HANDLING MISSING DATA

```
In [1]:

    import pandas as pd

           M
              df = pd.read_csv('C:\\Users\\Asus\\Downloads\\Bengaluru_House_Data.csv')
In [2]:
    Out[2]:
                               area_type
                                              availability
                                                                       location
                                                                                      size
                                                                                             society
                                                                                                     total_sqft
                                                                                                                bath
                                                                                                                       balcony
                                                                                                                                  price
                                                 19-Dec Electronic City Phase II
                                                                                                                                 39.07
                    0 Super built-up Area
                                                                                    2 BHK
                                                                                            Coomee
                                                                                                          1056
                                                                                                                  20
                                                                                                                            1.0
                    1
                                Plot Area Ready To Move
                                                                Chikka Tirupathi
                                                                                4 Bedroom
                                                                                                          2600
                                                                                                                  5.0
                                                                                                                            3.0
                                                                                                                                120.00
                                                                                            Theanmp
                    2
                             Built-up Area
                                          Ready To Move
                                                                     Uttarahalli
                                                                                    3 BHK
                                                                                                NaN
                                                                                                          1440
                                                                                                                  2.0
                                                                                                                            3.0
                                                                                                                                 62.00
                    3
                       Super built-up Area
                                          Ready To Move
                                                             Lingadheeranahalli
                                                                                    3 BHK
                                                                                             Soiewre
                                                                                                          1521
                                                                                                                  3.0
                                                                                                                            1.0
                                                                                                                                 95.00
                       Super built-up Area
                                          Ready To Move
                                                                      Kothanur
                                                                                    2 BHK
                                                                                                NaN
                                                                                                           1200
                                                                                                                  2.0
                                                                                                                            1.0
                                                                                                                                 51.00
                13315
                             Built-up Area Ready To Move
                                                                     Whitefield 5 Bedroom
                                                                                             ArsiaEx
                                                                                                          3453
                                                                                                                  4.0
                                                                                                                            0.0
                                                                                                                                231.00
                                                                 Richards Town
                                                                                                                               400.00
                13316 Super built-up Area
                                          Ready To Move
                                                                                    4 BHK
                                                                                                NaN
                                                                                                          3600
                                                                                                                  5.0
                                                                                                                          NaN
                13317
                                                                                    2 BHK
                                                                                             Mahla T
                                                                                                           1141
                                                                                                                                 60.00
                             Built-up Area
                                          Ready To Move
                                                          Raja Rajeshwari Nagar
                                                                                                                  2.0
                                                                                                                            1.0
                13318 Super built-up Area
                                                  18-Jun
                                                             Padmanabhanagar
                                                                                    4 BHK
                                                                                              SollyCl
                                                                                                          4689
                                                                                                                  4.0
                                                                                                                            1.0
                                                                                                                                488.00
                13319 Super built-up Area Ready To Move
                                                                  Doddathoguru
                                                                                    1 BHK
                                                                                                NaN
                                                                                                           550
                                                                                                                            1.0
                                                                                                                                 17.00
               13320 rows × 9 columns
In [3]:

    df.shape

    Out[3]: (13320, 9)
           M
              df.isnull()
In [4]:
    Out[4]:
                       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
                                                                                  False
                                                                                                  False
                                                                  True
                                                                            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
                13319
                            False
                                        False
                                                 False False
                                                                            False False
                                                                                            False False
                                                                  True
               13320 rows × 9 columns
In [5]:

    df.isnull().sum()

    Out[5]: area_type
                                       0
               availability
                                       0
               location
                                       1
               size
                                      16
               society
                                   5502
               total_sqft
                                       0
               bath
                                      73
               balcony
                                     609
               price
                                       0
               dtype: int64
```

Filling Null Values In [7]: M df1=df.fillna(0) Out[7]: availability location area_type size society total_sqft bath balcony price Super built-up Area 19-Dec Electronic City Phase II 2 BHK Coomee 1056 2.0 1.0 39 07 120.00 1 Plot Area Ready To Move Chikka Tirupathi 2600 5.0 3.0 4 Bedroom Theanmp 2 Built-up Area Ready To Move Uttarahalli 3 BHK 0 1440 2.0 3.0 62.00 3 Super built-up Area Ready To Move Lingadheeranahalli 3 BHK Soiewre 1521 3.0 95.00 1.0 Super built-up Area Ready To Move Kothanur 2 BHK 1200 51.00 13315 Built-up Area Ready To Move Whitefield 5 Bedroom ArsiaEx 3453 0.0 231.00 13316 Super built-up Area Ready To Move Richards Town 4 BHK 0 3600 5.0 0.0 400.00 13317 Raja Rajeshwari Nagar 2 BHK Mahla T 1141 2.0 60.00 Built-up Area Ready To Move 1.0 13318 Super built-up Area 18-Jun Padmanabhanagar 4 BHK SollyCl 4689 4.0 1.0 488.00 13319 Super built-up Area Ready To Move Doddathoguru 1 BHK 550 1.0 1.0 17.00 13320 rows × 9 columns In [8]: df1.isnull().sum().sum() Out[8]: 0 df.isnull().sum().sum() Out[9]: 6201 M df2=df.fillna(5) In [10]: df2 Out[10]: area_type availability location size society total_sqft bath balcony price Super built-up Area 19-Dec Electronic City Phase II 2 BHK Coomee 1056 2.0 39.07 1 Chikka Tirupathi 2600 5.0 120.00 Plot Area Ready To Move 4 Bedroom 3.0 Theanmp 2 Uttarahalli **3 BHK** 1440 2.0 62.00 Built-up Area Ready To Move Lingadheeranahalli 3 Super built-up Area Ready To Move 3 BHK Soiewre 1521 3.0 10 95 00 2 BHK 1200 2.0 51.00 Super built-up Area Ready To Move Kothanur 13315 Built-up Area Ready To Move Whitefield 5 Bedroom ArsiaEx 3453 4.0 0.0 231.00 13316 Super built-up Area Ready To Move Richards Town 4 BHK 5 3600 5.0 5.0 400.00 13317 2 BHK Mahla T 1141 2.0 1.0 60.00 Built-up Area Ready To Move Raia Raieshwari Nagar 13318 Super built-up Area 18-Jun Padmanabhanagar 4 BHK SollyCl 4689 4.0 1.0 488.00 13319 Super built-up Area Ready To Move Doddathoguru 1 BHK 550 10 10 17 00 13320 rows × 9 columns

Filling Null Values with previous value

df.isnull().sum().sum()

In [6]:

Out[6]: 6201

In	[11]:	M	df3=df df3	.fillna(method=	'pad') #prev	ious row							
	Out[11	1]:		area_type	availability	location	size	society	total_sqft	bath	balcony	price	
			0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.07	
			1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	120.00	
			2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	Theanmp	1440	2.0	3.0	62.00	
			3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	95.00	
			4	Super built-up Area	Ready To Move	Kothanur	2 BHK	Soiewre	1200	2.0	1.0	51.00	
			13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0	231.00	
			13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	ArsiaEx	3600	5.0	0.0	400.00	
			13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0	60.00	
			13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0	488.00	
			13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	SollyCl	550	1.0	1.0	17.00	
			13320 ı	rows × 9 columns									
In	[12]:	M	df4=df df4	.fillna(method=	:'pad',axis=1) #previous column	1						
	Out[12	2]:		area_type	availability	location	size	society	total_sqft	bath	balcony	price	
			0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.07	
			1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	120.0	
			2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	3 BHK	1440	2.0	3.0	62.0	
			3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	95.0	
			4	Super built-up Area	Ready To Move	Kothanur	2 BHK	2 BHK	1200	2.0	1.0	51.0	
			13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0	231.0	
			13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	4 BHK	3600	5.0	5.0	400.0	
			13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0	60.0	
			13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0	488.0	
			13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	1 BHK	550	1.0	1.0	17.0	

Filling Null Values with next value

13320 rows × 9 columns

n [13]: M										
. [23]. //	df5=df df5	.fillna(method=	'bfill') #n	ext row						
Out[13]:	area_type		availability	location	size	society	total_sqft	bath	balcony	price
	0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.07
	1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	120.00
	2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	Soiewre	1440	2.0	3.0	62.00
	3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	95.00
	4	Super built-up Area	Ready To Move	Kothanur	2 BHK	DuenaTa	1200	2.0	1.0	51.00
	13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0	231.00
	13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	Mahla T	3600	5.0	1.0	400.00
	13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0	60.00
	13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0	488.00
	13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0	17.00
5 M		rows × 9 columns								
n [14]: 🕨			'bfill',axis	=1) #next column						
Out[14]: M	df6=df		'bfill', axis	=1) #next column	size	society	total_sqft	bath	balcony	price
	df6=df df6	.fillna(method=	,	,	size 2 BHK	society Coomee	total_sqft	bath 2.0	balcony	price 39.07
	df6=df df6	.fillna(method=	availability	location	2 BHK					<u> </u>
	df6=df df6	.fillna(method= area_type Super built-up Area	availability	location Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.07
	df6=df df6	.fillna(method= area_type Super built-up Area Plot Area	availability 19-Dec Ready To Move	location Electronic City Phase II Chikka Tirupathi	2 BHK 4 Bedroom	Coomee Theanmp	1056	2.0 5.0	1.0	39.07 120.0
	df6=df df6	area_type Super built-up Area Plot Area Built-up Area	availability 19-Dec Ready To Move Ready To Move	location Electronic City Phase II Chikka Tirupathi Uttarahalli	2 BHK 4 Bedroom 3 BHK	Coomee Theanmp 1440	1056 2600 1440	2.0 5.0 2.0	1.0 3.0 3.0	39.07 120.0 62.0
	0 1 2 3	area_type Super built-up Area Plot Area Built-up Area Super built-up Area	availability 19-Dec Ready To Move Ready To Move Ready To Move	location Electronic City Phase II Chikka Tirupathi Uttarahalli Lingadheeranahalli	2 BHK 4 Bedroom 3 BHK 3 BHK	Coomee Theanmp 1440 Soiewre	1056 2600 1440 1521	2.0 5.0 2.0 3.0	1.0 3.0 3.0 1.0	39.07 120.0 62.0 95.0
	0 1 2 3 4	area_type Super built-up Area Plot Area Built-up Area Super built-up Area Super built-up Area	availability 19-Dec Ready To Move Ready To Move Ready To Move	location Electronic City Phase II Chikka Tirupathi Uttarahalli Lingadheeranahalli Kothanur	2 BHK 4 Bedroom 3 BHK 3 BHK 2 BHK	Coomee Theanmp 1440 Soiewre 1200	1056 2600 1440 1521 1200	2.0 5.0 2.0 3.0 2.0	1.0 3.0 3.0 1.0	39.07 120.0 62.0 95.0 51.0
	0 1 2 3 4	area_type Super built-up Area Plot Area Built-up Area Super built-up Area Super built-up Area	availability 19-Dec Ready To Move Ready To Move Ready To Move Ready To Move	location Electronic City Phase II Chikka Tirupathi Uttarahalli Lingadheeranahalli Kothanur	2 BHK 4 Bedroom 3 BHK 3 BHK 2 BHK	Coomee Theanmp 1440 Soiewre 1200	1056 2600 1440 1521 1200	2.0 5.0 2.0 3.0 2.0	1.0 3.0 3.0 1.0 1.0	39.07 120.0 62.0 95.0 51.0
	df6=df df6 0 1 2 3 4 13315	area_type Super built-up Area Plot Area Built-up Area Super built-up Area Super built-up Area Built-up Area	availability 19-Dec Ready To Move	location Electronic City Phase II Chikka Tirupathi Uttarahalli Lingadheeranahalli Kothanur Whitefield	2 BHK 4 Bedroom 3 BHK 3 BHK 2 BHK 5 Bedroom	Coomee Theanmp 1440 Soiewre 1200 ArsiaEx	1056 2600 1440 1521 1200 	2.0 5.0 2.0 3.0 2.0 4.0	1.0 3.0 3.0 1.0 1.0	39.07 120.0 62.0 95.0 51.0
	df6=df df6 0 1 2 3 4 13315	area_type Super built-up Area Plot Area Built-up Area Super built-up Area Super built-up Area Built-up Area Super built-up Area	availability 19-Dec Ready To Move	location Electronic City Phase II Chikka Tirupathi Uttarahalli Lingadheeranahalli Kothanur Whitefield Richards Town	2 BHK 4 Bedroom 3 BHK 3 BHK 2 BHK 5 Bedroom 4 BHK	Coomee Theanmp 1440 Soiewre 1200 ArsiaEx 3600	1056 2600 1440 1521 1200 3453 3600	2.0 5.0 2.0 3.0 2.0 4.0 5.0	1.0 3.0 3.0 1.0 1.0 0.0 400.0	39.07 120.0 62.0 95.0 51.0 231.0 400.0

filling different values at null

13320 rows × 9 columns

```
M df7=df.fillna({'society':'abcde','balcony':'efghi'})
In [15]:
    Out[15]:
                                  area_type
                                                  availability
                                                                            location
                                                                                            size
                                                                                                    society
                                                                                                            total_sqft
                                                                                                                        bath
                                                                                                                              balcony
                                                                                                                                          price
                          Super built-up Area
                                                      19-Dec Electronic City Phase II
                                                                                                                         2.0
                                                                                                                                         39.07
                                                                                          2 BHK
                                                                                                   Coomee
                                                                                                                  1056
                                                                                                                                    1.0
                                   Plot Area
                                                                     Chikka Tirupathi
                                                                                                                 2600
                                                                                                                         5.0
                                                                                                                                   3.0
                                                                                                                                        120.00
                                             Ready To Move
                                                                                     4 Bedroom
                                                                                                  Theanmp
                       2
                                Built-up Area
                                              Ready To Move
                                                                          Uttarahalli
                                                                                          3 BHK
                                                                                                     abcde
                                                                                                                  1440
                                                                                                                         2.0
                                                                                                                                   3.0
                                                                                                                                         62.00
                       3
                                                                                          3 BHK
                                                                                                                                         95.00
                          Super built-up Area
                                              Ready To Move
                                                                  Lingadheeranahalli
                                                                                                   Soiewre
                                                                                                                 1521
                                                                                                                          3.0
                                                                                                                                   1.0
                          Super built-up Area
                                              Ready To Move
                                                                           Kothanur
                                                                                          2 BHK
                                                                                                     abcde
                                                                                                                  1200
                                                                                                                          2.0
                                                                                                                                         51.00
                  13315
                                                                           Whitefield
                                                                                                                 3453
                                                                                                                          4.0
                                                                                                                                        231.00
                                Built-up Area
                                             Ready To Move
                                                                                     5 Bedroom
                                                                                                    ArsiaEx
                  13316
                          Super built-up Area
                                                                      Richards Town
                                                                                          4 BHK
                                                                                                                         5.0
                                                                                                                                        400.00
                                              Ready To Move
                                                                                                     abcde
                                                                                                                 3600
                                                                                                                                  efghi
                  13317
                                                                                                   Mahla T
                                Built-up Area
                                              Ready To Move
                                                               Raja Rajeshwari Nagar
                                                                                          2 BHK
                                                                                                                  1141
                                                                                                                          2.0
                                                                                                                                    1.0
                                                                                                                                         60.00
                  13318
                          Super built-up Area
                                                      18-Jun
                                                                  Padmanabhanagar
                                                                                          4 BHK
                                                                                                    SollyCl
                                                                                                                 4689
                                                                                                                          4.0
                                                                                                                                    1.0
                                                                                                                                        488.00
                  13319
                         Super built-up Area Ready To Move
                                                                       Doddathoguru
                                                                                          1 BHK
                                                                                                     abcde
                                                                                                                  550
                                                                                                                          1.0
                                                                                                                                    1.0
                                                                                                                                         17.00
                 13320 rows × 9 columns
In [16]:
                 df8=df.fillna(value=df['balcony'].mean()) #fill null value by mean value of thet column.
                 #df8=df.fillna(value=df['balcony'].max())
#df8=df.fillna(value=df['balcony'].min())
    Out[16]:
                                  area_type
                                                  availability
                                                                            location
                                                                                            size
                                                                                                   society
                                                                                                            total_sqft
                                                                                                                        bath
                                                                                                                               balcony
                                                                                                                                          price
                          Super built-up Area
                                                      19-Dec
                                                              Electronic City Phase II
                                                                                          2 BHK
                                                                                                   Coomee
                                                                                                                  1056
                                                                                                                          2.0
                                                                                                                              1.000000
                                                                                                                                          39.07
                       1
                                                                                                                 2600
                                                                                                                              3.000000
                                                                                                                                         120.00
                                   Plot Area
                                             Ready To Move
                                                                     Chikka Tirupathi
                                                                                     4 Bedroom
                                                                                                  Theanmp
                                                                                                                         5.0
                       2
                                Built-up Area
                                              Ready To Move
                                                                          Uttarahalli
                                                                                          3 BHK
                                                                                                  1.584376
                                                                                                                  1440
                                                                                                                         2.0
                                                                                                                              3.000000
                                                                                                                                          62.00
                       3
                          Super built-up Area
                                                                                          3 BHK
                                                                                                                 1521
                                                                                                                         3.0
                                                                                                                              1.000000
                                                                                                                                          95.00
                                              Ready To Move
                                                                  Lingadheeranahalli
                                                                                                   Soiewre
                          Super built-up Area
                                              Ready To Move
                                                                           Kothanur
                                                                                          2 BHK
                                                                                                  1.584376
                                                                                                                  1200
                                                                                                                          2.0
                                                                                                                              1.000000
                                                                                                                                          51.00
                                                                           Whitefield
                                                                                                                 3453
                  13315
                                Built-up Area
                                             Ready To Move
                                                                                     5 Bedroom
                                                                                                   ArsiaEx
                                                                                                                          4.0
                                                                                                                              0.000000
                                                                                                                                         231.00
                          Super built-up Area
                                                                                                  1 584376
                                                                                                                                         400 00
                  13316
                                              Ready To Move
                                                                      Richards Town
                                                                                          4 BHK
                                                                                                                 3600
                                                                                                                         5.0
                                                                                                                              1.584376
                  13317
                                Built-up Area
                                              Ready To Move
                                                              Raja Rajeshwari Nagar
                                                                                          2 BHK
                                                                                                   Mahla T
                                                                                                                  1141
                                                                                                                              1.000000
                                                                                                                                          60.00
                  13318 Super built-up Area
                                                      18-Jun
                                                                  Padmanabhanagar
                                                                                          4 BHK
                                                                                                    SollyCl
                                                                                                                 4689
                                                                                                                          4.0
                                                                                                                              1.000000
                                                                                                                                         488.00
                  13319
                          Super built-up Area Ready To Move
                                                                                          1 BHK 1.584376
                                                                                                                  550
                                                                                                                          1.0
                                                                                                                              1.000000
                                                                                                                                          17.00
```

Doddathoguru

13320 rows × 9 columns

Deleting null values

Out[17]:

	area_type	availability	location	size	society	total_sqft	bath	balcony	price
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.07
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	120.00
3	3 Super built-up Area Ready To Move Lingadhee		Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	95.00
5	5 Super built-up Area Ready To Move White		Whitefield	2 BHK	DuenaTa	1170	2.0	1.0	38.00
11	Plot Area	Ready To Move	Whitefield	4 Bedroom	Prrry M	2785	5.0	3.0	295.00
13313	Super built-up Area	Ready To Move	Uttarahalli	3 BHK	Aklia R	1345	2.0	1.0	57.00
13314	Super built-up Area	Ready To Move	Green Glen Layout	3 BHK	SoosePr	1715	3.0	3.0	112.00
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0	231.00
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0	60.00
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0	488.00

7496 rows × 9 columns

In [18]: M df10=df.dropna(how='all') #drop entire row if all values are null values. #df10=df.dropna(how='any') #drop entire row if any value is null values. deafault is "any". df10

Out[18]:

	area_type	availability	location	size	society	total_sqft	bath	balcony	price
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.07
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	120.00
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0	62.00
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	95.00
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	NaN	1200	2.0	1.0	51.00
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0	231.00
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	NaN	3600	5.0	NaN	400.00
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0	60.00
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0	488.00
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0	17.00

13320 rows × 9 columns

Replacing the null values

Out[19]:

	area_type	availability	location	size	society	total_sqft	bath	balcony	price
0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.07
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	120.00
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	POOJA	1440	2.0	3.0	62.00
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	95.00
4	Super built-up Area	Ready To Move	Kothanur	2 BHK	POOJA	1200	2.0	1.0	51.00
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0	231.00
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	POOJA	3600	5.0	POOJA	400.00
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2 BHK	Mahla T	1141	2.0	1.0	60.00
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0	488.00
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	POOJA	550	1.0	1.0	17.00

13320 rows × 9 columns

In [20]: M df12=df.replace(to_replace='2 BHK', value = '2.2 BHK') #can replace any value.

Out[20]:

	area_type	availability	location	size	society	total_sqft	bath	balcony	price
0	Super built-up Area	19-Dec	Electronic City Phase II	2.2 BHK	Coomee	1056	2.0	1.0	39.07
1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	120.00
2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0	62.00
3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	95.00
4	Super built-up Area	Ready To Move	Kothanur	2.2 BHK	NaN	1200	2.0	1.0	51.00
13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0	231.00
13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	NaN	3600	5.0	NaN	400.00
13317	Built-up Area	Ready To Move	Raja Rajeshwari Nagar	2.2 BHK	Mahla T	1141	2.0	1.0	60.00
13318	Super built-up Area	18-Jun	Padmanabhanagar	4 BHK	SollyCl	4689	4.0	1.0	488.00
13319	Super built-up Area	Ready To Move	Doddathoguru	1 BHK	NaN	550	1.0	1.0	17.00

13320 rows × 9 columns

Interpolate function

1,2,nan,3,4 will be interpolate as 1,2,3,4 1,2,nan,3,4 will be interpolate as 1,2,2.5,3,4

In [21]: ▶	<pre>In [21]: df['balcony']=df['balcony'].interpolate(method='linear') #can replace any value. df</pre>									
Out[21]:		area_type	availability	location	size	society	total_sqft	bath	balcony	price
	0	Super built-up Area	19-Dec	Electronic City Phase II	2 BHK	Coomee	1056	2.0	1.0	39.07
	1	Plot Area	Ready To Move	Chikka Tirupathi	4 Bedroom	Theanmp	2600	5.0	3.0	120.00
	2	Built-up Area	Ready To Move	Uttarahalli	3 BHK	NaN	1440	2.0	3.0	62.00
	3	Super built-up Area	Ready To Move	Lingadheeranahalli	3 BHK	Soiewre	1521	3.0	1.0	95.00
	4	Super built-up Area	Ready To Move	Kothanur	2 BHK	NaN	1200	2.0	1.0	51.00
	13315	Built-up Area	Ready To Move	Whitefield	5 Bedroom	ArsiaEx	3453	4.0	0.0	231.00
	13316	Super built-up Area	Ready To Move	Richards Town	4 BHK	NaN	3600	5.0	0.5	400.00

Raja Rajeshwari Nagar

Padmanabhanagar

Doddathoguru

13320 rows × 9 columns

13318 Super built-up Area

Built-up Area Ready To Move

13319 Super built-up Area Ready To Move

18-Jun

13317

In case of consecutive null values we need to provide limit i.e. upto when we need to interpolate and we need to give direction: forward or backword.

2 BHK

4 BHK

1 BHK

Mahla T

SollyCl

NaN

1141

4689

550

4.0

60.00

1.0 488.001.0 17.00

1.0

In [22]: M df['balcony']=df['balcony'].interpolate(method='linear',limit_direction = 'forward') Out[22]: area_type availability location size society total_sqft bath balcony price Super built-up Area 19-Dec Electronic City Phase II 39.07 2 BHK Coomee 1056 20 1.0 1 Plot Area Ready To Move Chikka Tirupathi 4 Bedroom Theanmp 2600 5.0 3.0 120.00 2 Built-up Area Ready To Move Uttarahalli 3 BHK NaN 1440 2.0 3.0 62.00 Super built-up Area Ready To Move Lingadheeranahalli 3 BHK 1521 95.00 Soiewre 1.0 Super built-up Area Ready To Move Kothanur 2 BHK NaN 1200 2.0 1.0 51.00 13315 Built-up Area Ready To Move Whitefield 5 Bedroom ArsiaEx 3453 4.0 231.00 13316 Super built-up Area Richards Town 5.0 Ready To Move 4 RHK NaN 3600 0.5 400.00 13317 Built-up Area Ready To Move Raja Rajeshwari Nagar 2 BHK Mahla T 1141 1.0 60.00 13318 Super built-up Area 4.0 1.0 488.00 18-Jun Padmanabhanagar 4 BHK SollyCl 4689 13319 Super built-up Area Ready To Move 1 BHK NaN 550 1.0 1.0 17.00 Doddathoguru 13320 rows × 9 columns In []: H