

t4bj2hngj

November 18, 2025

```
[ ]: pip install pandas
```

```
[ ]: import pandas as pd
```

```
[ ]: df=pd.read_csv(r'C:\Users\HP\Downloads\sales_performance_dataset.csv')
df
```

```
[ ]:      Employee_ID Employee_Name Department Experience_Years Monthly_Sales \
0           1001         Ravi    Finance           15           41834
1           1002        Sneha  Marketing           13           38047
2           1003         Amit         IT            1           46105
3           1004        Priya  Marketing            9           95766
4           1005         Karan  Marketing            7           35707
..          ...          ...          ...          ...          ...
95          1096        Megha    Finance           12           93656
96          1097        Pritam    Finance           12           59384
97          1098        Ramesh  Marketing            4           67254
98          1099        Shivani    Sales           14           41918
99          1100         Niraj  Marketing           14          105981
```

```
      Customer_Satisfaction
0                10
1                 3
2                 7
3                10
4                 9
..          ...
95                6
96                7
97                2
98               10
99                2
```

```
[100 rows x 6 columns]
```

```
[ ]: df.head()
```

```
[ ]: Employee_ID Employee_Name Department Experience_Years Monthly_Sales \
0      1001      Ravi      Finance      15      41834
1      1002      Sneha      Marketing      13      38047
2      1003      Amit      IT      1      46105
3      1004      Priya      Marketing      9      95766
4      1005      Karan      Marketing      7      35707
```

```
Customer_Satisfaction
0      10
1      3
2      7
3      10
4      9
```

```
[ ]: df.tail()
```

```
[ ]: Employee_ID Employee_Name Department Experience_Years Monthly_Sales \
95      1096      Megha      Finance      12      93656
96      1097      Pritam      Finance      12      59384
97      1098      Ramesh      Marketing      4      67254
98      1099      Shivani      Sales      14      41918
99      1100      Niraj      Marketing      14      105981
```

```
Customer_Satisfaction
95      6
96      7
97      2
98      10
99      2
```

```
[ ]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 100 entries, 0 to 99
Data columns (total 6 columns):
#   Column                Non-Null Count  Dtype
---  -
0   Employee_ID           100 non-null   int64
1   Employee_Name         100 non-null   object
2   Department            100 non-null   object
3   Experience_Years       100 non-null   int64
4   Monthly_Sales         100 non-null   int64
5   Customer_Satisfaction 100 non-null   int64
dtypes: int64(4), object(2)
memory usage: 4.8+ KB
```

```
[ ]: df.describe()
```

```
[ ]:      Employee_ID  Experience_Years  Monthly_Sales  Customer_Satisfaction
count    100.000000      100.000000    100.000000      100.000000
mean     1050.500000      8.450000    72030.750000      4.840000
std       29.011492      4.349329    30111.719996      2.80591
min      1001.000000      1.000000    20854.000000      1.000000
25%      1025.750000      5.000000    44832.000000      3.000000
50%      1050.500000      8.500000    72697.500000      4.500000
75%      1075.250000     12.000000   101270.000000      7.000000
max      1100.000000     15.000000   118506.000000     10.000000
```

```
[ ]: df.shape
```

```
[ ]: (100, 6)
```

```
[ ]: df.columns
```

```
[ ]: Index(['Employee_ID', 'Employee_Name', 'Department', 'Experience_Years',
           'Monthly_Sales', 'Customer_Satisfaction'],
          dtype='object')
```

```
[ ]: df.dtypes
```

```
[ ]: Employee_ID      int64
Employee_Name      object
Department         object
Experience_Years    int64
Monthly_Sales      int64
Customer_Satisfaction  int64
dtype: object
```

```
[ ]: df_drop=df.drop(columns=['Experience_Years'])
df_drop
```

```
[ ]:      Employee_ID  Employee_Name  Department  Monthly_Sales  Customer_Satisfaction
0         1001         Ravi      Finance      41834              10
1         1002         Sneha    Marketing      38047              3
2         1003          Amit         IT      46105              7
3         1004         Priya    Marketing      95766             10
4         1005          Karan    Marketing      35707              9
..         ...         ...         ...         ...              ...
95        1096         Megha      Finance      93656              6
96        1097         Pritam      Finance      59384              7
97        1098         Ramesh    Marketing      67254              2
98        1099         Shivani      Sales      41918             10
99        1100          Niraj    Marketing     105981              2
```

```
[100 rows x 5 columns]
```

```
[ ]: df_renamed=df.rename(columns={'Employee_Name':'Employee_FullName'})
df_renamed
```

```
[ ]:      Employee_ID Employee_FullName Department Experience_Years Monthly_Sales \
0          1001          Ravi      Finance          15          41834
1          1002          Sneha  Marketing          13          38047
2          1003          Amit          IT           1          46105
3          1004          Priya  Marketing           9          95766
4          1005          Karan  Marketing           7          35707
..          ...          ...          ...          ...          ...
95         1096          Megha      Finance          12          93656
96         1097          Pritam      Finance          12          59384
97         1098          Ramesh  Marketing           4          67254
98         1099          Shivani      Sales          14          41918
99         1100          Niraj  Marketing          14          105981
```

```
      Customer_Satisfaction
0                10
1                 3
2                 7
3                10
4                 9
..                ...
95                6
96                7
97                 2
98                10
99                 2
```

[100 rows x 6 columns]

```
[ ]: df_sorted=df.sort_values(by='Experience_Years')
df_sorted
```

```
[ ]:      Employee_ID Employee_Name Department Experience_Years Monthly_Sales \
2          1003          Amit          IT           1          46105
7          1008          Arjun          IT           1          43776
14         1015          Anjali          HR           1          29474
18         1019          Suman          HR           1          114856
31         1032          Monika          HR           1          71005
..          ...          ...          ...          ...          ...
46         1047          Shweta          HR          15          110084
58         1059          Sameer      Finance          15          118506
59         1060          Sonia      Finance          15          32688
65         1066          Rehan      Finance          15          109045
76         1077          Prakash          HR          15          69811
```

	Customer_Satisfaction
2	7
7	2
14	3
18	8
31	9
..	...
46	8
58	3
59	6
65	5
76	8

[100 rows x 6 columns]

```
[ ]: df_fillna=df.fillna(0)
df_fillna
```

```
[ ]: Employee_ID Employee_Name Department Experience_Years Monthly_Sales \
0          1001          Ravi    Finance             15          41834
1          1002          Sneha  Marketing             13          38047
2          1003           Amit         IT              1          46105
3          1004          Priya  Marketing             9          95766
4          1005          Karan  Marketing             7          35707
..          ...          ...          ...          ...          ...
95          1096          Megha    Finance             12          93656
96          1097          Pritam    Finance             12          59384
97          1098          Ramesh  Marketing             4          67254
98          1099          Shivani    Sales             14          41918
99          1100          Niraj  Marketing             14          105981
```

	Customer_Satisfaction
0	10
1	3
2	7
3	10
4	9
..	...
95	6
96	7
97	2
98	10
99	2

[100 rows x 6 columns]

```
[ ]: drop_uniques=df.drop_duplicates()
drop_uniques
```

```
[ ]: Employee_ID Employee_Name Department Experience_Years Monthly_Sales \
0          1001          Ravi    Finance             15          41834
1          1002          Sneha  Marketing             13          38047
2          1003           Amit         IT              1          46105
3          1004          Priya  Marketing             9          95766
4          1005          Karan  Marketing             7          35707
..          ...           ...           ...           ...           ...
95         1096          Megha    Finance             12          93656
96         1097          Pritam    Finance             12          59384
97         1098          Ramesh  Marketing             4          67254
98         1099          Shivani    Sales             14          41918
99         1100          Niraj  Marketing             14          105981
```

```
Customer_Satisfaction
0          10
1           3
2           7
3          10
4           9
..          ...
95           6
96           7
97           2
98          10
99           2
```

[100 rows x 6 columns]

```
[ ]: grouped_df=df.groupby('Employee_Name').sum()
grouped_df
```

```
[ ]: Employee_ID Department Experience_Years Monthly_Sales \
Employee_Name
Aarav          1069         HR              4          42671
Aditya         1041        Sales              6          87172
Alok           1064       Support             13          72083
Amit           1003         IT              1          46105
Anaya          1090    Marketing             14          91295
..          ...           ...           ...           ...
Varun          1048    Finance             14          58623
Vikas          1031         IT              2          74384
Vinay          1095    Finance             12          28155
Vivek          1012         IT             15          26776
Yash           1035    Support             14          82003
```

Employee_Name	Customer_Satisfaction
Aarav	3
Aditya	4
Alok	1
Amit	7
Anaya	6
...	...
Varun	8
Vikas	3
Vinay	2
Vivek	7
Yash	2

[100 rows x 5 columns]

```
[ ]: agg_df=df.groupby('Experience_Years').agg({'Customer_Satisfaction':'sum'})
agg_df
```

```
[ ]:
Customer_Satisfaction
Experience_Years
1                37
2                 5
3                46
4                 9
5                24
6                13
7                61
8                33
9                37
10               25
11               28
12               47
13               26
14               40
15               53
```

```
[ ]: df_count=df.groupby('Employee_Name').count()
df_count
```

```
[ ]:
Employee_ID  Department  Experience_Years  Monthly_Sales  \
Employee_Name
Aarav        1          1                1              1
Aditya        1          1                1              1
Alok          1          1                1              1
Amit          1          1                1              1
```

Anaya	1	1	1	1
...
Varun	1	1	1	1
Vikas	1	1	1	1
Vinay	1	1	1	1
Vivek	1	1	1	1
Yash	1	1	1	1

Customer_Satisfaction	
Employee_Name	
Aarav	1
Aditya	1
Alok	1
Amit	1
Anaya	1
...	...
Varun	1
Vikas	1
Vinay	1
Vivek	1
Yash	1

[100 rows x 5 columns]

```
[ ]: df_sum=df.groupby('Experience_Years').sum()
df_sum
```

```
[ ]: Employee_ID \
Experience_Years
1                8239
2                2118
3                9373
4                4318
5                6320
6                3219
7               11529
8                7149
9                6212
10               6309
11               6293
12              10635
13               7461
14               7499
15              8376
```

Experience_Years	Employee_Name \
------------------	-----------------

1	AmitArjunAnjaliSumanMonikaArnavManishSudhir
2	VikasTanvi
3	NitinRakeshDeepaShreyaGeetaPayalJuhiNamitaMohan
4	AaravTusharJayRamesh
5	IshaAnkitDevRituSandeepDeepak
6	AdityaNishaShalini
7	KaranGauravSahilRajeshSheetalIraLakshmiNiharik...
8	NehaRohitMeenaHarshKabirPoonamKomal
9	PriyaDivyaRekhaNidhiBhavanaSujit
10	TanyaManojRohanTejasDiyaHemant
11	PoojaRahulChiragSunnyMitaliKavita
12	SimranTanujPreetiTarunNaveenRaghuOmkarVinayMeg...
13	SnehaAlokLavanyaSnehalHariniVandanaUsha
14	YashVarunKrishnaRajniAnayaShivaniNiraj
15	RaviVivekShwetaRiaSameerSoniaRehanPrakash

	Department \
Experience_Years	
1	ITITHRRHRITFinanceFinance
2	ITSales
3	MarketingSupportSupportITMarketingMarketingSal...
4	HRSupportHRMarketing
5	MarketingSupportSalesSupportHRMarketing
6	SalesSupportHR
7	MarketingFinanceFinanceFinanceFinanceHRMarketi...
8	ITMarketingFinanceFinanceSalesSupportFinance
9	MarketingHRSupportSalesFinanceHR
10	SalesHRHRFinanceMarketingSupport
11	SupportFinanceITHRRHRFinance
12	ITMarketingITFinanceITFinanceSalesFinanceFinan...
13	MarketingSupportSupportMarketingFinanceHRMarke...
14	SupportFinanceHRSupportMarketingSalesMarketing
15	FinanceITHRSalesFinanceFinanceFinanceHR

	Monthly_Sales	Customer_Satisfaction
Experience_Years		
1	528255	37
2	103064	5
3	591332	46
4	315391	9
5	415121	24
6	231946	13
7	741142	61
8	573244	33
9	454871	37
10	518784	25
11	386840	28

12	736547	47
13	502103	26
14	549382	40
15	555053	53

```
[ ]: df_mean=df.groupby('Experience_Years').mean()
df_mean
```

```
[ ]: df_max=df.groupby('Employee_Name').max()
df_max
```

```
[ ]:
Employee_ID Department Experience_Years Monthly_Sales \
Employee_Name
Aarav          1069         HR              4         42671
Aditya         1041        Sales             6         87172
Alok           1064       Support            13         72083
Amit           1003         IT              1         46105
Anaya          1090    Marketing            14         91295
...           ...         ...             ...         ...
Varun          1048     Finance            14         58623
Vikas          1031         IT              2         74384
Vinay          1095     Finance            12         28155
Vivek          1012         IT            15         26776
Yash           1035     Support            14         82003
```

```
Customer_Satisfaction
Employee_Name
Aarav          3
Aditya          4
Alok            1
Amit            7
Anaya           6
...           ...
Varun           8
Vikas           3
Vinay           2
Vivek           7
Yash            2
```

[100 rows x 5 columns]

```
[ ]: df_min=df.groupby('Employee_Name').min()
df_min
```

```
[ ]:
Employee_ID Department Experience_Years Monthly_Sales \
Employee_Name
Aarav          1069         HR              4         42671
```

Aditya	1041	Sales	6	87172
Alok	1064	Support	13	72083
Amit	1003	IT	1	46105
Anaya	1090	Marketing	14	91295
...
Varun	1048	Finance	14	58623
Vikas	1031	IT	2	74384
Vinay	1095	Finance	12	28155
Vivek	1012	IT	15	26776
Yash	1035	Support	14	82003

Customer_Satisfaction	
Employee_Name	
Aarav	3
Aditya	4
Alok	1
Amit	7
Anaya	6
...	...
Varun	8
Vikas	3
Vinay	2
Vivek	7
Yash	2

[100 rows x 5 columns]

```
[ ]: df_clear=df.dropna()
df_clear
```

[]:	Employee_ID	Employee_Name	Department	Experience_Years	Monthly_Sales	\
0	1001	Ravi	Finance	15	41834	
1	1002	Sneha	Marketing	13	38047	
2	1003	Amit	IT	1	46105	
3	1004	Priya	Marketing	9	95766	
4	1005	Karan	Marketing	7	35707	
..	
95	1096	Megha	Finance	12	93656	
96	1097	Pritam	Finance	12	59384	
97	1098	Ramesh	Marketing	4	67254	
98	1099	Shivani	Sales	14	41918	
99	1100	Niraj	Marketing	14	105981	

Customer_Satisfaction	
0	10
1	3
2	7

```

3          10
4          9
..        ...
95         6
96         7
97         2
98        10
99         2

```

[100 rows x 6 columns]

```
[ ]: df_fillna=df.fillna(0)
df_fillna
```

```
[ ]: Employee_ID Employee_Name Department Experience_Years Monthly_Sales \
0          1001          Ravi    Finance             15         41834
1          1002          Sneha  Marketing             13         38047
2          1003           Amit         IT              1         46105
3          1004          Priya  Marketing              9         95766
4          1005          Karan  Marketing              7         35707
..        ...          ...          ...          ...          ...
95         1096          Megha    Finance             12         93656
96         1097          Pritam    Finance             12         59384
97         1098          Ramesh  Marketing              4         67254
98         1099          Shivani    Sales             14         41918
99         1100          Niraj  Marketing             14        105981

```

```

Customer_Satisfaction
0          10
1           3
2           7
3          10
4           9
..        ...
95         6
96         7
97         2
98        10
99         2

```

[100 rows x 6 columns]

```
[ ]: df_replace=df.replace({' ':0})
df_replace
```

```
[ ]: Employee_ID Employee_Name Department Experience_Years Monthly_Sales \
0          1001          Ravi    Finance             15         41834

```

1	1002	Sneha	Marketing	13	38047
2	1003	Amit	IT	1	46105
3	1004	Priya	Marketing	9	95766
4	1005	Karan	Marketing	7	35707
..
95	1096	Megha	Finance	12	93656
96	1097	Pritam	Finance	12	59384
97	1098	Ramesh	Marketing	4	67254
98	1099	Shivani	Sales	14	41918
99	1100	Niraj	Marketing	14	105981

	Customer_Satisfaction
0	10
1	3
2	7
3	10
4	9
..	...
95	6
96	7
97	2
98	10
99	2

[100 rows x 6 columns]

```
[ ]: df_contain=df['Employee_Name'].str.contains('o')
df_contain
```

```
[ ]: df['Name']=df['Employee_Name'].str.strip()
df['Name']
```

```
[ ]: count=df['Employee_Name'].values.counts()
count
```