

```
In [1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [2]: df=pd.read_csv("Iris.csv")
```

```
In [3]: df
```

Out[3]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa
...	...	...	...	...	...	...
145	146	6.7	3.0	5.2	2.3	Iris-virginica
146	147	6.3	2.5	5.0	1.9	Iris-virginica
147	148	6.5	3.0	5.2	2.0	Iris-virginica
148	149	6.2	3.4	5.4	2.3	Iris-virginica
149	150	5.9	3.0	5.1	1.8	Iris-virginica

150 rows × 6 columns

```
In [4]: df.head()
```

Out[4]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa

In [5]: `df.tail()`

Out[5]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
<b>145</b>	146	6.7	3.0	5.2	2.3	Iris-virginica
<b>146</b>	147	6.3	2.5	5.0	1.9	Iris-virginica
<b>147</b>	148	6.5	3.0	5.2	2.0	Iris-virginica
<b>148</b>	149	6.2	3.4	5.4	2.3	Iris-virginica
<b>149</b>	150	5.9	3.0	5.1	1.8	Iris-virginica

In [6]: `df.describe()`

Out[6]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
<b>count</b>	150.000000	150.000000	150.000000	150.000000	150.000000
<b>mean</b>	75.500000	5.843333	3.054000	3.758667	1.198667
<b>std</b>	43.445368	0.828066	0.433594	1.764420	0.763161
<b>min</b>	1.000000	4.300000	2.000000	1.000000	0.100000
<b>25%</b>	38.250000	5.100000	2.800000	1.600000	0.300000
<b>50%</b>	75.500000	5.800000	3.000000	4.350000	1.300000
<b>75%</b>	112.750000	6.400000	3.300000	5.100000	1.800000
<b>max</b>	150.000000	7.900000	4.400000	6.900000	2.500000

In [7]: `df.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 6 columns):
#   Column          Non-Null Count  Dtype
---  -
0   Id              150 non-null   int64
1   SepalLengthCm   150 non-null   float64
2   SepalWidthCm    150 non-null   float64
3   PetalLengthCm   150 non-null   float64
4   PetalWidthCm    150 non-null   float64
5   Species         150 non-null   object
dtypes: float64(4), int64(1), object(1)
memory usage: 7.2+ KB
```

```
In [8]: df.isnull()
```

```
Out[8]:
```

	<b>Id</b>	<b>SepalLengthCm</b>	<b>SepalWidthCm</b>	<b>PetalLengthCm</b>	<b>PetalWidthCm</b>	<b>Species</b>
0	False	False	False	False	False	False
1	False	False	False	False	False	False
2	False	False	False	False	False	False
3	False	False	False	False	False	False
4	False	False	False	False	False	False
...	...	...	...	...	...	...
145	False	False	False	False	False	False
146	False	False	False	False	False	False
147	False	False	False	False	False	False
148	False	False	False	False	False	False
149	False	False	False	False	False	False

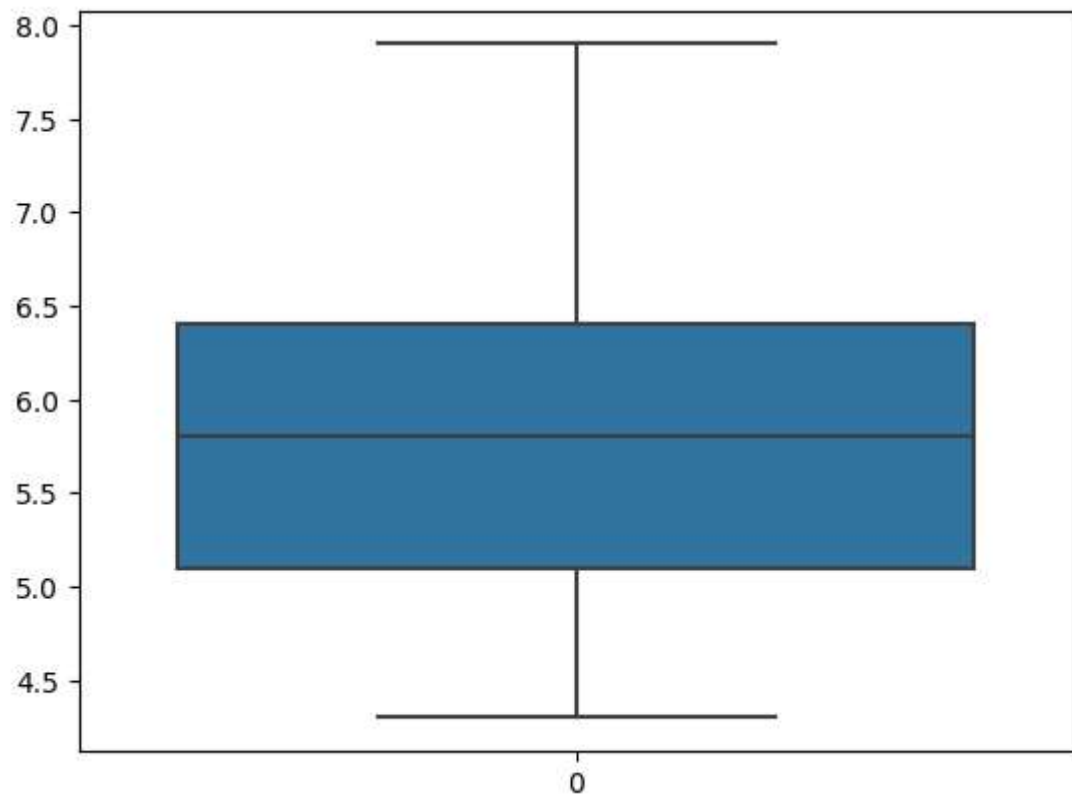
150 rows × 6 columns

```
In [9]: df.isnull().sum()
```

```
Out[9]: Id          0
SepalLengthCm      0
SepalWidthCm       0
PetalLengthCm      0
PetalWidthCm       0
Species            0
dtype: int64
```

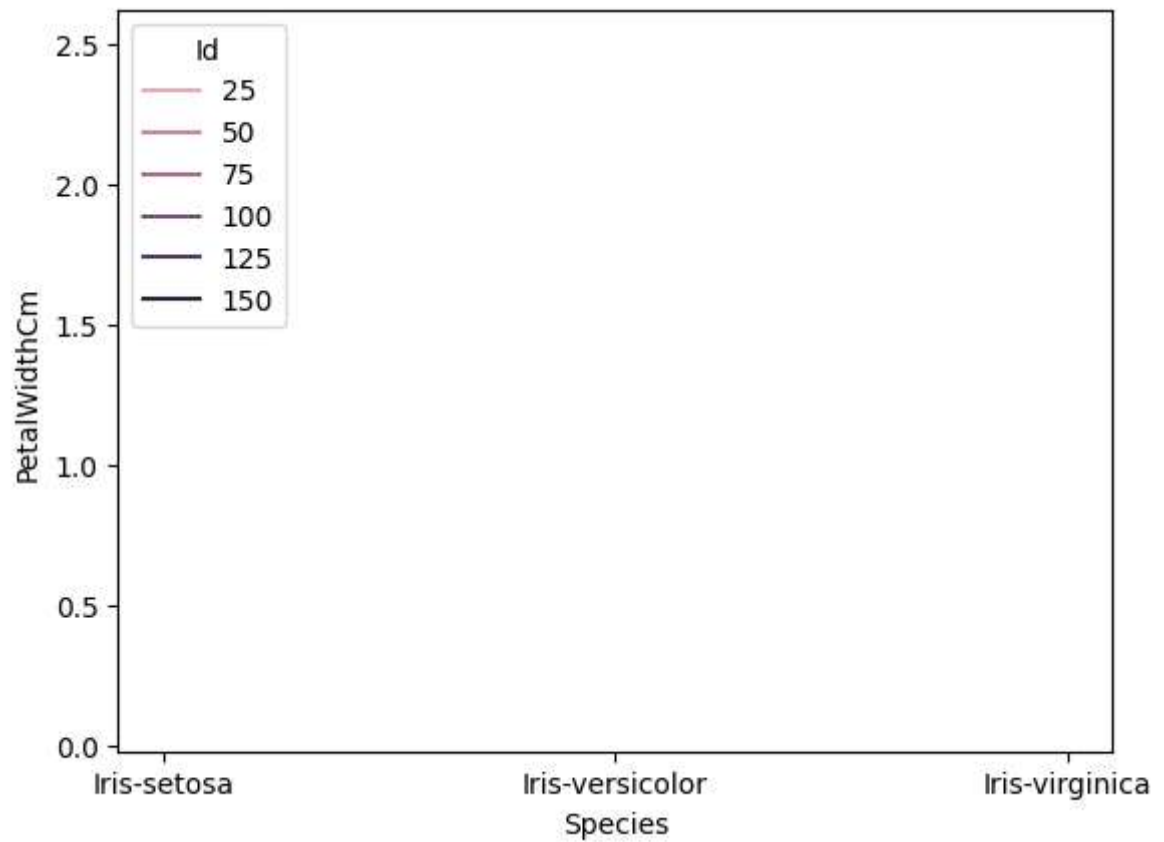
```
In [10]: sns.boxplot(df.SepalLengthCm)
```

```
Out[10]: <AxesSubplot: >
```



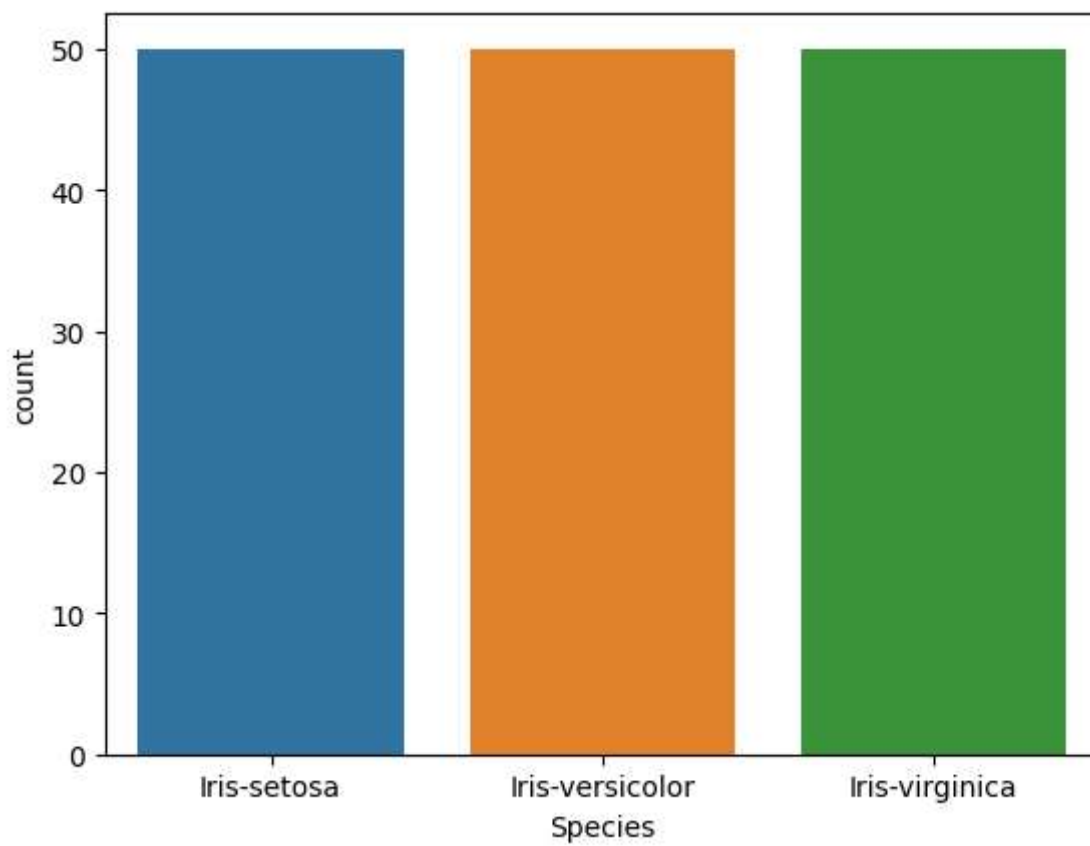
```
In [11]: sns.lineplot(x="Species", y="PetalWidthCm", hue="Id", data=df)
```

```
Out[11]: <AxesSubplot: xlabel='Species', ylabel='PetalWidthCm'>
```



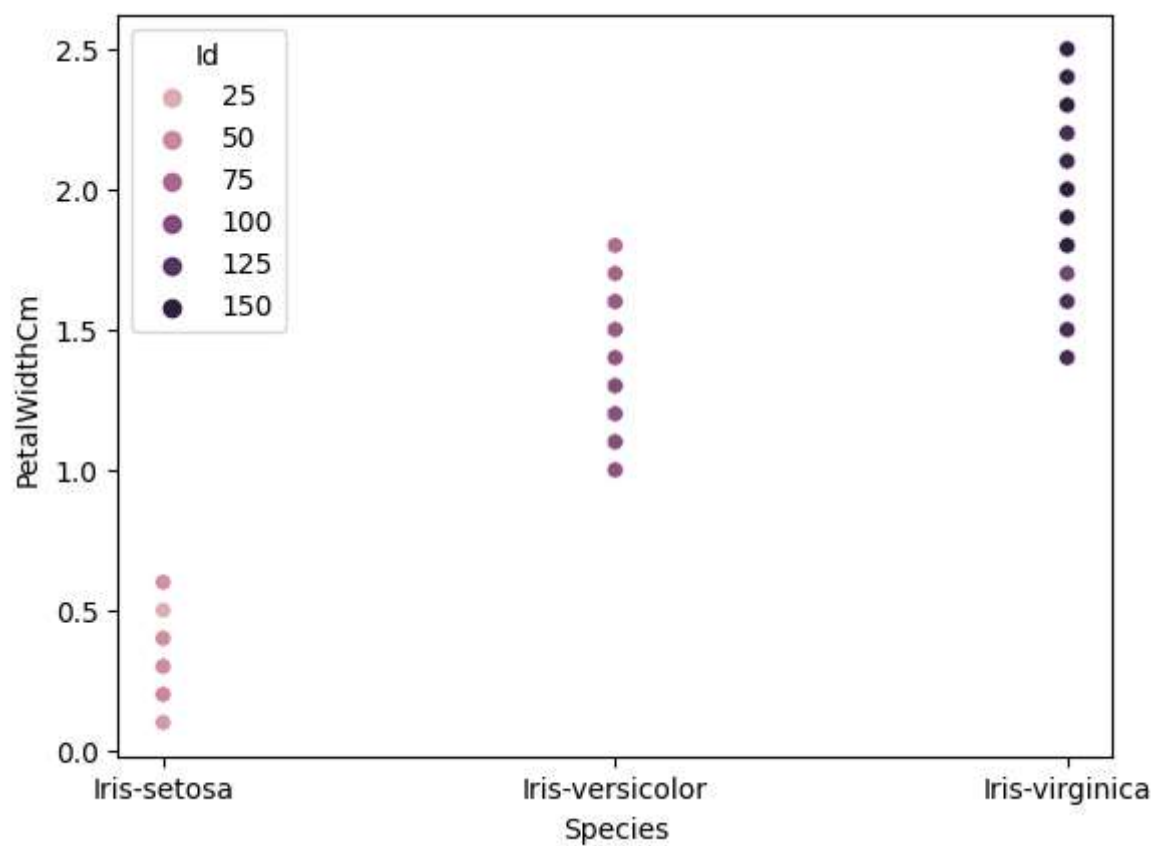
```
In [12]: sns.countplot(x="Species", data=df)
```

```
Out[12]: <AxesSubplot: xlabel='Species', ylabel='count'>
```



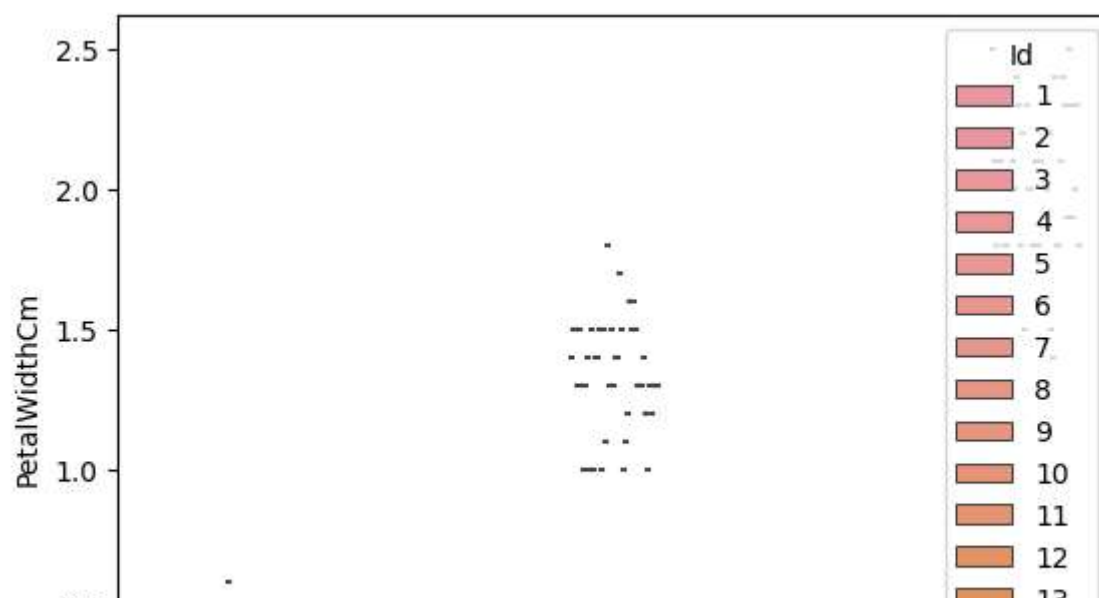
```
In [13]: sns.scatterplot(x="Species", y="PetalWidthCm", hue="Id", data=df)
```

```
Out[13]: <AxesSubplot: xlabel='Species', ylabel='PetalWidthCm'>
```



```
In [14]: sns.violinplot(x="Species", y="PetalWidthCm", hue="Id", data=df)
```

```
Out[14]: <AxesSubplot: xlabel='Species', ylabel='PetalWidthCm'>
```



In [ ]: