In [2]:
```
import pandas as pd
import numpy as np

import seaborn as sns
import matplotlib.pyplot as plt
%matplotlib inline

import warnings
warnings.filterwarnings("ignore")
```

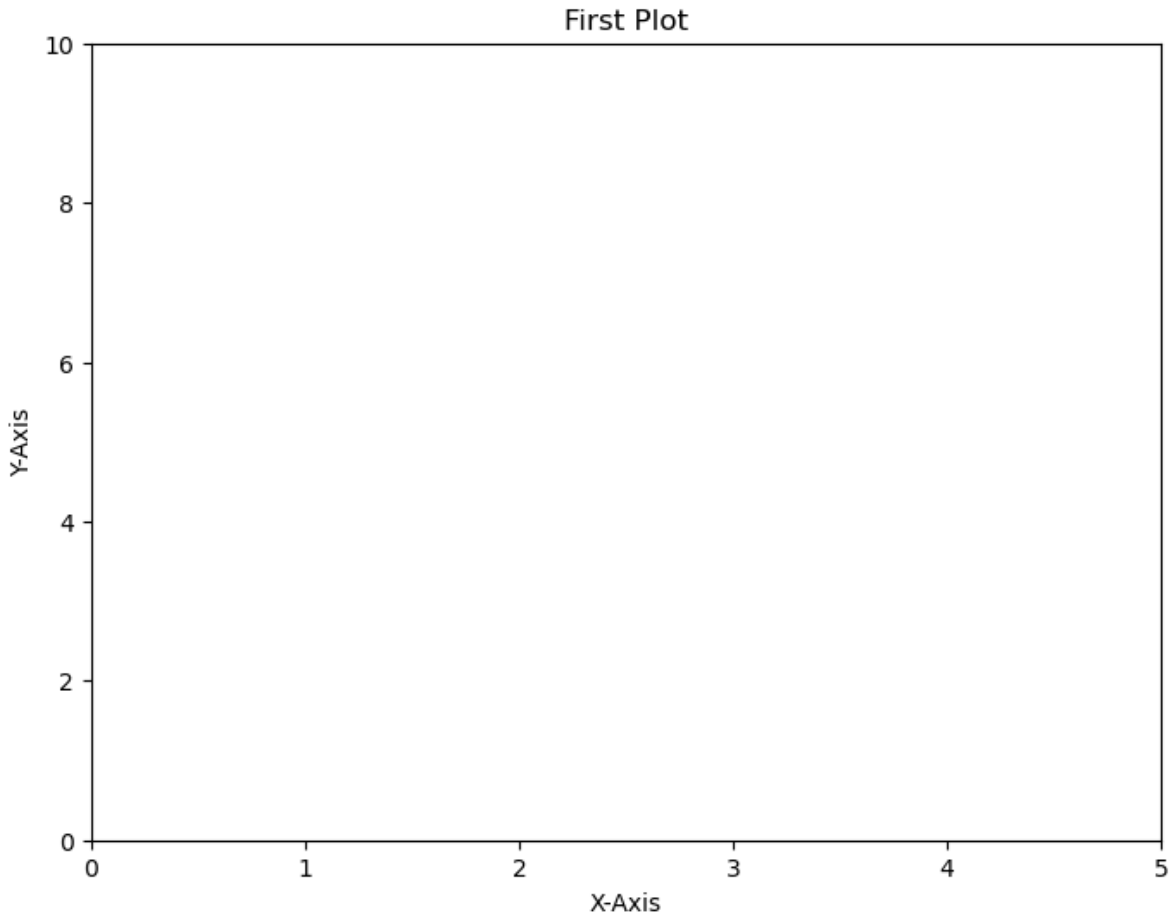
In [35]:
```
features = ["cap-shape","cap-surface","cap-color","bruises","odor","gill-attachmen
            "stalk-shape","stalk-root","stalk-surface-above-ring","stalk-surface-b
            "stalk-color-below-ring","veil-type","veil-color","ring-number","ring-
            "population","habitat","target"]

df = pd.read_csv('agaricus-lepiota.data',names = features )
df
```

Out[35]:

	cap-shape	cap-surface	cap-color	bruises	odor	gill-attachment	gill-spacing	gill-size	gill-color	stalk-shape	...	stalk-color-above-ring
0	p	x	s	n	t	p	f	c	n	k	...	s
1	e	x	s	y	t	a	f	c	b	k	...	s
2	e	b	s	w	t	l	f	c	b	n	...	s
3	p	x	y	w	t	p	f	c	n	n	...	s
4	e	x	s	g	f	n	f	w	b	k	...	s
...	...	...	...	...	...	...	...	...	...	...	...	...
8119	e	k	s	n	f	n	a	c	b	y	...	s
8120	e	x	s	n	f	n	a	c	b	y	...	s
8121	e	f	s	n	f	n	a	c	b	n	...	s
8122	p	k	y	n	f	y	f	c	n	b	...	k
8123	e	x	s	n	f	n	a	c	b	y	...	s

8124 rows × 23 columns

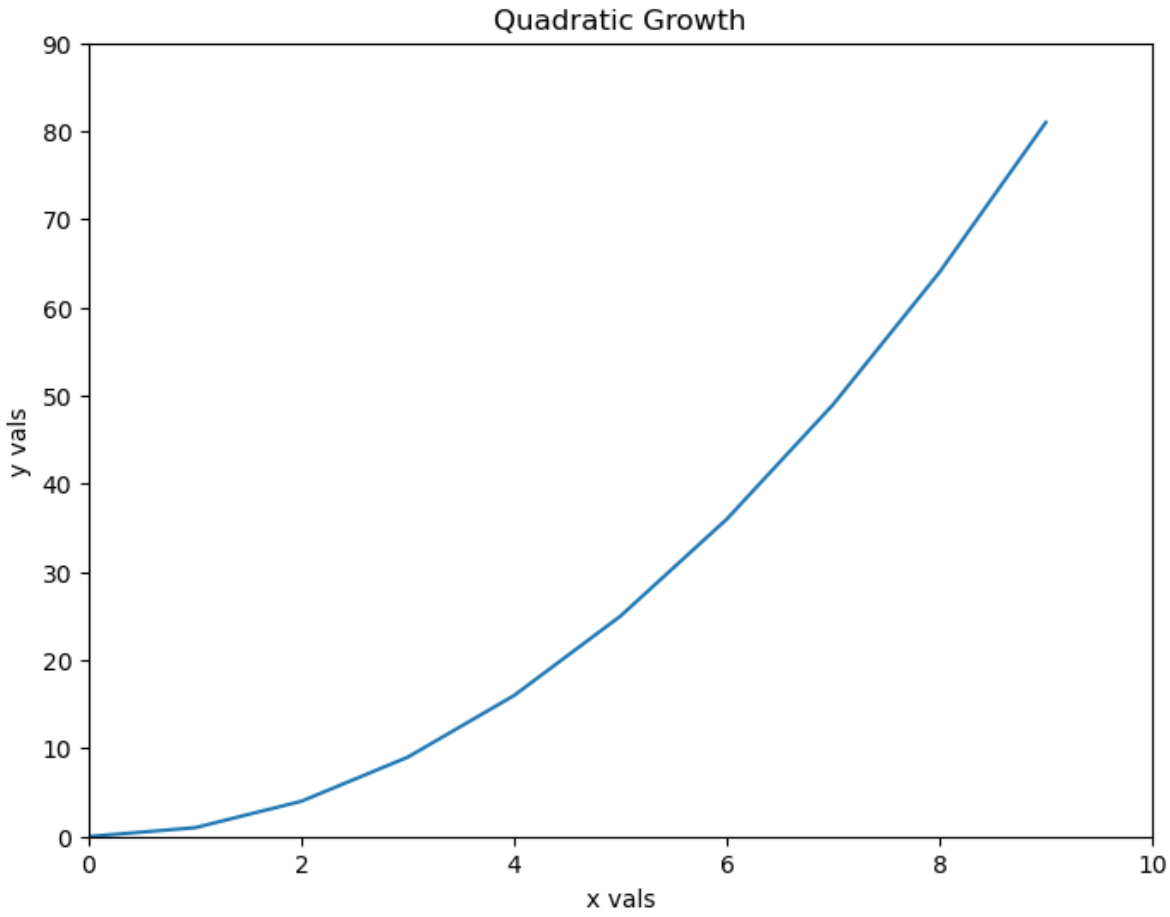
In [4]:
```
fig = plt.figure(figsize=(8,6))
ax = fig.add_subplot(111)
ax.set(title='First Plot', xlabel='X-Axis', ylabel='Y-Axis', xlim=(0, 5), ylim=(0,
plt.show()
```



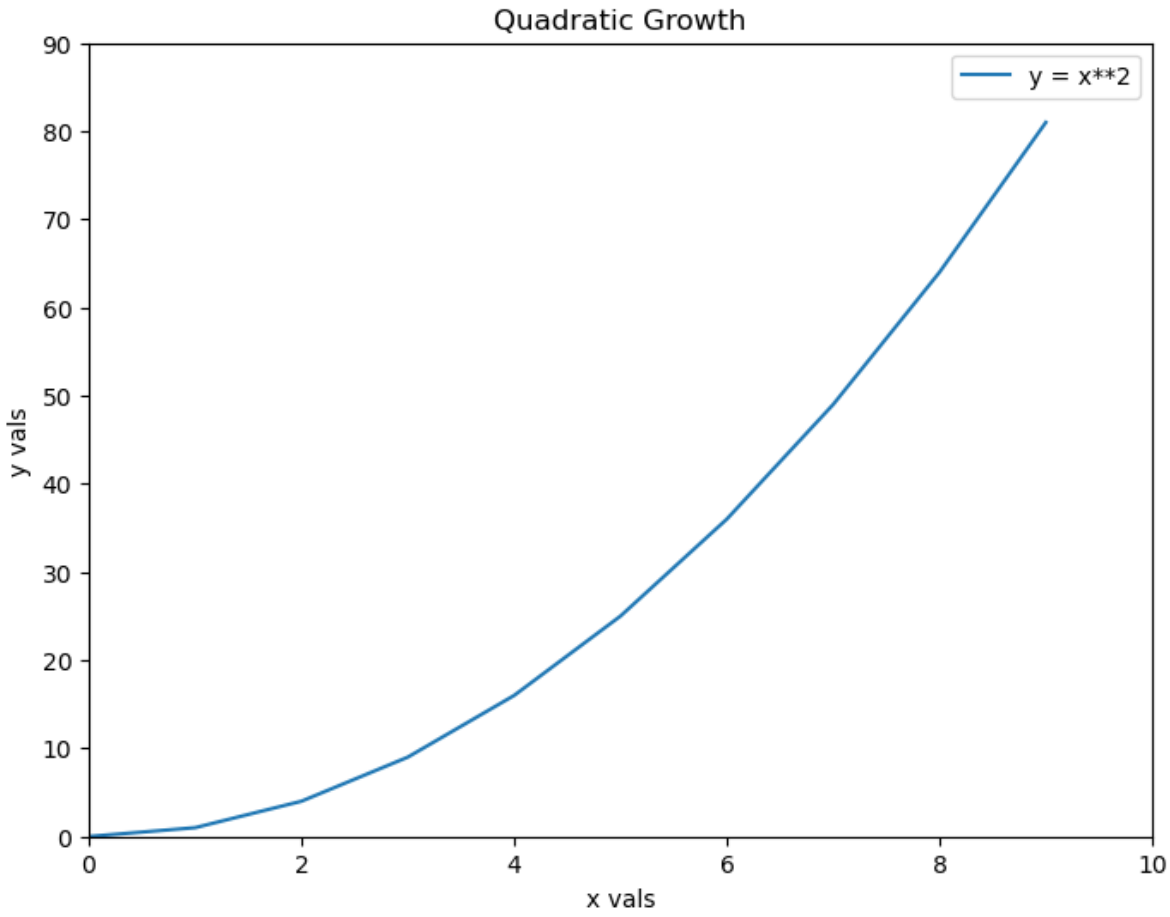
In [5]:
```
x = np.arange(0,10)
print(x)

print('\n')

y = x**2
print(y)
```

```
[0 1 2 3 4 5 6 7 8 9]


[ 0  1  4  9 16 25 36 49 64 81]
```

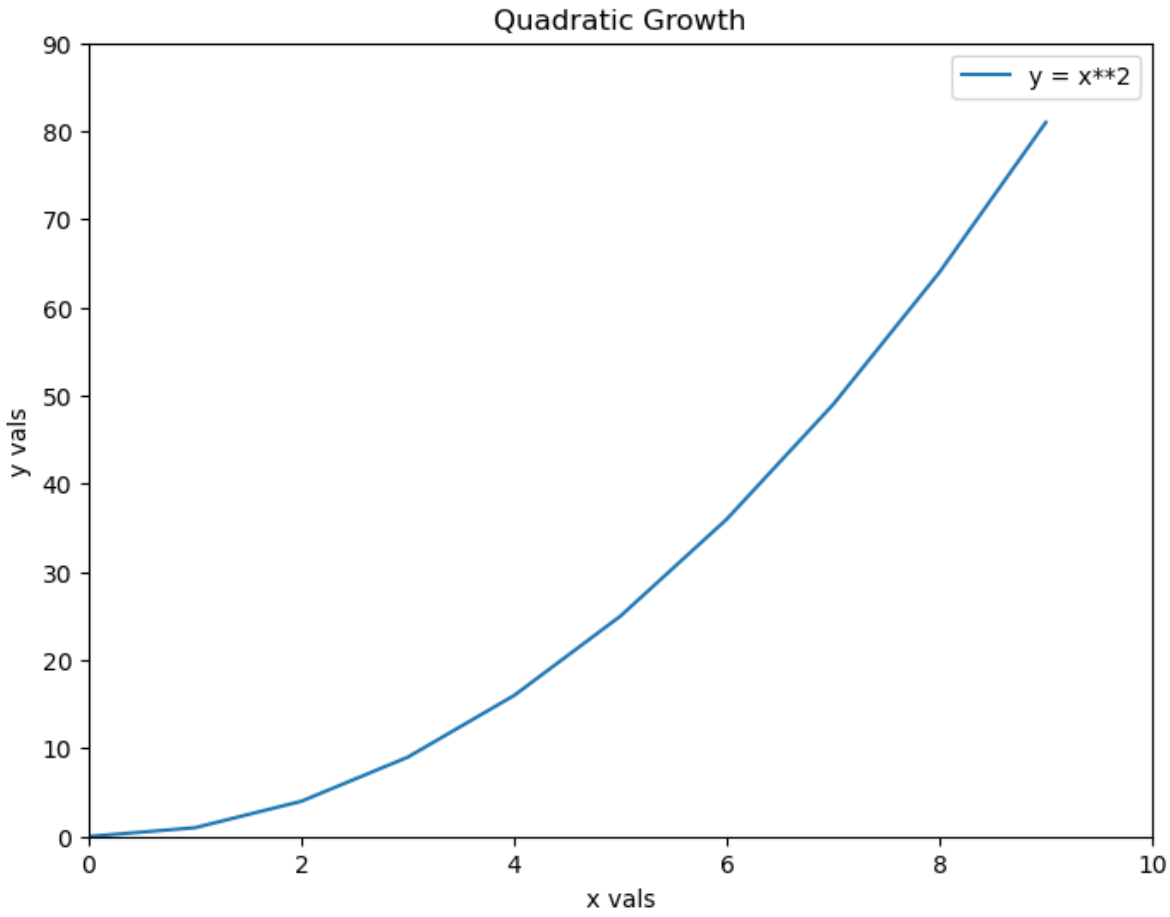
In [6]:
```
fig = plt.figure(figsize=(8,6))
axes = fig.add_subplot(111)
axes.set(title='Quadratic Growth', xlabel='x vals', ylabel='y vals', xlim=(0, 10),
axes.plot(x,y)
plt.show()
```



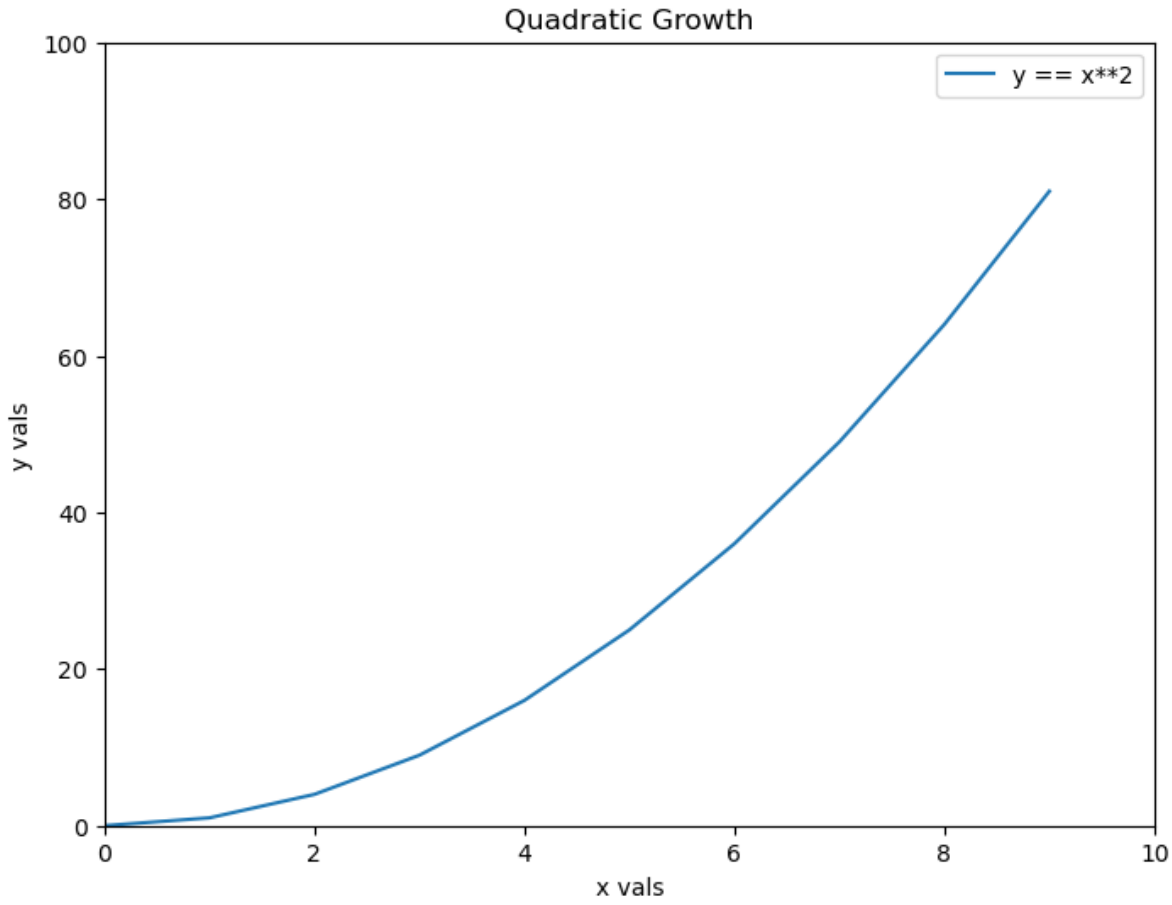
In [7]:
```
fig = plt.figure(figsize=(8,6))
axes = fig.add_subplot(111)
axes.set(title='Quadratic Growth', xlabel='x vals', ylabel='y vals', xlim=(0, 10),
axes.plot(x,y,label = 'y = x**2')
axes.legend()
plt.show()
```



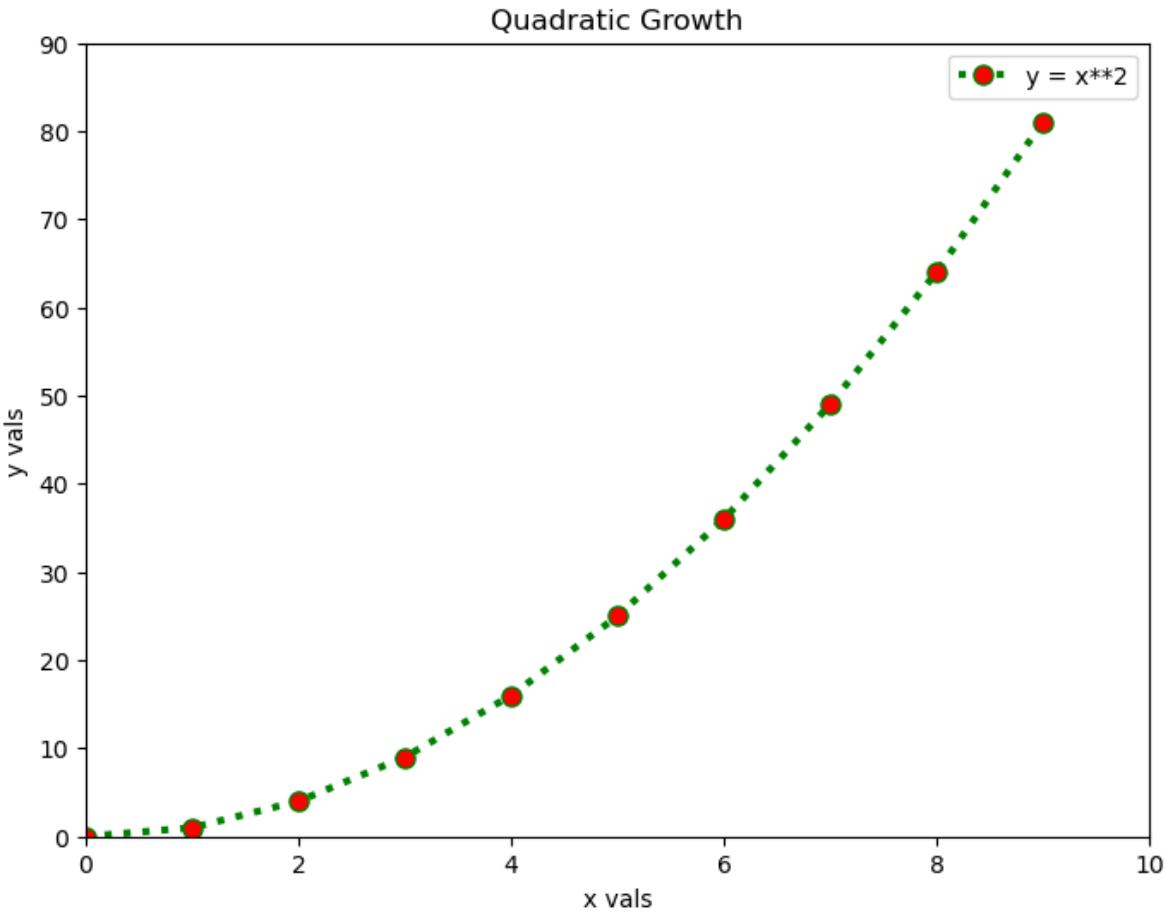
In [8]:
```
fig = plt.figure(figsize=(8,6))
axes = fig.add_subplot(111)
axes.set_title("Quadratic Growth")
axes.set_xlabel("x vals")
axes.set_ylabel('y vals')
axes.set_xlim([0,10])
axes.set_ylim([0,90])
axes.plot(x,y, label='y = x**2')
axes.legend()
plt.show()
```



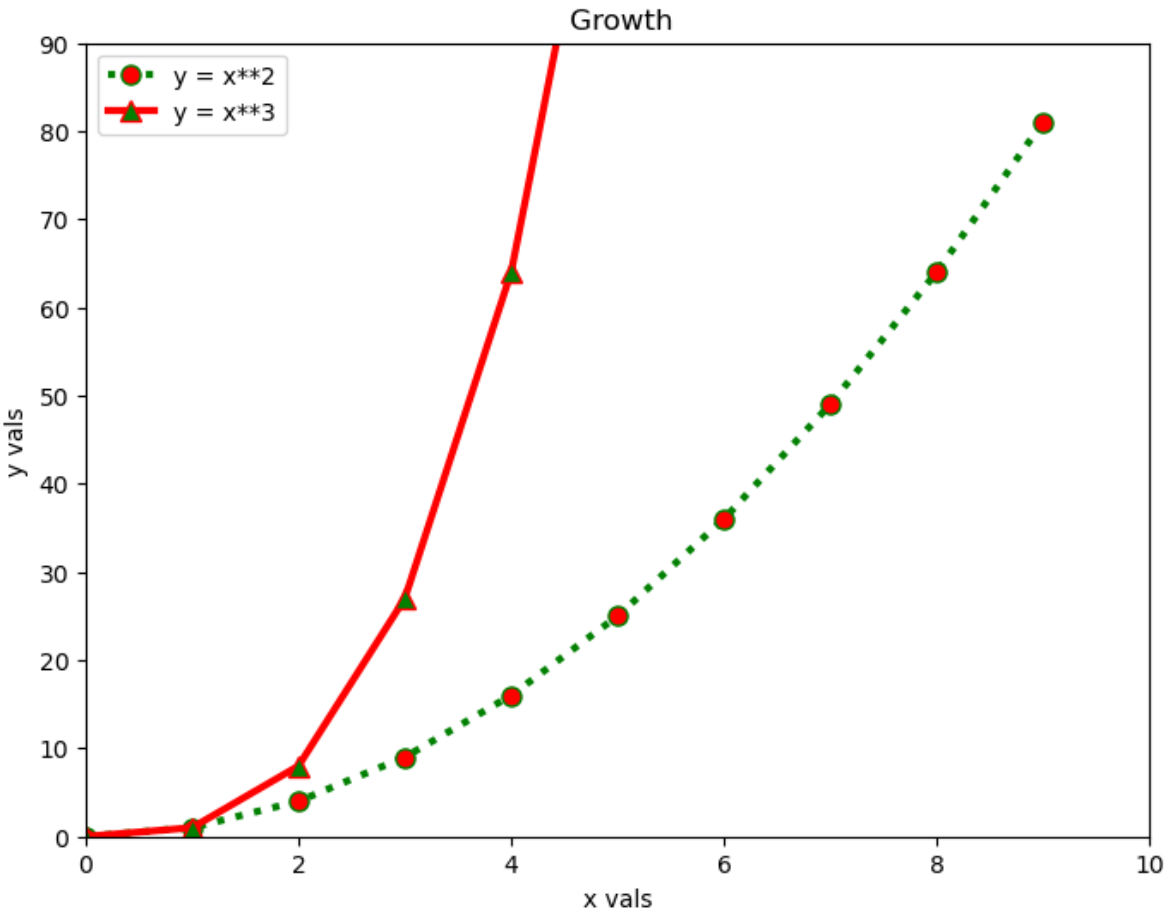
In [9]:
```
fig = plt.figure(figsize=(8,6))
plt.title("Quadratic Growth")
plt.xlabel("x vals")
plt.ylabel('y vals')
plt.xlim([0,10])
plt.ylim([0,100])
plt.plot(x,y, label='y == x**2')
plt.legend()
plt.show()
```



In [10]:
```
fig = plt.figure(figsize=(8,6))
axes = fig.add_subplot(111)
axes.set_title("Quadratic Growth")
axes.set_xlabel("x vals")
axes.set_ylabel('y vals')
axes.set_xlim([0,10])
axes.set_ylim([0,90])
axes.plot(x,y, label='y = x**2', color='green', linestyle=':', linewidth=3, marker
axes.legend()
plt.show()
```



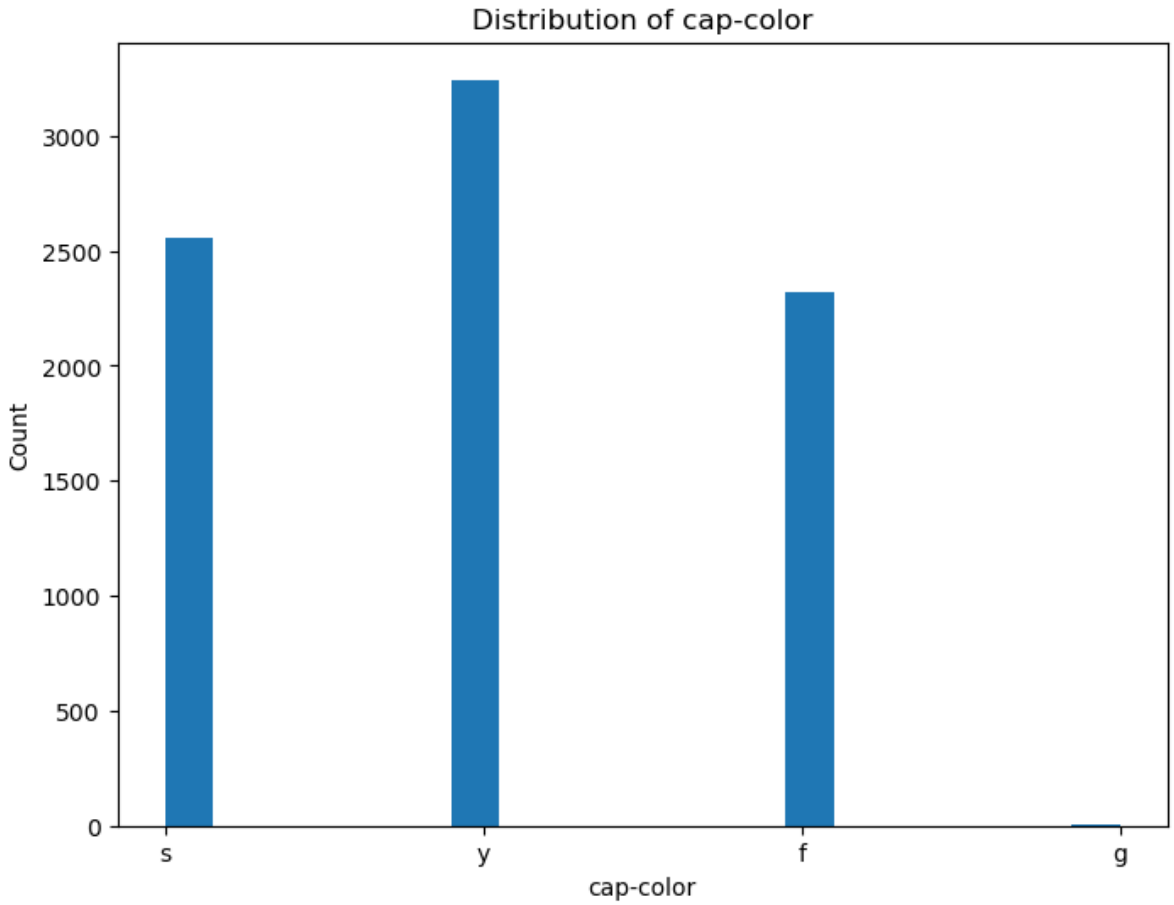
In [11]:
```
y3 = x**3
fig = plt.figure(figsize=(8,6))
axes = fig.add_subplot(111)
axes.set_title(" Growth")
axes.set_xlabel("x vals")
axes.set_ylabel('y vals')
axes.set_xlim([0,10])
axes.set_ylim([0,90])
axes.plot(x,y, label='y = x**2', color='green', linestyle=':', linewidth=3, marker
axes.plot(x,y3, label='y = x**3', color='red', linewidth=3, marker='^', markersize
axes.legend()
plt.show()
```



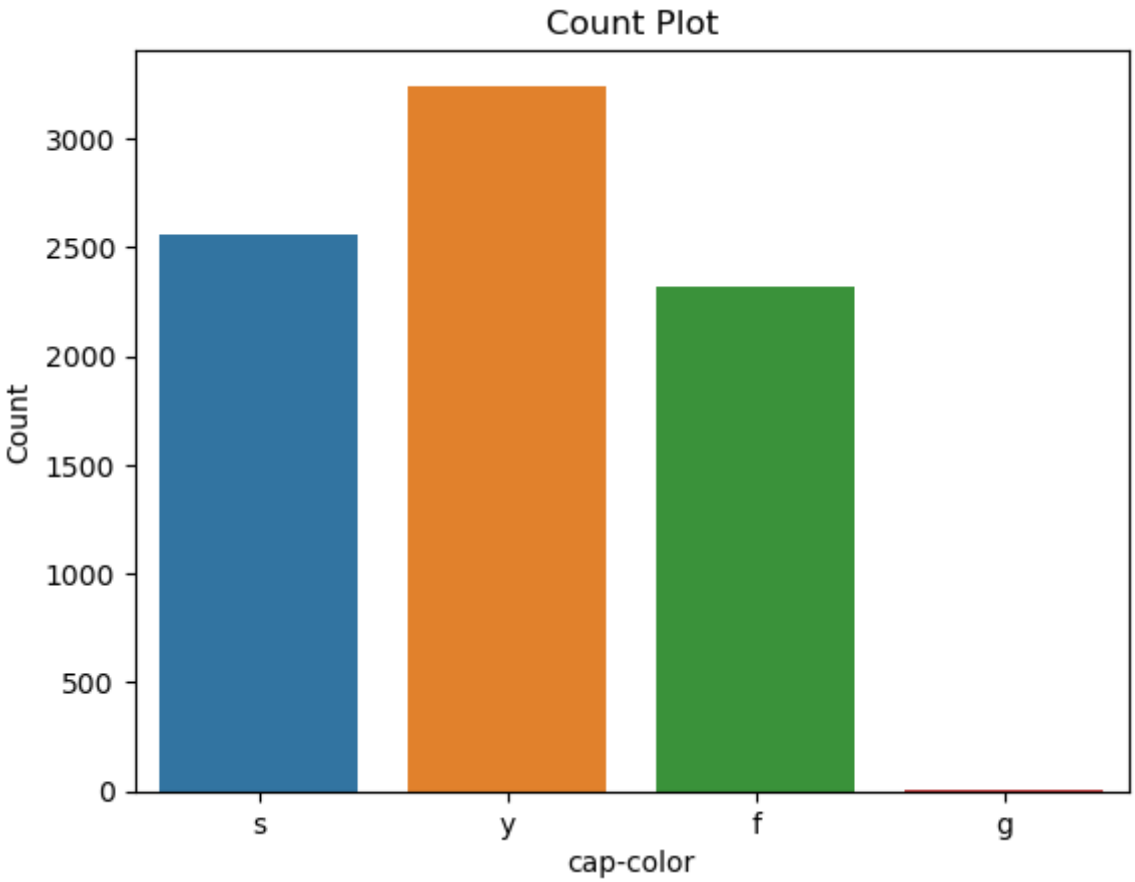
In [13]:
```
cap_color = df['cap-color']

cap_color.describe()
```

Out[13]:
```
count     8124
unique       4
top          y
freq      3244
Name: cap-color, dtype: object
```

In [14]:
```
fig = plt.figure(figsize=(8,6))
axes = fig.add_subplot(111)
axes.set(title="Distribution of cap-color", ylabel='Count', xlabel='cap-color')
axes.hist(cap_color, bins=20, orientation='vertical')
plt.show()
```

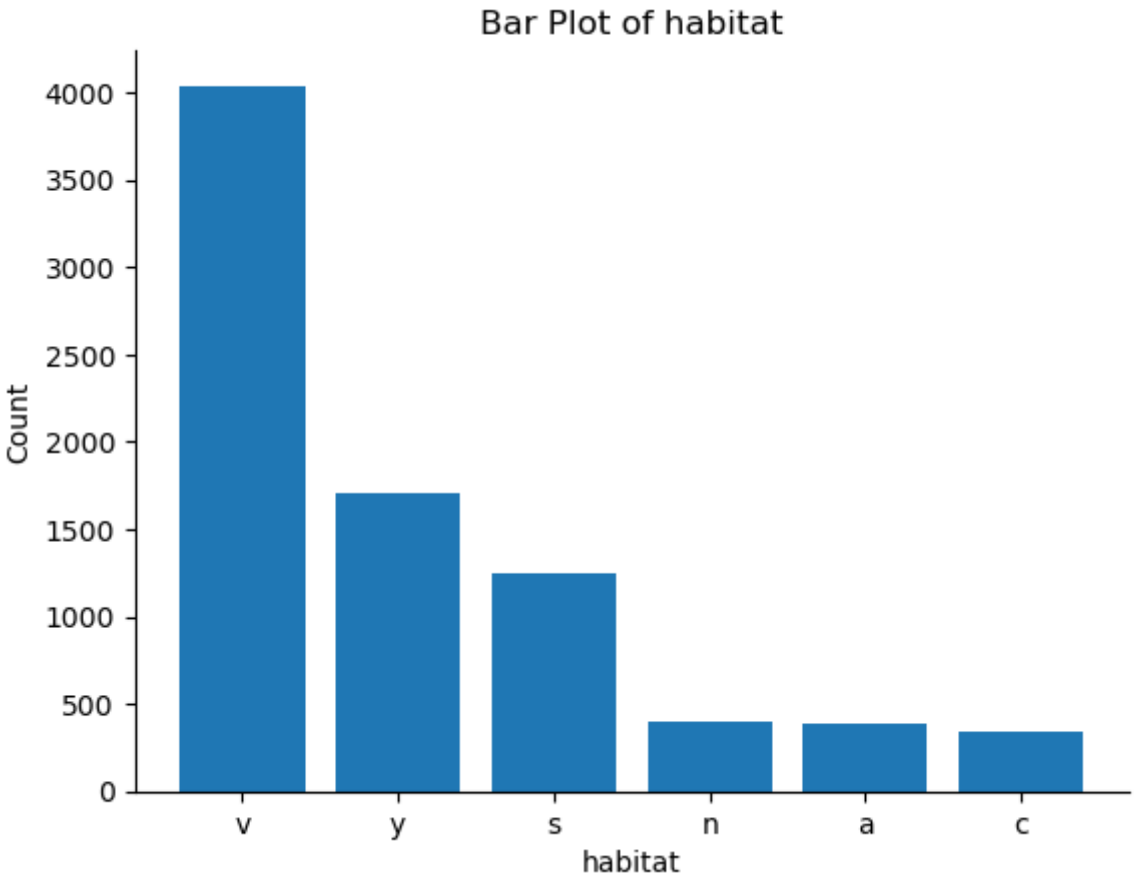


In [30]:
```
sns.countplot(data=df, x='cap-color')

plt.xlabel('cap-color')
plt.ylabel('Count')
plt.title('Count Plot')


plt.show()
```



In [34]:

```
category_counts = df['habitat'].value_counts()

fig, ax = plt.subplots()
ax.bar(category_counts.index, category_counts.values)

# Customize the plot using seaborn's styling options
sns.despine()
ax.set_xlabel('habitat')
ax.set_ylabel('Count')
ax.set_title('Bar Plot of habitat')

plt.show()
```


Bar Plot of habitat
Count
4000
3500
3000
2500
2000
1500
1000
500
0
v
y
s
n
a
c
habitat