	<a href="https://www.swiggy.com/restaurants/ab-foods-po...">https://www.swiggy.com/restaurants/ab-foods-po...</a>	AB FOODS POINT, NEAR RISHI NARANG DENTAL CLINI...
1	531342	Janta Sweet House	India	Abohar	4.4	50+ ratings	Sweets,Bakery	<a href="https://www.swiggy.com/restaurants/janta-sweet...">https://www.swiggy.com/restaurants/janta-sweet...</a>	Janta Sweet House, Bazar No.9, Circullar Road,...
2	158203	theka coffee desi	India	Abohar	3.8	100+ ratings	Beverages	<a href="https://www.swiggy.com/restaurants/theka-coffe...">https://www.swiggy.com/restaurants/theka-coffe...</a>	theka coffee desi, sahtiya sadan road city
3	187912	Singh Hut	India	Abohar	3.7	20+ ratings	Fast Food,Indian	<a href="https://www.swiggy.com/restaurants/singh-hut-n...">https://www.swiggy.com/restaurants/singh-hut-n...</a>	Singh Hut, CIRCULAR ROAD NEAR NEHRU PARK ABOHAR
4	543530	GRILL MASTERS	India	Abohar	--	Too Few Ratings	Italian-American,Fast Food	<a href="https://www.swiggy.com/restaurants/grill-maste...">https://www.swiggy.com/restaurants/grill-maste...</a>	GRILL MASTERS, ADA Heights, Abohar - Hanumanga...
...	...	...	...	...	...	...	...	...	...
148535	553122	The Food Delight	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/the-food-de...">https://www.swiggy.com/restaurants/the-food-de...</a>	The Food Delight, 94MC+X35, New Singhanian Naga...
148536	562647	MAITRI FOODS & BEVERAGES	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/maitri-food...">https://www.swiggy.com/restaurants/maitri-food...</a>	MAITRI FOODS & BEVERAGES, POLIC MITRYA SOCIETY...



	id	name	Country	city	rating	rating_count	cuisine	link	address
<b>148537</b>	559435	Cafe Bella Ciao	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/cafe-bella-...">https://www.swiggy.com/restaurants/cafe-bella-...</a>	Cafe Bella Ciao, SHOP NO 2 NEMANI MARKET SBI S...
<b>148538</b>	418989	GRILL ZILLA	India	Yavatmal	--	Too Few Ratings	Continental	<a href="https://www.swiggy.com/restaurants/grill-zilla-...">https://www.swiggy.com/restaurants/grill-zilla-...</a>	GRILL ZILLA, SHO NO 2/6, POSTEL GROUND CHOWPAT...
<b>148539</b>	447770	Lazeez kitchen	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/lazeez-kitc...">https://www.swiggy.com/restaurants/lazeez-kitc...</a>	Lazeez kitchen, 94G3+2RR, Wadgaon, Yavatmal, M...

In [6]: `df.isnull() # To Cheek Nan Value`



Out[6]:

	id	name	Country	city	rating	rating_count	cuisine	link	address
0	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	...	...
148535	False	False	False	False	False	False	False	False	False
148536	False	False	False	False	False	False	False	False	False
148537	False	False	False	False	False	False	False	False	False
148538	False	False	False	False	False	False	False	False	False
148539	False	False	False	False	False	False	False	False	False

148540 rows × 9 columns

In [7]: `df.isnull().sum()` # To Check Nan Value by column

Out[7]:

```

id                0
name              86
Country           0
city              0
rating            86
rating_count      86
cuisine           99
link              0
address           86
dtype: int64

```

In [11]: `df.dropna()` # to drop nan Value

Out[11]:

	id	name	Country	city	rating	rating_count	cuisine	link	address
0	567335	AB FOODS POINT	India	Abohar	--	Too Few Ratings	Beverages,Pizzas	<a href="https://www.swiggy.com/restaurants/ab-foods-po...">https://www.swiggy.com/restaurants/ab-foods-po...</a>	AB FOODS POINT, NEAR RISHI NARANG DENTAL CLINI...
1	531342	Janta Sweet House	India	Abohar	4.4	50+ ratings	Sweets,Bakery	<a href="https://www.swiggy.com/restaurants/janta-sweet...">https://www.swiggy.com/restaurants/janta-sweet...</a>	Janta Sweet House, Bazar No.9, Circullar Road,...
2	158203	theka coffee desi	India	Abohar	3.8	100+ ratings	Beverages	<a href="https://www.swiggy.com/restaurants/theka-coffe...">https://www.swiggy.com/restaurants/theka-coffe...</a>	theka coffee desi, sahtiya sadan road city
3	187912	Singh Hut	India	Abohar	3.7	20+ ratings	Fast Food,Indian	<a href="https://www.swiggy.com/restaurants/singh-hut-n...">https://www.swiggy.com/restaurants/singh-hut-n...</a>	Singh Hut, CIRCULAR ROAD NEAR NEHRU PARK ABOHAR
4	543530	GRILL MASTERS	India	Abohar	--	Too Few Ratings	Italian-American,Fast Food	<a href="https://www.swiggy.com/restaurants/grill-maste...">https://www.swiggy.com/restaurants/grill-maste...</a>	GRILL MASTERS, ADA Heights, Abohar - Hanumanga...
...	...	...	...	...	...	...	...	...	...
148535	553122	The Food Delight	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/the-food-de...">https://www.swiggy.com/restaurants/the-food-de...</a>	The Food Delight, 94MC+X35, New Singhania Naga...
148536	562647	MAITRI FOODS & BEVERAGES	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/maitri-food...">https://www.swiggy.com/restaurants/maitri-food...</a>	MAITRI FOODS BEVERAGES, POLIC MITRYA SOCIETY...



	id	name	Country	city	rating	rating_count	cuisine	link	address
<b>148537</b>	559435	Cafe Bella Ciao	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/cafe-bella-...">https://www.swiggy.com/restaurants/cafe-bella-...</a>	Cafe Bella Ciao, SHOP NO 2 NEMANI MARKET SBI S...
<b>148538</b>	418989	GRILL ZILLA	India	Yavatmal	--	Too Few Ratings	Continental	<a href="https://www.swiggy.com/restaurants/grill-zilla-...">https://www.swiggy.com/restaurants/grill-zilla-...</a>	GRILL ZILLA, SHO NO 2/6, POSTEL GROUND CHOWPAT...
<b>148539</b>	447770	Lazeez kitchen	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/lazeez-kitc-...">https://www.swiggy.com/restaurants/lazeez-kitc-...</a>	Lazeez kitchen, 94G3+2RR, Wadgaon, Yavatmal, M...

In [12]: `df` *#After dropping Nan Value you can See the No of rows*



Out[12]:

	id	name	Country	city	rating	rating_count	cuisine	link	address
0	567335	AB FOODS POINT	India	Abohar	--	Too Few Ratings	Beverages,Pizzas	<a href="https://www.swiggy.com/restaurants/ab-foods-po...">https://www.swiggy.com/restaurants/ab-foods-po...</a>	AB FOODS POINT, NEAR RISHI NARANG DENTAL CLINI...
1	531342	Janta Sweet House	India	Abohar	4.4	50+ ratings	Sweets,Bakery	<a href="https://www.swiggy.com/restaurants/janta-sweet...">https://www.swiggy.com/restaurants/janta-sweet...</a>	Janta Sweet House, Bazar No.9, Circullar Road,...
2	158203	theka coffee desi	India	Abohar	3.8	100+ ratings	Beverages	<a href="https://www.swiggy.com/restaurants/theka-coffe...">https://www.swiggy.com/restaurants/theka-coffe...</a>	theka coffee desi, sahtiya sadan road city
3	187912	Singh Hut	India	Abohar	3.7	20+ ratings	Fast Food,Indian	<a href="https://www.swiggy.com/restaurants/singh-hut-n...">https://www.swiggy.com/restaurants/singh-hut-n...</a>	Singh Hut, CIRCULAR ROAD NEAR NEHRU PARK ABOHAR
4	543530	GRILL MASTERS	India	Abohar	--	Too Few Ratings	Italian-American,Fast Food	<a href="https://www.swiggy.com/restaurants/grill-maste...">https://www.swiggy.com/restaurants/grill-maste...</a>	GRILL MASTERS, ADA Heights, Abohar - Hanumanga...
...	...	...	...	...	...	...	...	...	...
148535	553122	The Food Delight	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/the-food-de...">https://www.swiggy.com/restaurants/the-food-de...</a>	The Food Delight, 94MC+X35, New Singhania Naga...
148536	562647	MAITRI FOODS & BEVERAGES	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/maitri-food...">https://www.swiggy.com/restaurants/maitri-food...</a>	MAITRI FOODS BEVERAGES, POLIC MITRYA SOCIETY...



	id	name	Country	city	rating	rating_count	cuisine	link	address
<b>148537</b>	559435	Cafe Bella Ciao	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/cafe-bella-...">https://www.swiggy.com/restaurants/cafe-bella-...</a>	Cafe Bella Ciao, SHOP NO 2 NEMANI MARKET SBI S...
<b>148538</b>	418989	GRILL ZILLA	India	Yavatmal	--	Too Few Ratings	Continental	<a href="https://www.swiggy.com/restaurants/grill-zilla-...">https://www.swiggy.com/restaurants/grill-zilla-...</a>	GRILL ZILLA, SHO NO 2/6, POSTEL GROUND CHOWPAT...
<b>148539</b>	447770	Lazeez kitchen	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/lazeez-kitc...">https://www.swiggy.com/restaurants/lazeez-kitc...</a>	Lazeez kitchen, 94G3+2RR, Wadgaon, Yavatmal, M...

```
In [ ]: df.replace(np.nan,"") # We Can replace Nan Value with any value
```

- For Replacing nan value from dataset first go through Client Conversation after that we can make changes in dataset
- if want to replace nan value then take mean() value then replace it with nan.

```
In [13]: df["rating"] = df["rating"].replace(np.nan,3) #replacing nan Value in column rating with 3
```

```
In [14]: df
```





Out[14]:

	id	name	Country	city	rating	rating_count	cuisine	link	address
0	567335	AB FOODS POINT	India	Abohar	--	Too Few Ratings	Beverages,Pizzas	<a href="https://www.swiggy.com/restaurants/ab-foods-po...">https://www.swiggy.com/restaurants/ab-foods-po...</a>	AB FOODS POINT, NEAR RISHI NARANG DENTAL CLINI...
1	531342	Janta Sweet House	India	Abohar	4.4	50+ ratings	Sweets,Bakery	<a href="https://www.swiggy.com/restaurants/janta-sweet...">https://www.swiggy.com/restaurants/janta-sweet...</a>	Janta Sweet House, Bazar No.9, Circullar Road,...
2	158203	theka coffee desi	India	Abohar	3.8	100+ ratings	Beverages	<a href="https://www.swiggy.com/restaurants/theka-coffe...">https://www.swiggy.com/restaurants/theka-coffe...</a>	theka coffee desi, sahtiya sadan road city
3	187912	Singh Hut	India	Abohar	3.7	20+ ratings	Fast Food,Indian	<a href="https://www.swiggy.com/restaurants/singh-hut-n...">https://www.swiggy.com/restaurants/singh-hut-n...</a>	Singh Hut, CIRCULAR ROAD NEAR NEHRU PARK ABOHAR
4	543530	GRILL MASTERS	India	Abohar	--	Too Few Ratings	Italian-American,Fast Food	<a href="https://www.swiggy.com/restaurants/grill-maste...">https://www.swiggy.com/restaurants/grill-maste...</a>	GRILL MASTERS, ADA Heights, Abohar - Hanumanga...
...	...	...	...	...	...	...	...	...	...
148535	553122	The Food Delight	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/the-food-de...">https://www.swiggy.com/restaurants/the-food-de...</a>	The Food Delight, 94MC+X35, New Singhania Naga...
148536	562647	MAITRI FOODS & BEVERAGES	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/maitri-food...">https://www.swiggy.com/restaurants/maitri-food...</a>	MAITRI FOODS BEVERAGES, POLIC MITRYA SOCIETY...



	id	name	Country	city	rating	rating_count	cuisine	link	address
<b>148537</b>	559435	Cafe Bella Ciao	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/cafe-bella-...">https://www.swiggy.com/restaurants/cafe-bella-...</a>	Cafe Bella Ciao, SHOP NO 2 NEMANI MARKET SBI S...
<b>148538</b>	418989	GRILL ZILLA	India	Yavatmal	--	Too Few Ratings	Continental	<a href="https://www.swiggy.com/restaurants/grill-zilla-...">https://www.swiggy.com/restaurants/grill-zilla-...</a>	GRILL ZILLA, SHO NO 2/6, POSTEL GROUND CHOWPAT...
<b>148539</b>	447770	Lazeez kitchen	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/lazeez-kitc-...">https://www.swiggy.com/restaurants/lazeez-kitc...</a>	Lazeez kitchen, 94G3+2RR, Wadgaon, Yavatmal, M...

In [15]: `df.isnull().sum()` # To Cheek Nan Value by column now we can see that nan value is fully replaced now it is showing 0

Out[15]:

```

id          0
name        86
Country     0
city        0
rating      0
rating_count 86
cuisine     99
link        0
address     86
dtype: int64

```

In [18]: `df.fillna(method = "bfill")` # to fill nan value with backward fill



Out[18]:

	id	name	Country	city	rating	rating_count	cuisine	link	address
0	567335	AB FOODS POINT	India	Abohar	--	Too Few Ratings	Beverages,Pizzas	<a href="https://www.swiggy.com/restaurants/ab-foods-po...">https://www.swiggy.com/restaurants/ab-foods-po...</a>	AB FOODS POINT, NEAR RISHI NARANG DENTAL CLINI...
1	531342	Janta Sweet House	India	Abohar	4.4	50+ ratings	Sweets,Bakery	<a href="https://www.swiggy.com/restaurants/janta-sweet...">https://www.swiggy.com/restaurants/janta-sweet...</a>	Janta Sweet House, Bazar No.9, Circullar Road,...
2	158203	theka coffee desi	India	Abohar	3.8	100+ ratings	Beverages	<a href="https://www.swiggy.com/restaurants/theka-coffe...">https://www.swiggy.com/restaurants/theka-coffe...</a>	theka coffee desi, sahtiya sadan road city
3	187912	Singh Hut	India	Abohar	3.7	20+ ratings	Fast Food,Indian	<a href="https://www.swiggy.com/restaurants/singh-hut-n...">https://www.swiggy.com/restaurants/singh-hut-n...</a>	Singh Hut, CIRCULAR ROAD NEAR NEHRU PARK ABOHAR
4	543530	GRILL MASTERS	India	Abohar	--	Too Few Ratings	Italian-American,Fast Food	<a href="https://www.swiggy.com/restaurants/grill-maste...">https://www.swiggy.com/restaurants/grill-maste...</a>	GRILL MASTERS, ADA Heights, Abohar - Hanumanga...
...	...	...	...	...	...	...	...	...	...
148535	553122	The Food Delight	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/the-food-de...">https://www.swiggy.com/restaurants/the-food-de...</a>	The Food Delight, 94MC+X35, New Singhania Naga...
148536	562647	MAITRI FOODS & BEVERAGES	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/maitri-food...">https://www.swiggy.com/restaurants/maitri-food...</a>	MAITRI FOODS BEVERAGES, POLIC MITRYA SOCIETY...



	id	name	Country	city	rating	rating_count	cuisine	link	address
<b>148537</b>	559435	Cafe Bella Ciao	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/cafe-bella-...">https://www.swiggy.com/restaurants/cafe-bella-...</a>	Cafe Bella Ciao, SHOP NO 2 NEMANI MARKET SBI S...
<b>148538</b>	418989	GRILL ZILLA	India	Yavatmal	--	Too Few Ratings	Continental	<a href="https://www.swiggy.com/restaurants/grill-zilla-...">https://www.swiggy.com/restaurants/grill-zilla-...</a>	GRILL ZILLA, SHO NO 2/6, POSTEL GROUND CHOWPAT...
<b>148539</b>	447770	Lazeez kitchen	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/lazeez-kitc...">https://www.swiggy.com/restaurants/lazeez-kitc...</a>	Lazeez kitchen, 94G3+2RR, Wadgaon, Yavatmal, M...

In [19]: `df.fillna(method = "bfill") # to fill nan value with forward fill`



Out[19]:

	id	name	Country	city	rating	rating_count	cuisine	link	address
0	567335	AB FOODS POINT	India	Abohar	--	Too Few Ratings	Beverages,Pizzas	<a href="https://www.swiggy.com/restaurants/ab-foods-po...">https://www.swiggy.com/restaurants/ab-foods-po...</a>	AB FOODS POINT, NEAR RISHI NARANG DENTAL CLINI...
1	531342	Janta Sweet House	India	Abohar	4.4	50+ ratings	Sweets,Bakery	<a href="https://www.swiggy.com/restaurants/janta-sweet...">https://www.swiggy.com/restaurants/janta-sweet...</a>	Janta Sweet House, Bazar No.9, Circullar Road,...
2	158203	theka coffee desi	India	Abohar	3.8	100+ ratings	Beverages	<a href="https://www.swiggy.com/restaurants/theka-coffe...">https://www.swiggy.com/restaurants/theka-coffe...</a>	theka coffee desi, sahtiya sadan road city
3	187912	Singh Hut	India	Abohar	3.7	20+ ratings	Fast Food,Indian	<a href="https://www.swiggy.com/restaurants/singh-hut-n...">https://www.swiggy.com/restaurants/singh-hut-n...</a>	Singh Hut, CIRCULAR ROAD NEAR NEHRU PARK ABOHAR
4	543530	GRILL MASTERS	India	Abohar	--	Too Few Ratings	Italian-American,Fast Food	<a href="https://www.swiggy.com/restaurants/grill-maste...">https://www.swiggy.com/restaurants/grill-maste...</a>	GRILL MASTERS, ADA Heights, Abohar - Hanumanga...
...	...	...	...	...	...	...	...	...	...
148535	553122	The Food Delight	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	<a href="https://www.swiggy.com/restaurants/the-food-de...">https://www.swiggy.com/restaurants/the-food-de...</a>	The Food Delight, 94MC+X35, New Singhania Naga...
148536	562647	MAITRI FOODS & BEVERAGES	India	Yavatmal	--	Too Few Ratings	Pizzas	<a href="https://www.swiggy.com/restaurants/maitri-food...">https://www.swiggy.com/restaurants/maitri-food...</a>	MAITRI FOODS BEVERAGES, POLIC MITRYA SOCIETY...



	id	name	Country	city	rating	rating_count	cuisine	link	address
148537	559435	Cafe Bella Ciao	India	Yavatmal	--	Too Few Ratings	Fast Food,Snacks	https://www.swiggy.com/restaurants/cafe-bella-...	Cafe Bella Ciao, SHOP NO 2 NEMANI MARKET SBI S...
148538	418989	GRILL ZILLA	India	Yavatmal	--	Too Few Ratings	Continental	https://www.swiggy.com/restaurants/grill-zilla...	GRILL ZILLA, SHO NO 2/6, POSTEL GROUND CHOWPAT...
148539	447770	Lazeez kitchen	India	Yavatmal	--	Too Few Ratings	Pizzas	https://www.swiggy.com/restaurants/lazeez-kitc...	Lazeez kitchen, 94G3+2RR, Wadgaon, Yavatmal, M...

In [ ]:

