Assignment no - 10

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

```
df1  = pd.read_csv('/content/Iris.csv')
df1
```

	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

```
df = pd.DataFrame(df1)
df.head()
```

	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

```
df.describe()
```

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

```
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
```

```
df.columns
```

```
Index(['Id', 'SepalLengthCm', 'SepalWidthCm', 'PetalLengthCm', 'PetalWidthCm',
       'Species'],
      dtype='object')
```

```
df['SepalLengthCm'].max()
```

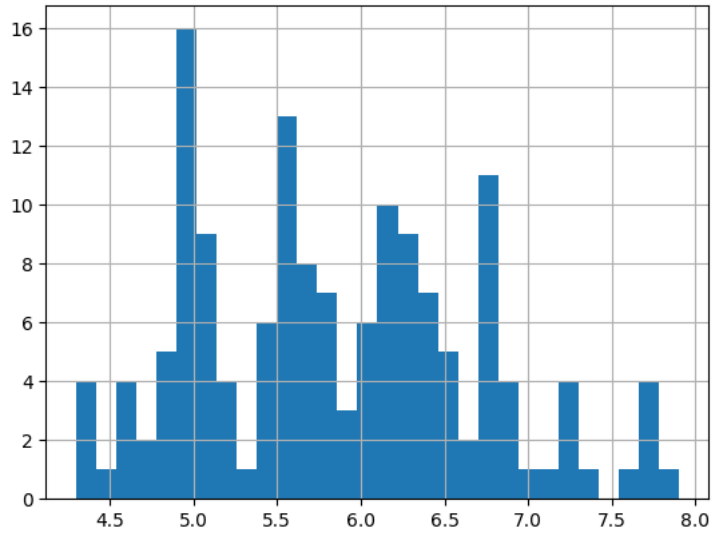
```
7.9
```

```
df['SepalLengthCm'].min()
```

```
4.3
```

```
df['SepalLengthCm'].hist(bins = 30)
```

```
<Axes: >
```




```
df['PetalLengthCm'].max()
```

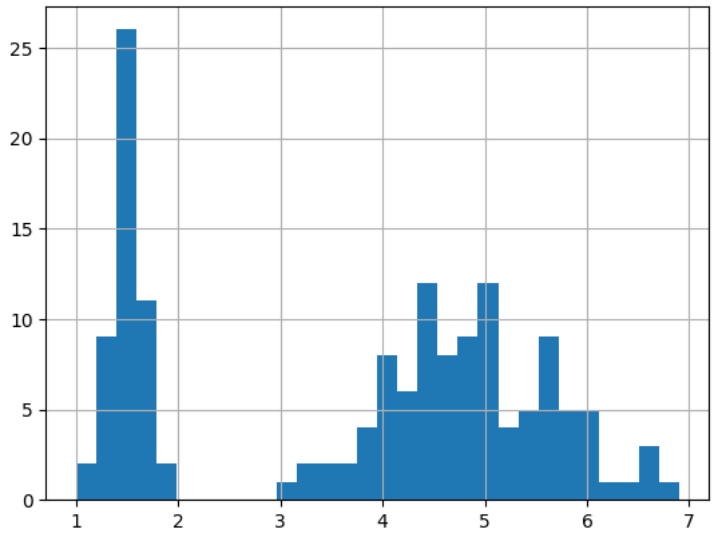
```
6.9
```

```
df['PetalLengthCm'].min()
```

```
1.0
```

```
df['PetalLengthCm'].hist(bins = 30)
```

```
<Axes: >
```



```
df['PetalWidthCm'].max()
```

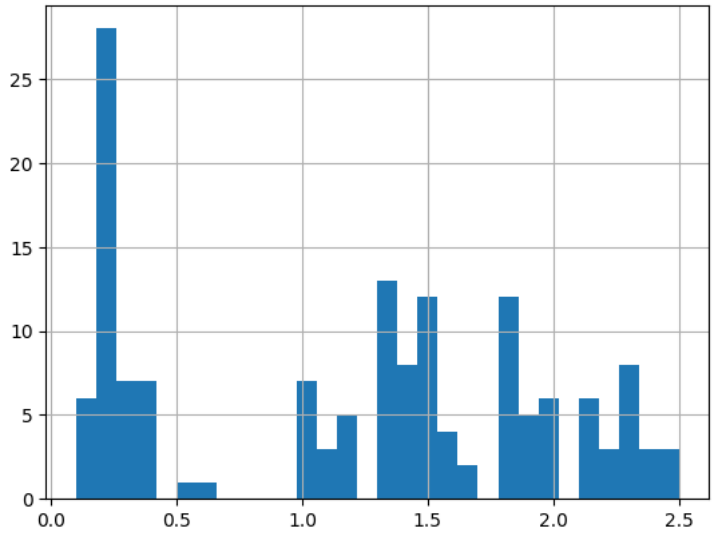
```
2.5
```

```
df['PetalWidthCm'].min()
```

```
0.1
```

```
df['PetalWidthCm'].hist(bins = 30)
```

```
<Axes: >
```




```
df['SepalWidthCm'].max()
```

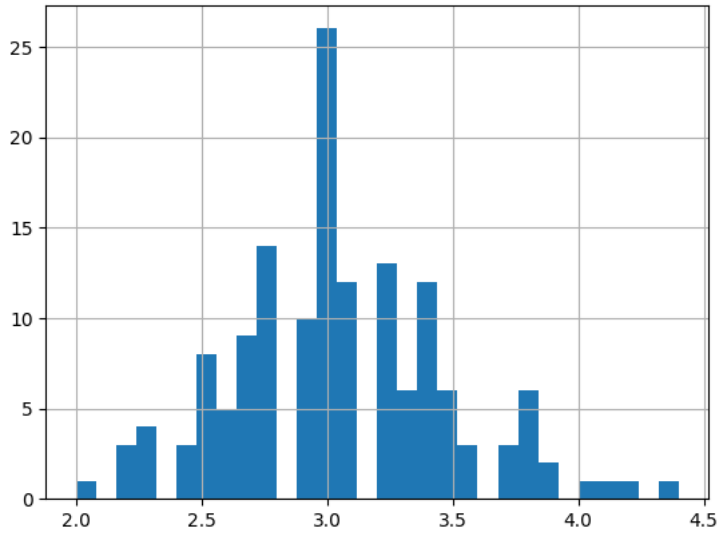
```
4.4
```

```
df['SepalWidthCm'].min()
```

```
2.0
```

```
df['SepalWidthCm'].hist(bins = 30)
```

```
<Axes: >
```

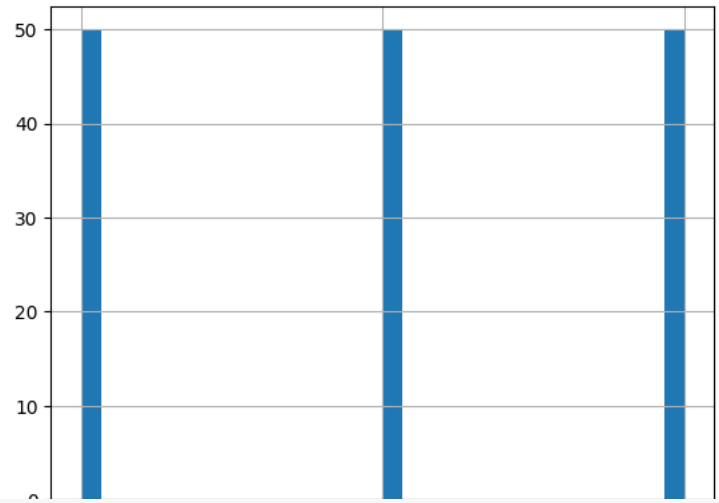



```
df['Species'].value_counts()
```

```
Iris-setosa        50
Iris-versicolor    50
Iris-virginica     50
Name: Species, dtype: int64
```

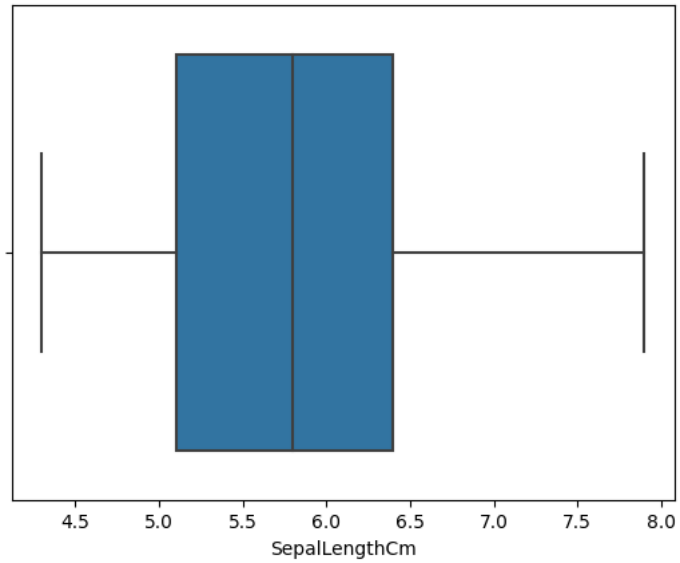
```
df['Species'].hist(bins = 30)
```

```
<Axes: >
```



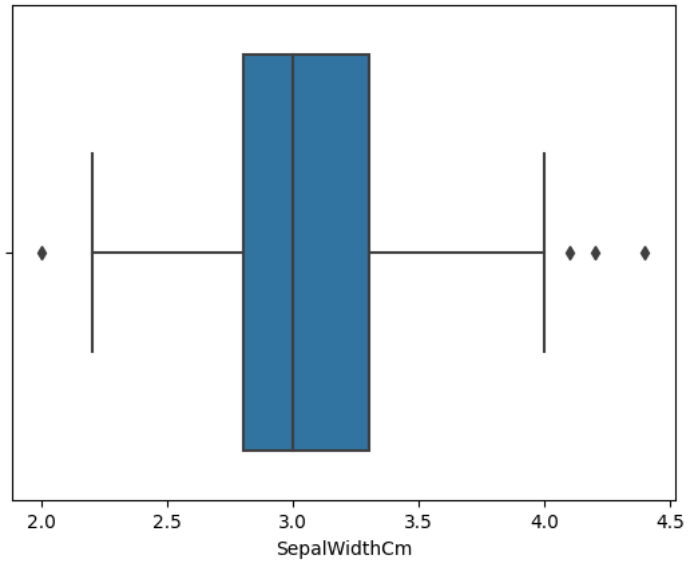

```
sns.boxplot(x = 'SepalLengthCm' ,data = df)
```

```
<Axes: xlabel='SepalLengthCm'>
```



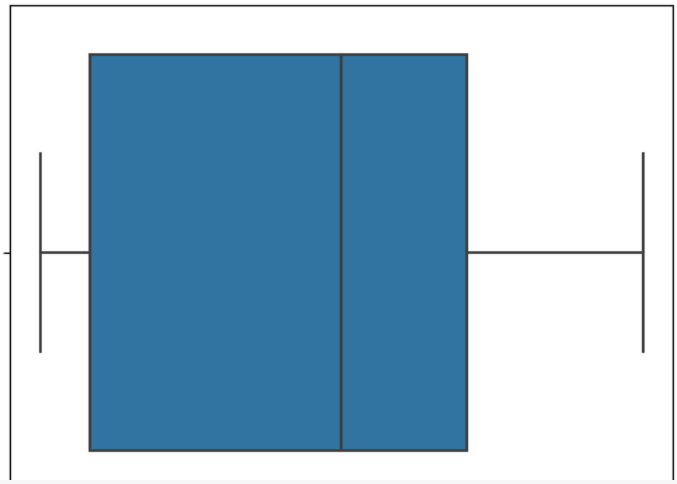

```
sns.boxplot(x = 'SepalWidthCm' ,  data = df)
```

```
<Axes: xlabel='SepalWidthCm'>
```




```
sns.boxplot(x = 'PetalWidthCm' , data = df)
```

```
<Axes: xlabel='PetalWidthCm'>
```



```
sns.boxplot(x = 'PetalLengthCm', data = df)
```

```
<Axes: xlabel='PetalLengthCm'>
```