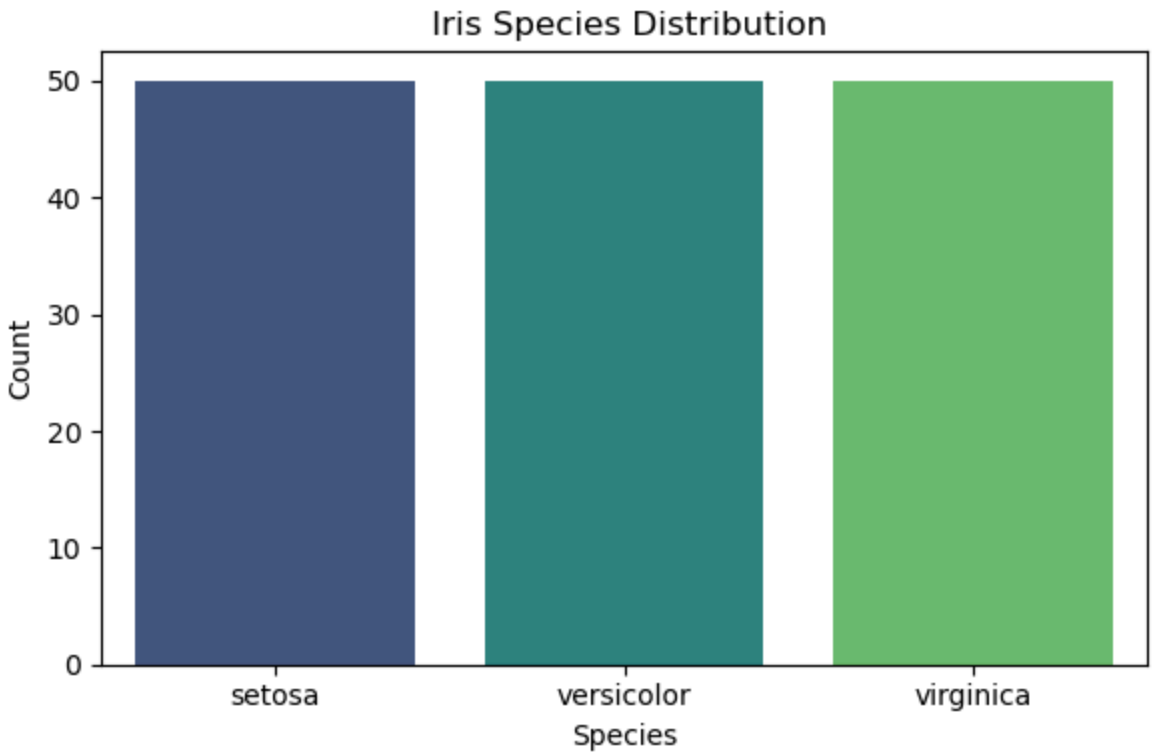
Task 3: Basic Data Visualization (Iris Dataset)

1. Bar Plot – Species Count¶

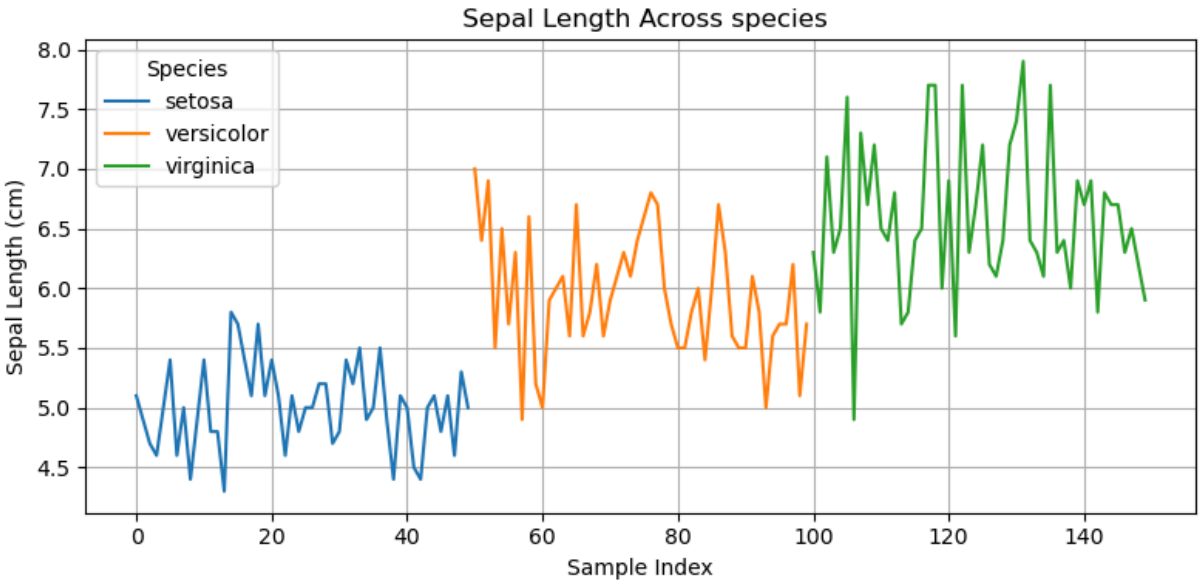
In [1]:
```
import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd
from sklearn.datasets import load_iris

# Load Iris dataset
iris = load_iris(as_frame=True)
df = iris.frame
df['species'] = df['target'].apply(lambda x: iris.target_names[x])

# Bar Plot
plt.figure(figsize=(6, 4))
sns.countplot(x='species', data=df, palette='viridis')
plt.title(' Iris Species Distribution')
plt.xlabel('Species')
plt.ylabel('Count')
plt.tight_layout()
plt.savefig("iris_species_barplot.png")
plt.show()
```

```
C:\Users\PC\AppData\Local\Temp\ipykernel_18692\1093241734.py:13: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.1
4.0. Assign the `x` variable to `hue` and set `legend=False` for the same effect.

  sns.countplot(x='species', data=df, palette='viridis')
```



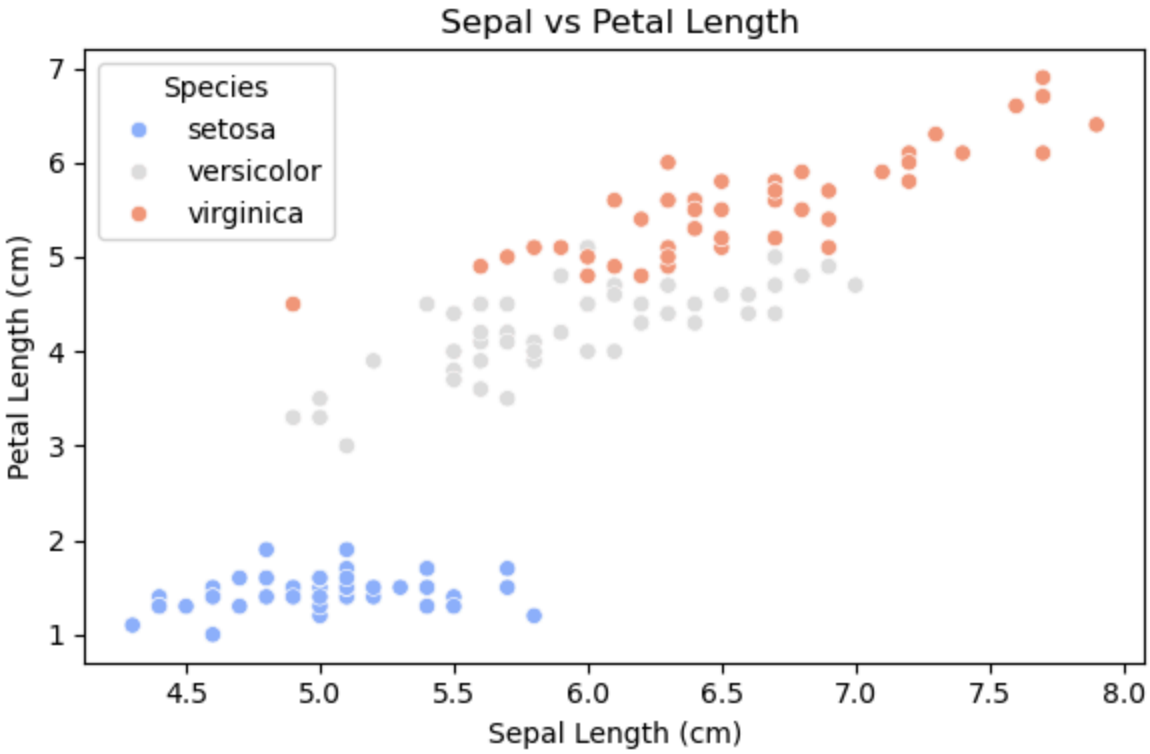
2.Line Chart – Sepal Length Trends by Index

In [2]:
```
plt.figure(figsize=(8, 4))
for species in df['species'].unique():
    subset = df[df['species'] == species]
    plt.plot(subset.index, subset['sepal length (cm)'], label=species)

plt.title(" Sepal Length Across species")
plt.xlabel("Sample Index")
plt.ylabel("Sepal Length (cm)")
plt.legend(title="Species")
plt.grid(True)
plt.tight_layout()
plt.savefig("sepal_length_lineplot.png")
plt.show()
```



3. Scatter Plot – Sepal vs Petal Length (Colored by Species)¶

In [3]:
```
plt.figure(figsize=(6, 4))
sns.scatterplot(data=df, x='sepal length (cm)', y='petal length (cm)', hue='species
plt.title(" Sepal vs Petal Length")
plt.xlabel("Sepal Length (cm)")
plt.ylabel("Petal Length (cm)")
plt.legend(title='Species')
plt.tight_layout()
plt.savefig("sepal_vs_petal_scatterplot.png")
plt.show()
```


Sepal vs Petal Length
Species
setosa
versicolor
virginica
Petal Length (cm)
Sepal Length (cm)
1
2
3
4
5
6
7
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0

In [ ]: