https://www.youtube.com/watch?v=kQQaO5Cm5AI&t=8259s #Link

It is a one dimensional array that is capable of storing various data types

```
import pandas as pd
```

```
x=[3,4,5,6,7]
var=pd.Series(x)
print(var)
print(type(var))
print(var[2])
```

```
0    3
1    4
2    5
3    6
4    7
dtype: int64
<class 'pandas.core.series.Series'>
5
```

```
x=[3,4,5,6,7]
var=pd.Series(x,index=['a','b','c','f','g'])
print(var)
print(type(var))
print(var[2])
```

```
a    3
b    4
c    5
f    6
g    7
dtype: int64
<class 'pandas.core.series.Series'>
5
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\232507698.py:5: FutureWarning: Series.__getitem__ treating keys as posit
  print(var[2])
```

```
x=[3,4,5,6,7]
var=pd.Series(x,index=['a','b','c','f','g'],dtype="float")
print(var)
print(type(var))
print(var[2])
```

```
a    3.0
b    4.0
c    5.0
f    6.0
g    7.0
dtype: float64
<class 'pandas.core.series.Series'>
5.0
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\2293629252.py:5: FutureWarning: Series.__getitem__ treating keys as posi
  print(var[2])
```

```
x=[3,4,5,6,7]
var=pd.Series(x,index=['a','b','c','f','g'],dtype="float",name="python")
print(var)
print(type(var))
print(var[2])
```

```
a    3.0
b    4.0
c    5.0
f    6.0
g    7.0
Name: python, dtype: float64
<class 'pandas.core.series.Series'>
5.0
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\1432466190.py:5: FutureWarning: Series.__getitem__ treating keys as posi
  print(var[2])
```

```
dic={"name":["python","c","c++","java"],"por":[12,13,14,15],"rank":[1,2,3,4]}
var=pd.Series(dic)
print(var)
```

```
name    [python, c, c++, java]
por           [12, 13, 14, 15]
rank              [1, 2, 3, 4]
dtype: object
```

```
s=pd.Series(12,index=[1,2,3,4])
print(s)
print(type(s))
```

```
1    12
2    12
3    12
4    12
dtype: int64
<class 'pandas.core.series.Series'>
```

```
s1=pd.Series(12,index=[1,2,3,4])
s2=pd.Series(12,index=[1,2])
print(s1+s2)
```

```
1    24.0
2    24.0
3     NaN
4     NaN
dtype: float64
```

DataFrame: list,dict

```
import pandas as pd
```

```
l=[1,2,3,4,5,6]
var=pd.DataFrame(l)
print(var)
print(type(var))
```

```
   0
0  1
1  2
2  3
3  4
4  5
5  6
<class 'pandas.core.frame.DataFrame'>
```

```
d={"a":[1,2,3,4,5],"s":[1,2,3,4,5]}
var1=pd.DataFrame(d)
print(var1)
print(type(var1))
```

```
   a  s
0  1  1
1  2  2
2  3  3
3  4  4
4  5  5
<class 'pandas.core.frame.DataFrame'>
```

```
d={"a":[1,2,3,4,5],"s":[1,2,3,4,5,6})#wrong
var1=pd.DataFrame(d)
print(var1)
print(type(var1))
```

```
  Cell In[13], line 1
    d={"a":[1,2,3,4,5],"s":[1,2,3,4,5,6}#wrong
                                        ^
SyntaxError: closing parenthesis '}' does not match opening parenthesis '['
```

```
d={"a":[1,2,3,4,5],"s":[1,2,3,4,5]}
var1=pd.DataFrame(d,columns=["a"])
print(var1)
print(type(var1))
```

```
   a
0  1
1  2
2  3
3  4
4  5
<class 'pandas.core.frame.DataFrame'>
```

```
d={"a":[1,2,3,4,5],"s":[1,2,3,4,5],"d":[1,2,3,4,5],1:[1,2,3,4,5]}
var1=pd.DataFrame(d,columns=["a",1])
print(var1)
print(type(var1))
```

```
   a  1
0  1  1
1  2  2
2  3  3
3  4  4
4  5  5
<class 'pandas.core.frame.DataFrame'>
```

```
d={"a":[1,2,3,4,5],"s":[1,2,3,4,5],"d":[1,2,3,4,5],1:[1,2,3,4,5]}
var1=pd.DataFrame(d,columns=["a",1],index=["a","s","f","g","d"])
print(var1)
print(type(var1))
```

```
   a  1
a  1  1
s  2  2
f  3  3
g  4  4
d  5  5
<class 'pandas.core.frame.DataFrame'>
```

```
d={"a":[1,2,3,14,5],"s":[1,2,3,4,5],"d":[1,2,3,4,5],1:[1,2,3,4,5]}
var1=pd.DataFrame(d)
print(var1)
print(type(var1))
print(var1["a"][3])
```

```
    a  s  d  1
0   1  1  1  1
1   2  2  2  2
2   3  3  3  3
3  14  4  4  4
4   5  5  5  5
<class 'pandas.core.frame.DataFrame'>
14
```

```
list_1= [[1,2,3,4,5],[11,12,13,14,15]]
var2=pd.DataFrame(list_1)
print(type(var2))
print(var2)
```

```
<class 'pandas.core.frame.DataFrame'>
    0   1   2   3   4
0   1   2   3   4   5
1  11  12  13  14  15
```

```
sr={"s":pd.Series([1,2,3,4,5]),"r":pd.Series([1,2,3,4,5])}
var3=pd.DataFrame(sr)
print(type(var3))
print(var3)
```

```
<class 'pandas.core.frame.DataFrame'>
   s  r
0  1  1
1  2  2
2  3  3
3  4  4
4  5  5
```

Arithmetic Operators

```
var=pd.DataFrame({"A":[1,2,3,4],"B":[5,6,7,8]})
var
```

	A	B
0	1	5
1	2	6
2	3	7
3	4	8

```
var["C"]=var["A"]+var["B"]
var
```

	A	B	C
0	1	5	6
1	2	6	8
2	3	7	10
3	4	8	12

```
var["C"]=var["A"]-var["B"]
var
```

	A	B	C
0	1	5	-4
1	2	6	-4
2	3	7	-4
3	4	8	-4

```
var["C"]=var["A"]*var["B"]
var
```

	A	B	C
0	1	5	5
1	2	6	12
2	3	7	21
3	4	8	32

```
var1=pd.DataFrame({"A":[10,20,30,40],"B":[15,16,17,18]})

var1["Python"]= var1["A"] <=20
var1["Python_1"]= var1["B"] >=16

var1
```

	A	B	Python	Python_1
0	10	15	True	False
1	20	16	True	True
2	30	17	False	True
3	40	18	False	True

Delete And Insert Data

```
import pandas as pd

var=pd.DataFrame({"A":[1,2,3,4,5],"B":[6,7,8,9,10]})
var
```

	A	B
0	1	6
1	2	7
2	3	8
3	4	9
4	5	10

```
var.insert(1,"Anas",var["A"])
var
```

	A	Anas	B
0	1	1	6
1	2	2	7
2	3	3	8
3	4	4	9
4	5	5	10

```
var.insert(1,"Anas2",[11,12,12,14,15])
var
```

	A	Anas2	Anas	B
0	1	11	1	6
1	2	12	2	7
2	3	12	3	8
3	4	14	4	9
4	5	15	5	10

var=pd.DataFrame({"A":[1,2,3,4,5],"B":[6,7,8,9,10]})

var

```
var["Python_12"]= var["A"][:3]
var
```

	A	B	Python_12
0	1	6	1.0
1	2	7	2.0
2	3	8	3.0
3	4	9	NaN
4	5	10	NaN

```
Delete

var=pd.DataFrame({"A":[1,2,3,4,5],"B":[6,7,8,9,10],"C":[11,12,13,14,15]})
var
```

	A	B	C
0	1	6	11
1	2	7	12
2	3	8	13
3	4	9	14
4	5	10	15

```
var.pop("B")
var
```

	A	C
0	1	11
1	2	12
2	3	13
3	4	14
4	5	15

```
del var["A"]
var
```

	C
0	11
1	12
2	13
3	14
4	15

CSV Files

```
  Cell In[33], line 1
    CSV Files
        ^
SyntaxError: invalid syntax
```

```
import pandas as pd

dis={"a":[1,2,3,4,5,6],"s":[1,2,3,4,5,6],"d":[1,2,3,4,5,6]}
d=pd.DataFrame(dis)
print(d)

d.to_csv("Test_new.csv",index=False,header=[1,2,3])
```

```
   a  s  d
0  1  1  1
1  2  2  2
2  3  3  3
3  4  4  4
4  5  5  5
5  6  6  6
```

Read CSV

```
ali=pd.read_csv("aug_train.csv")
ali
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
ali=pd.read_csv("aug_train.csv",nrows=3)
ali
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enrolled_u
0	8949	city_103	0.920	Male	Has relevent experience	no_
1	29725	city_40	0.776	Male	No relevent experience	no_
2	11561	city_21	0.624	NaN	No relevent experience	Full t

```
ali=pd.read_csv("aug_train.csv",usecols=["enrollee_id","gender"])
ali
```

	enrollee_id	gender
0	8949	Male
1	29725	Male
2	11561	NaN
3	33241	NaN
4	666	Male
...	...	...
19153	7386	Male
19154	31398	Male
19155	24576	Male
19156	5756	Male
19157	23834	NaN

19158 rows × 2 columns

```
ali=pd.read_csv("aug_train.csv",usecols=[0,2])
ali
```

	enrollee_id	city_development_index
0	8949	0.920
1	29725	0.776
2	11561	0.624
3	33241	0.789
4	666	0.767
...	...	...
19153	7386	0.878
19154	31398	0.920
19155	24576	0.920
19156	5756	0.802
19157	23834	0.855

19158 rows × 2 columns

```
ali2=pd.read_csv("aug_train.csv",skiprows=[1,4])
ali2
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	29725	city_40	0.776	Male	No relevent experience	
1	11561	city_21	0.624	NaN	No relevent experience	
2	666	city_162	0.767	Male	Has relevent experience	
3	21651	city_176	0.764	NaN	Has relevent experience	
4	28806	city_160	0.920	Male	Has relevent experience	
...	...	...	...	...	...	
19151	7386	city_173	0.878	Male	No relevent experience	
19152	31398	city_103	0.920	Male	Has relevent experience	
19153	24576	city_103	0.920	Male	Has relevent experience	
19154	5756	city_65	0.802	Male	Has relevent experience	
19155	23834	city_67	0.855	NaN	No relevent experience	

19156 rows × 14 columns

```
ali4 = pd.read_csv("aug_train.csv", index_col=["enrollee_id"])
ali4
```

enrollee_id	city	city_development_index	gender	relevent_experience	enrolled_univ
8949	city_103	0.920	Male	Has relevent experience	no_enr
29725	city_40	0.776	Male	No relevent experience	no_enr
11561	city_21	0.624	NaN	No relevent experience	Full time
33241	city_115	0.789	NaN	No relevent experience	
666	city_162	0.767	Male	Has relevent experience	no_enr
...	...	...	...	...	
7386	city_173	0.878	Male	No relevent experience	no_enr
31398	city_103	0.920	Male	Has relevent experience	no_enr
24576	city_103	0.920	Male	Has relevent experience	no_enr
5756	city_65	0.802	Male	Has relevent experience	no_enr
23834	city_67	0.855	NaN	No relevent experience	no_enr

19158 rows × 13 columns

```
ali5 = pd.read_csv("aug_train.csv", header = 2)
ali5
```

	29725	city_40	0.7759999999999999	Male	No relevent experience	no_enrollment	Graduate	STEM	15	50-99	Pvt Ltd	>4	47	0.0
0	11561	city_21	0.624	NaN	No relevent experience	Full time course	Graduate	STEM	5	NaN	NaN	never	83	0.0
1	33241	city_115	0.789	NaN	No relevent experience	NaN	Graduate	Business Degree	<1	NaN	Pvt Ltd	never	52	1.0
2	666	city_162	0.767	Male	Has relevent experience	no_enrollment	Masters	STEM	>20	50-99	Funded Startup	4	8	0.0
3	21651	city_176	0.764	NaN	Has relevent experience	Part time course	Graduate	STEM	11	NaN	NaN	1	24	1.0
4	28806	city_160	0.920	Male	Has relevent experience	no_enrollment	High School	NaN	5	50-99	Funded Startup	1	24	0.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19151	7386	city_173	0.878	Male	No relevent experience	no_enrollment	Graduate	Humanities	14	NaN	NaN	1	42	1.0
19152	31398	city_103	0.920	Male	Has relevent experience	no_enrollment	Graduate	STEM	14	NaN	NaN	4	52	1.0

```
import pandas as pd
ali4 = pd.read_csv("aug_train.csv",names=["col1","col2","col3","col4","col5","col6","col7"])
ali4
```

enrollee_id	city	city_development_index	gender	relevent_experience	enrolled_university
8949	city_103	0.92	Male	Has relevent experience	no_enrollment
29725	city_40	0.7759999999999999	Male	No relevent experience	no_enrollment
11561	city_21	0.624	NaN	No relevent experience	Full time course
33241	city_115	0.789	NaN	No relevent experience	NaN
...	...	...	...	...	...
7386	city_173	0.878	Male	No relevent experience	no_enrollment
31398	city_103	0.92	Male	Has relevent experience	no_enrollment

```
import pandas as pd
ali4 = pd.read_csv("aug_train.csv",header=None)
ali4
```

	0	1	2	3	4	
0	enrollee_id	city	city_development_index	gender	relevent_experience	enrolled_univers
1	8949	city_103	0.92	Male	Has relevent experience	no_enrollme
2	29725	city_40	0.7759999999999999	Male	No relevent experience	no_enrollme
3	11561	city_21	0.624	NaN	No relevent experience	Full time cour
4	33241	city_115	0.789	NaN	No relevent experience	Na
...	...	...	...	...	...	
19154	7386	city_173	0.878	Male	No relevent experience	no_enrollme
19155	31398	city_103	0.92	Male	Has relevent experience	no_enrollme

```
import pandas as pd
ali4 = pd.read_csv("aug_train.csv", header=None, prefix="col")
ali4
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[44], line 2
      1 import pandas as pd
----> 2 ali4 = pd.read_csv("aug_train.csv", header=None, prefix="col")
      3 ali4

TypeError: read_csv() got an unexpected keyword argument 'prefix'
```

```
ali5 = pd.read_csv("aug_train.csv",dtype={"enrollee_id":"float"})
ali5
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949.0	city_103	0.920	Male	Has relevent experience	
1	29725.0	city_40	0.776	Male	No relevent experience	
2	11561.0	city_21	0.624	NaN	No relevent experience	
3	33241.0	city_115	0.789	NaN	No relevent experience	
4	666.0	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386.0	city_173	0.878	Male	No relevent experience	
19154	31398.0	city_103	0.920	Male	Has relevent experience	
19155	24576.0	city_103	0.920	Male	Has relevent experience	
19156	5756.0	city_65	0.802	Male	Has relevent experience	
19157	23834.0	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

CSV File Function Using Pandas

Pandas Function

```
ans = pd.read_csv("aug_train.csv")
ans
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
ans.index
```

```
RangeIndex(start=0, stop=19158, step=1)
```

```
ans.columns
```

```
Index(['enrollee_id', 'city', 'city_development_index', 'gender',
       'relevent_experience', 'enrolled_university', 'education_level',
       'major_discipline', 'experience', 'company_size', 'company_type',
       'last_new_job', 'training_hours', 'target'],
      dtype='object')
```

```
ans.describe()
```

	enrollee_id	city_development_index	training_hours	target
count	19158.000000	19158.000000	19158.000000	19158.000000
mean	16875.358179	0.828848	65.366896	0.249348
std	9616.292592	0.123362	60.058462	0.432647
min	1.000000	0.448000	1.000000	0.000000
25%	8554.250000	0.740000	23.000000	0.000000
50%	16982.500000	0.903000	47.000000	0.000000
75%	25169.750000	0.920000	88.000000	0.000000
max	33380.000000	0.949000	336.000000	1.000000

```
ans.head(2)
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enrolled_u
0	8949	city_103	0.920	Male	Has relevent experience	no_
1	29725	city_40	0.776	Male	No relevent experience	no_

```
ans.tail()
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

```
ans[:2]
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enrolled_u
0	8949	city_103	0.920	Male	Has relevent experience	no_
1	29725	city_40	0.776	Male	No relevent experience	no_

```
ans[50:70]
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enrolled_
50	5568	city_101	0.558	Male	No relevent experience	no
51	2195	city_64	0.666	Male	Has relevent experience	no
52	30533	city_105	0.794	Male	No relevent experience	no
53	28512	city_104	0.924	NaN	Has relevent experience	no
54	1023	city_114	0.926	Male	No relevent experience	Ful
55	12253	city_104	0.924	Male	Has relevent experience	no
56	25296	city_73	0.754	Male	Has relevent experience	Ful
57	13238	city_103	0.920	Male	Has relevent experience	no
58	13478	city_21	0.624	NaN	Has relevent experience	Ful
59	18578	city_162	0.767	Male	Has relevent experience	no
60	29975	city_67	0.855	Male	Has relevent experience	Par
61	26516	city_75	0.939	Male	Has relevent experience	no
62	24690	city_41	0.827	NaN	Has relevent experience	
63	8433	city_100	0.887	Male	Has relevent experience	no
64	9572	city_11	0.550	NaN	No relevent experience	Ful
65	5878	city_93	0.865	Male	Has relevent experience	no
66	25695	city_67	0.855	Other	No relevent experience	no
67	9645	city_16	0.910	Male	Has relevent experience	no
68	12730	city_16	0.910	Female	Has relevent experience	no
69	4830	city_90	0.698	NaN	No relevent experience	

```
print(type(ans))
```

```
<class 'pandas.core.frame.DataFrame'>
```

```
ans.index.array
```

```
<NumpyExtensionArray>
[    0,     1,     2,     3,     4,     5,     6,     7,     8,     9,
 ...
 19148, 19149, 19150, 19151, 19152, 19153, 19154, 19155, 19156, 19157]
Length: 19158, dtype: int64
```

```
ans.to_numpy()
```

```
array([[8949, 'city_103', 0.92, ..., '1', 36, 1.0],
       [29725, 'city_40', 0.7759999999999999, ..., '>4', 47, 0.0],
       [11561, 'city_21', 0.624, ..., 'never', 83, 0.0],
       ...,
       [24576, 'city_103', 0.92, ..., '4', 44, 0.0],
       [5756, 'city_65', 0.802, ..., '2', 97, 0.0],
       [23834, 'city_67', 0.855, ..., '1', 127, 0.0]], dtype=object)
```

```
import numpy as np
v=np.asarray(ans)
v
```

```
array([[8949, 'city_103', 0.92, ..., '1', 36, 1.0],
       [29725, 'city_40', 0.7759999999999999, ..., '>4', 47, 0.0],
       [11561, 'city_21', 0.624, ..., 'never', 83, 0.0],
       ...,
       [24576, 'city_103', 0.92, ..., '4', 44, 0.0],
       [5756, 'city_65', 0.802, ..., '2', 97, 0.0],
       [23834, 'city_67', 0.855, ..., '1', 127, 0.0]], dtype=object)
```

```
ans.sort_index(axis=0,ascending=False)
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
19157	23834	city_67	0.855	NaN	No relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19153	7386	city_173	0.878	Male	No relevent experience	
...	...	...	...	...	...	
4	666	city_162	0.767	Male	Has relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
0	8949	city_103	0.920	Male	Has relevent experience	

19158 rows × 14 columns

```
ans.sort_index(axis=0,ascending=True)
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
how to change
```

```
import pandas as pd
ans = pd.read_csv("aug_train.csv")
ans
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
ans["enrollee_id"][0]="python"
ans
```

```
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\3796628855.py:1: Setting
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_
  ans["enrollee_id"][0]="python"
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\3796628855.py:1: FutureW
  ans["enrollee_id"][0]="python"
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	python	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
ans.loc[0,"enrollee_id"]="python"
ans
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	python	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
ans.loc[[2, 3], ["enrollee_id", "city"]]
```

	enrollee_id	city
2	11561	city_21
3	33241	city_115

```
ans.loc[[2, 3],:]
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enrolled_u
2	11561	city_21	0.624	NaN	No relevent experience	Full t
3	33241	city_115	0.789	NaN	No relevent experience	

```
babar = pd.read_csv("aug_train.csv")
babar
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
babar.iloc[0,2]
```

```
0.92
```

```
babar.drop("gender",axis=1)#gender wali row ko remove kar diya
```

	enrollee_id	city	city_development_index	relevent_experience	enrolled_unive
0	8949	city_103	0.920	Has relevent experience	no_enro
1	29725	city_40	0.776	No relevent experience	no_enro
2	11561	city_21	0.624	No relevent experience	Full time
3	33241	city_115	0.789	No relevent experience	
4	666	city_162	0.767	Has relevent experience	no_enro
...	...	...	...	...	
19153	7386	city_173	0.878	No relevent experience	no_enro
19154	31398	city_103	0.920	Has relevent experience	no_enro
19155	24576	city_103	0.920	Has relevent experience	no_enro
19156	5756	city_65	0.802	Has relevent experience	no_enro
19157	23834	city_67	0.855	No relevent experience	no_enro

19158 rows × 13 columns

```
babar.drop(0,axis=0) #line ko remove kar deta
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
5	21651	city_176	0.764	NaN	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19157 rows × 14 columns

Handling Missing Data (DroopNA & FillNA)

```
a = pd.read_csv("aug_train.csv")
a
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
ans.dropna()#row ko remove kar daien ga
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
1	29725	city_40	0.776	Male	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
7	402	city_46	0.762	Male	Has relevent experience	
8	27107	city_103	0.920	Male	Has relevent experience	
11	23853	city_103	0.920	Male	Has relevent experience	
...	...	...	...	...	...	
19147	21319	city_21	0.624	Male	No relevent experience	
19149	251	city_103	0.920	Male	Has relevent experience	
19150	32313	city_160	0.920	Female	Has relevent experience	
19152	29754	city_103	0.920	Female	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	

8955 rows × 14 columns

```
a = pd.read_csv("aug_train.csv")
a
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
a.dropna(axis=1)#axis 1 column ka liye hota axis 0 row ka liye
```

	enrollee_id	city	city_development_index	relevent_experience	training_hours
0	8949	city_103	0.920	Has relevent experience	36
1	29725	city_40	0.776	No relevent experience	47
2	11561	city_21	0.624	No relevent experience	83
3	33241	city_115	0.789	No relevent experience	52
4	666	city_162	0.767	Has relevent experience	8
...	...	...	...	...	..
19153	7386	city_173	0.878	No relevent experience	42
19154	31398	city_103	0.920	Has relevent experience	52
19155	24576	city_103	0.920	Has relevent experience	44

```
b = pd.read_csv("aug_train.csv")
b.dropna(how="any")
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
1	29725	city_40	0.776	Male	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
7	402	city_46	0.762	Male	Has relevent experience	
8	27107	city_103	0.920	Male	Has relevent experience	
11	23853	city_103	0.920	Male	Has relevent experience	
...	...	...	...	...	...	
19147	21319	city_21	0.624	Male	No relevent experience	
19149	251	city_103	0.920	Male	Has relevent experience	
19150	32313	city_160	0.920	Female	Has relevent experience	
19152	29754	city_103	0.920	Female	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	

8955 rows × 14 columns

```
c = pd.read_csv("aug_train.csv")
c.dropna(subset=["major_discipline"])
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19150	32313	city_160	0.920	Female	Has relevent experience	
19152	29754	city_103	0.920	Female	Has relevent experience	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	

16345 rows × 14 columns

```
d = pd.read_csv("aug_train.csv")
d.dropna(inplace=True)
d
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
1	29725	city_40	0.776	Male	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
7	402	city_46	0.762	Male	Has relevent experience	
8	27107	city_103	0.920	Male	Has relevent experience	
11	23853	city_103	0.920	Male	Has relevent experience	
...	...	...	...	...	...	
19147	21319	city_21	0.624	Male	No relevent experience	
19149	251	city_103	0.920	Male	Has relevent experience	
19150	32313	city_160	0.920	Female	Has relevent experience	
19152	29754	city_103	0.920	Female	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	

8955 rows × 14 columns

```
d = pd.read_csv("aug_train.csv")
d.dropna(thresh=1)#single value ko remove
d
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

fillna

```
e = pd.read_csv("aug_train.csv")
e.fillna("Anas")
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	Anas	No relevent experience	
3	33241	city_115	0.789	Anas	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	Anas	No relevent experience	

19158 rows × 14 columns

```
#1 particular column ka undar data ko fill karna
f = pd.read_csv("aug_train.csv")
f.fillna({"gender":"Mix","city":"Fsd"})
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	Mix	No relevent experience	
3	33241	city_115	0.789	Mix	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	Mix	No relevent experience	

19158 rows × 14 columns

```
#null value previous,backward data sa tabdeel ho gayaien
#previous
g = pd.read_csv("aug_train.csv")
g.fillna(method="ffill")
```

```
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\4216034615.py:4: FutureW
  g.fillna(method="ffill")
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	Male	No relevent experience	
3	33241	city_115	0.789	Male	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	Male	No relevent experience	

19158 rows × 14 columns

```
#backward
h = pd.read_csv("aug_train.csv")
h.fillna(method="bfill")
```

```
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\3766475451.py:3: FutureW
  h.fillna(method="bfill")
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	Male	No relevent experience	
3	33241	city_115	0.789	Male	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
i = pd.read_csv("aug_train.csv")
i.fillna(method="ffill",axis=1)
```

```
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\3503937874.py:2: FutureW
  i.fillna(method="ffill",axis=1)
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.92	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	0.624	No relevent experience	
3	33241	city_115	0.789	0.789	No relevent experience	No rele
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.92	Male	Has relevent experience	
19155	24576	city_103	0.92	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	0.855	No relevent experience	

19158 rows × 14 columns

```
j = pd.read_csv("aug_train.csv")
j.fillna(3,inplace=True)
j
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	3	No relevent experience	
3	33241	city_115	0.789	3	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	3	No relevent experience	

19158 rows × 14 columns

```
var = pd.read_csv("aug_train.csv")
var.fillna("python",limit=1)
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	python	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
Handling Missing Data (Replace And Interpolate)
```

```
  Cell In[84], line 1
    Handling Missing Data (Replace And Interpolate)
                ^
SyntaxError: invalid syntax
```

```
import pandas as pd

a = pd.read_csv("aug_train.csv")
a
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
a.replace(to_replace=1,value=22)
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
a.replace(to_replace="Graduate",value="python")
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
#a.replace([1,2,3,4,5,6,7,8,9,10],22) to ya 22 sa replace kar daien ga

a.replace("[A-Za-z]","python",regex=True)
```

	enrollee_id	city	city_development_index	
0	8949	pythonpythonpythonpythonpython_103	0.920	pythonpythonpytho
1	29725	pythonpythonpythonpythonpython_40	0.776	pythonpythonpytho
2	11561	pythonpythonpythonpythonpython_21	0.624	
3	33241	pythonpythonpythonpythonpython_115	0.789	
4	666	pythonpythonpythonpythonpython_162	0.767	pythonpythonpytho
...	...	...	...	
19153	7386	pythonpythonpythonpythonpython_173	0.878	pythonpythonpytho
19154	31398	pythonpythonpythonpythonpython_103	0.920	pythonpythonpytho
19155	24576	pythonpythonpythonpythonpython_103	0.920	pythonpythonpytho
19156	5756	pythonpythonpythonpythonpython_65	0.802	pythonpythonpytho
19157	23834	pythonpythonpythonpythonpython_67	0.855	

19158 rows × 14 columns

```
b = pd.read_csv("aug_train.csv")
b
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
b.replace({"gender":'[A-Z]'},22, regex=True)
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	22.0	Has relevent experience	
1	29725	city_40	0.776	22.0	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	22.0	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	22.0	No relevent experience	
19154	31398	city_103	0.920	22.0	Has relevent experience	
19155	24576	city_103	0.920	22.0	Has relevent experience	
19156	5756	city_65	0.802	22.0	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
c = pd.read_csv("aug_train.csv")
c.replace(1,method="ffill")
```

```
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_11828\2160281105.py:2: FutureW
  c.replace(1,method="ffill")
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
#Interpolate
z = pd.read_csv("aug_train.csv")
z
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
z.interpolate()
```

```
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_2312\3275640999.py:1: FutureWa
  z.interpolate()
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
z.interpolate(method="linear")
```

```
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_2312\4012516461.py:1: FutureWa
  z.interpolate(method="linear")
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	
19153	7386	city_173	0.878	Male	No relevent experience	
19154	31398	city_103	0.920	Male	Has relevent experience	
19155	24576	city_103	0.920	Male	Has relevent experience	
19156	5756	city_65	0.802	Male	Has relevent experience	
19157	23834	city_67	0.855	NaN	No relevent experience	

19158 rows × 14 columns

```
z.interpolate(method="linear",axis=0)#axis 0 row by row fill karti axis1 column by column
```

```
C:\Users\Hassan Laptop Point\AppData\Local\Temp\ipykernel_2312\2304046948.py:1: FutureWa
  z.interpolate(method="linear",axis=0)#axis 0 row by row fill karti axis1 column by col
```

	enrollee_id	city	city_development_index	gender	relevent_experience	enroll
0	8949	city_103	0.920	Male	Has relevent experience	
1	29725	city_40	0.776	Male	No relevent experience	
2	11561	city_21	0.624	NaN	No relevent experience	
3	33241	city_115	0.789	NaN	No relevent experience	
4	666	city_162	0.767	Male	Has relevent experience	
...	...	...	...	...	...	