Handling Missing Values in Pandas Dataframe

`In [ ]:` *#import important library and read the dataset*

`In [2]:`
```python
import pandas as pd
df = pd.read_csv(r"C:\Users\verma\Downloads\Bengaluru_House_Data.csv")
df
```

`Out[2]:`

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	NaN	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	NaN	3600	5.0	NaN
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0

13320 rows × 9 columns

```
In [3]: df.head()   #show 1st 5 row and column
```

Out[3]:

	area_type	availability	location	size	society	total_sqft	bath	balcony	p
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	3!
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	12(
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0	6:
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	9!
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	NaN	1200	2.0	1.0	5!

```
In [4]: df.shape #dimensions of a DataFrame in the form of a tuple
```

Out[4]: (13320, 9)

```
In [5]: df.isnull()   #check null values in the form of binary
```

Out[5]:

	area_type	availability	location	size	society	total_sqft	bath	balcony	price
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	True	False	False	False	False
3	False	False	False	False	False	False	False	False	False
4	False	False	False	False	True	False	False	False	False
...	...	...	...	...	...	...	...	...	...
13315	False	False	False	False	False	False	False	False	False
13316	False	False	False	False	True	False	False	True	False
13317	False	False	False	False	False	False	False	False	False
13318	False	False	False	False	False	False	False	False	False
13319	False	False	False	False	True	False	False	False	False

13320 rows × 9 columns

```
In [6]: df.isnull().sum() #show the null values in numerical form
```

Out[6]: area_type   0
        availability   0
        location   1
        size   16
        society   5502
        total_sqft   0
        bath   73
        balcony   609
        price   0
        dtype: int64

```
In [7]: df.isnull().sum().sum() #show total null values
```

Out[7]: 6201

FILLING NULL VALUES

```
In [9]: df2 = df.fillna(value = 0)
        df2
```

Out[9]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	0	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	0	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	0	3600	5.0	0.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	0	550	1.0	1.0

13320 rows × 9 columns

```
In [11]: df2.isnull().sum().sum()  #check null values filled or not
```

Out[11]: 0

filling null values with previous value

```
In [13]:  #filling null values with previous value
          df4 = df.fillna(method = 'pad')
          df4
```

Out[13]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	Theanmp	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	Soiewre	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	ArsiaEx	3600	5.0	0.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	SollyCl	550	1.0	1.0

13320 rows × 9 columns

```
In [14]:  df4.isnull().sum()
```

Out[14]: area_type   0
          availability   0
          location   0
          size   0
          society   0
          total_sqft   0
          bath   0
          balcony   0
          price   0
          dtype: int64

filling null values using fillna(method = 'bfill')

```
In [16]: df5 = df.fillna(method = 'bfill')
         df5
```

Out[16]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	Soiewre	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	DuenaTa	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	Mahla T	3600	5.0	1.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0

13320 rows × 9 columns

fill null value previous column value

```
In [18]: df6 = df.fillna(method ='pad',axis =1)
         df6
```

Out[18]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	3 BHK	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	2 BHK	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	4 BHK	3600	5.0	5.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	1 BHK	550	1.0	1.0

13320 rows × 9 columns

```
In [ ]: # fill null value previous column value
```

```
In [19]: df7 = df.fillna(method ='bfill',axis =1)
         df6
```

Out[19]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	3 BHK	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	2 BHK	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	4 BHK	3600	5.0	5.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	1 BHK	550	1.0	1.0

13320 rows × 9 columns

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```
In [20]: df7.head()
```

Out[20]:

	area_type	availability	location	size	society	total_sqft	bath	balcony	pri
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	12(
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	1440	1440	2.0	3.0	6:
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	9!
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	1200	1200	2.0	1.0	5'

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filling different values in null in different columns

```
In [22]: df8 = df.fillna({'society': 'abcd','balcony':'defg'})
         df8
```

Out[22]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	abcd	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	abcd	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	abcd	3600	5.0	defg
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	abcd	550	1.0	1.0

13320 rows × 9 columns

filling null values with the mean of a columns

```
In [31]:   df9 = df.fillna(value = df['balcony'].mean())
           df9
```

Out[31]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.000000
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.000000
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	1.584376	1440	2.0	3.000000
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.000000
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	1.584376	1200	2.0	1.000000
...	...	...	...	...	...	...	...	..
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.000000
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	1.584376	3600	5.0	1.584376
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.000000
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.000000
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	1.584376	550	1.0	1.000000

13320 rows × 9 columns

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```
In [ ]:    #filling null values with the max of a columns
```

```
In [30]: df10 = df.fillna(value = df['balcony'].max())
         df10
```

Out[30]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	3.0	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	3.0	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	3.0	3600	5.0	3.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	3.0	550	1.0	1.0

13320 rows × 9 columns

filling null values with the min of a columns

```
In [32]: df11 = df.fillna(value = df['balcony'].min())
         df11
```

Out[32]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	0.0	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	0.0	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	0.0	3600	5.0	0.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	0.0	550	1.0	1.0

13320 rows × 9 columns

dropna()

In [33]: df #original dataset

Out[33]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	NaN	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	NaN	3600	5.0	NaN
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0

13320 rows × 9 columns

```
In [35]: df11 =df.dropna()
         df11
```

Out[35]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
5	Super built-up Area	Ready To Move	Whitefield	2 BHK	DuenaTa	1170	2.0	1.0
11	Plot Area	Ready To Move	Whitefield	4 Bedroom	Prrry M	2785	5.0	3.0
...	...	...	...	...	...	...	...	...
13313	Super built-up Area	Ready To Move	Uttarahalli	3 BHK	Aklia R	1345	2.0	1.0
13314	Super built-up Area	Ready To Move	Green Glen Layout	3 BHK	SoosePr	1715	3.0	3.0
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0

7496 rows × 9 columns

```
In [37]: df12 = df.dropna(how = 'all')
         df12
```

Out[37]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	NaN	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	NaN	3600	5.0	NaN
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0

13320 rows × 9 columns

```
In [38]: df12 = df.dropna(how = 'any')
         df12
```

Out[38]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
5	Super built-up Area	Ready To Move	Whitefield	2 BHK	DuenaTa	1170	2.0	1.0
11	Plot Area	Ready To Move	Whitefield	4 Bedroom	Prrry M	2785	5.0	3.0
...	...	...	...	...	...	...	...	...
13313	Super built-up Area	Ready To Move	Uttarahalli	3 BHK	Aklia R	1345	2.0	1.0
13314	Super built-up Area	Ready To Move	Green Glen Layout	3 BHK	SoosePr	1715	3.0	3.0
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0

7496 rows × 9 columns

replace()

```
In [40]: import numpy as np
         df12 = df.replace(to_replace =np.nan,value =875465)
         df12
```

Out[40]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	875465	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	875465	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	875465	3600	5.0	875465.0
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	875465	550	1.0	1.0

13320 rows × 9 columns

interpolate()

```
In [ ]: 1
        2
        3
        4
        nan#should be 5 or 5.5
        6
        7
```

```
In [42]: df['balcony'] = df['balcony'].interpolate(method = 'linear')
         df
```

Out[42]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	NaN	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	NaN	3600	5.0	0.5
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0

13320 rows × 9 columns

```
In [48]: df['balcony'] = df['balcony'].interpolate(method='linear', limit_direction=
         df
```

Out[48]:

	area_type	availability	location	size	society	total_sqft	bath	balcony
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	NaN	1200	2.0	1.0
...	...	...	...	...	...	...	...	...
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	NaN	3600	5.0	0.5
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0

13320 rows × 9 columns