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Roll No : 20U437

Div : 4

```
import pandas as pd
df=pd.read_csv('Salary Dataset.csv')
df
```

	Company Name	Job Title	Salaries Reported	Location	Salary
0	Mu Sigma	Data Scientist	105.0	Bangalore	₹6,48,573/yr
1	IBM	Data Scientist	95.0	Bangalore	₹11,91,950/yr
2	Tata Consultancy Services	Data Scientist	66.0	Bangalore	₹8,36,874/yr
3	Impact Analytics	Data Scientist	40.0	Bangalore	₹6,69,578/yr
4	Accenture	Data Scientist	32.0	Bangalore	₹9,44,110/yr
...	...	...	...	...	...
4339	TaiyōAI	Machine Learning Scientist	1.0	Mumbai	₹5,180/mo
4340	Decimal Point Analytics	Machine Learning Developer	1.0	Mumbai	₹7,51,286/yr
4341	MyWays	Machine Learning Developer	1.0	Mumbai	₹4,10,952/yr

```
df.head()
```

	Company Name	Job Title	Salaries Reported	Location	Salary
0	Mu Sigma	Data Scientist	105.0	Bangalore	₹6,48,573/yr
1	IBM	Data Scientist	95.0	Bangalore	₹11,91,950/yr
2	Tata Consultancy Services	Data Scientist	66.0	Bangalore	₹8,36,874/yr
3	Impact Analytics	Data Scientist	40.0	Bangalore	₹6,69,578/yr
4	Accenture	Data Scientist	32.0	Bangalore	₹9,44,110/yr

```
df.tail()
```

	Company Name	Job Title	Salaries Reported	Location	Salary
4339	TaiyōAI	Machine Learning Scientist	1.0	Mumbai	₹5,180/mo

4340	Decimal Point Analytics	Machine Learning Developer	1.0	Mumbai	₹7,51,286/yr
4341	MyWays	Machine Learning Developer	1.0	Mumbai	₹4,10,952/yr

```
df.columns
```

```
Index(['Company Name', 'Job Title', 'Salaries Reported', 'Location', 'Salary'], dtyp
```

```
df[['Company Name','Job Title']]
```

	Company Name	Job Title
0	Mu Sigma	Data Scientist
1	IBM	Data Scientist
2	Tata Consultancy Services	Data Scientist
3	Impact Analytics	Data Scientist
4	Accenture	Data Scientist
...	...	...
4339	TaiyōAI	Machine Learning Scientist
4340	Decimal Point Analytics	Machine Learning Developer
4341	MyWays	Machine Learning Developer
4342	Market Pulse Technologies	Software Engineer - Machine Learning
4343	vPhrase	Machine Learning Engineer

4344 rows × 2 columns

```
df.shape
```

```
(4344, 5)
```

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 4344 entries, 0 to 4343
Data columns (total 5 columns):
 #   Column             Non-Null Count  Dtype  
---  ------             --------------  -----  
 0   Company Name       4341 non-null   object 
 1   Job Title          4344 non-null   object 
 2   Salaries Reported  4342 non-null   float64
 3   Location           4344 non-null   object 
 4   Salary             4344 non-null   object 
dtypes: float64(1), object(4)
memory usage: 169.8+ KB
```

```
df.isna()
```

	Company Name	Job Title	Salaries Reported	Location	Salary
0	False	False	False	False	False
1	False	False	False	False	False
2	False	False	False	False	False
3	False	False	False	False	False
4	False	False	False	False	False
...	...	...	...	...	...
4339	False	False	False	False	False
4340	False	False	False	False	False
4341	False	False	False	False	False
4342	False	False	False	False	False
4343	False	False	False	False	False

```
df.isna().sum()
```

```
Company Name         3
Job Title            0
Salaries Reported    2
Location             0
Salary               0
dtype: int64
```

```
df['Company Name'][3]
```

```
'Impact Analytics'
```

```
df['Location'][4]
```

```
'Bangalore'
```

```
df['Location'][0]=None
```

```
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:1: SettingWithCopyWarni
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/u
  """Entry point for launching an IPython kernel.
```

```
df.isna().sum()
```

```
Company Name         3
Job Title            0
Salaries Reported    2
Location             1
```

```
Salary              0
dtype: int64
```

```
df['Location'][0]='Pune'
```

```
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:1: SettingWithCopyWarni
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/u
  """Entry point for launching an IPython kernel.
```

```
df.isna().sum()
```

```
Company Name         3
Job Title            0
Salaries Reported    2
Location             0
Salary               0
dtype: int64
```

```
df=df.rename(columns={'Company Name':'Company_Name','Salaries Reported':'Salaries_Reported
```

```
df
```

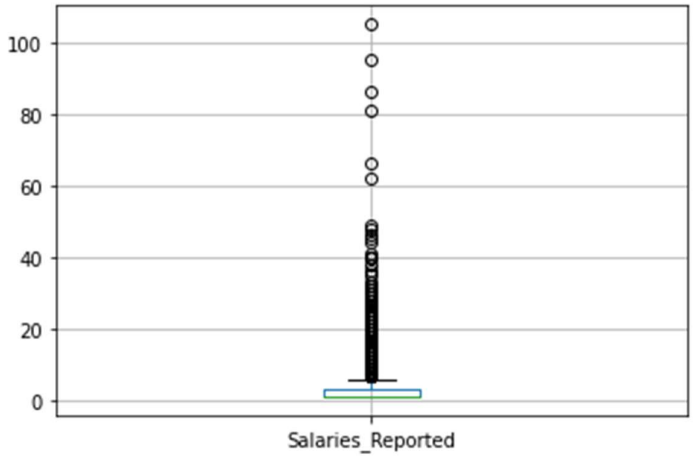
	Company_Name	Job Title	Salaries_Reported	Location	Salary
0	Mu Sigma	Data Scientist	105.0	Pune	₹6,48,573/yr
1	IBM	Data Scientist	95.0	Bangalore	₹11,91,950/yr
2	Tata Consultancy Services	Data Scientist	66.0	Bangalore	₹8,36,874/yr
3	Impact Analytics	Data Scientist	40.0	Bangalore	₹6,69,578/yr
4	Accenture	Data Scientist	32.0	Bangalore	₹9,44,110/yr
...	...	...	...	...	...
4339	TaiyōAI	Machine Learning Scientist	1.0	Mumbai	₹5,180/mo
4340	Decimal Point Analytics	Machine Learning Developer	1.0	Mumbai	₹7,51,286/yr
4341	MyWays	Machine Learning Developer	1.0	Mumbai	₹4,10,952/yr
4342	Market Pulse Technologies	Software Engineer - Machine Learning	1.0	Mumbai	₹16,12,324/yr

```
df.columns
```

```
Index(['Company_Name', 'Job Title', 'Salaries_Reported', 'Location', 'Salary'], dtyp
```

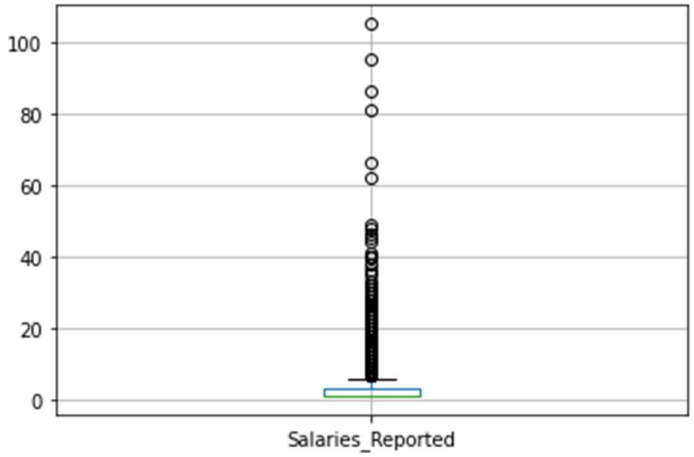
```
df.boxplot(column=['Salaries_Reported'],grid=True)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fdc248eb710>
```

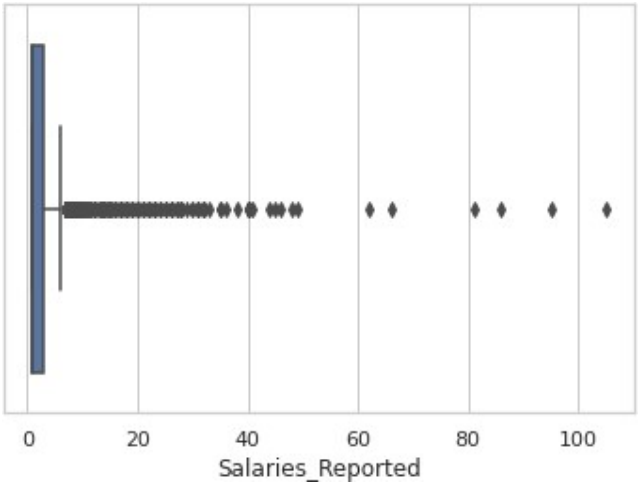



```
df.boxplot()
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fdc2443e950>
```




```
import seaborn as sns
sns.set_theme(style="whitegrid")
ax =sns.boxplot(x=df['Salaries_Reported'])
```



```
df['Salaries_Reported'].mean()
```

```
2.7759097190234914
```

```
print("Highest allowed",df['Salaries_Reported'].mean()+3*df['Salaries_Reported'].std())
print("Lowest allowed",df['Salaries_Reported'].mean()-3*df['Salaries_Reported'].std())
```

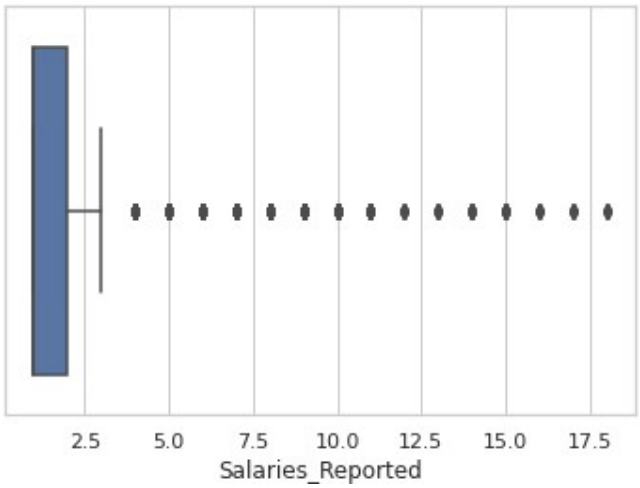
```
Highest allowed 18.215492136673088
Lowest allowed -12.663672698626105
```

```
df[(df['Salaries_Reported']>18)]
```

	Company_Name	Job Title	Salaries_Reported	Location	Salary
0	Mu Sigma	Data Scientist	105.0	Pune	₹6,48,573/yr
1	IBM	Data Scientist	95.0	Bangalore	₹11,91,950/yr
2	Tata Consultancy Services	Data Scientist	66.0	Bangalore	₹8,36,874/yr
3	Impact Analytics	Data Scientist	40.0	Bangalore	₹6,69,578/yr
4	Accenture	Data Scientist	32.0	Bangalore	₹9,44,110/yr
...	...	...	...	...	...
3622	LTI	Data Engineer	33.0	Mumbai	₹5,00,000/yr
3623	Tata Consultancy Services	Data Engineer	19.0	Mumbai	₹5,00,000/yr
3748	Quantiphi	Machine Learning Engineer	28.0	Bangalore	₹8,75,066/yr
4115	Amazon	Machine Learning Data Associate	38.0	Hyderabad	₹2,75,841/yr

```
df=df[(df['Salaries_Reported']<=18)]
```

```
import seaborn as sns
sns.set_theme(style="whitegrid")
ax =sns.boxplot(x=df['Salaries_Reported'])
```


2.5
5.0
7.5
10.0
12.5
15.0
17.5
Salaries_Reported