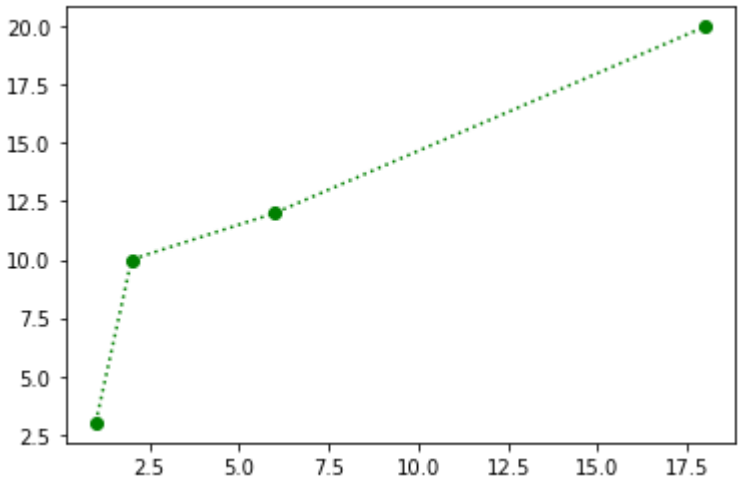
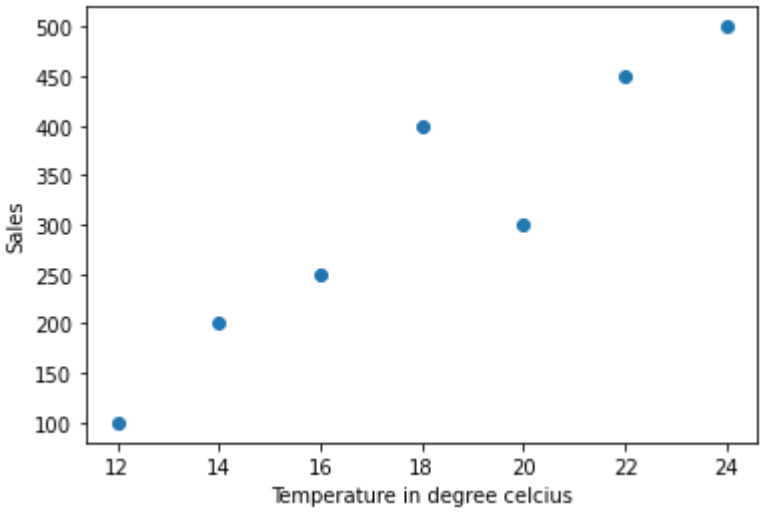
In [1]:
```
#1

import numpy as np
import matplotlib.pyplot as plt
```

In [14]:
```
xpoints = np.array([1, 2,6,18])
ypoints = np.array([3, 10,12,20])

plt.plot(xpoints, ypoints,marker = 'o',color="green",mec = 'g', mfc = 'g',l

plt.show()
```

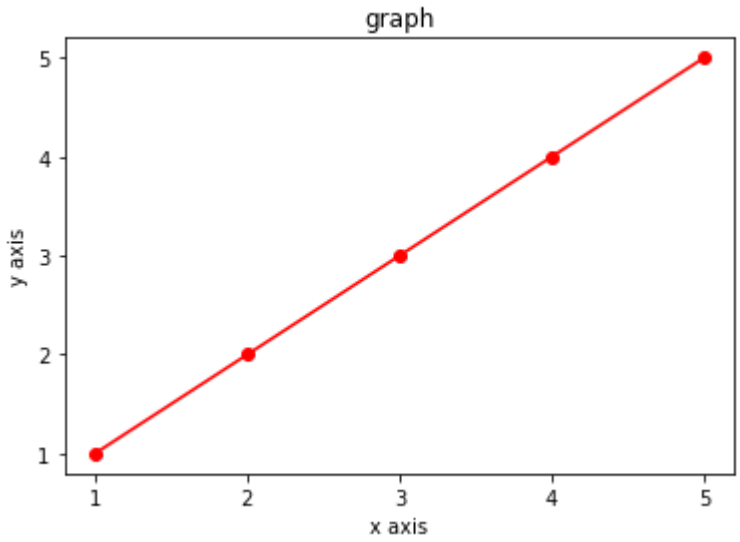


In [17]:
```
#2

xpoints = np.array([12, 14,16,18,20,22,24])
ypoints = np.array([100, 200,250,400,300,450,500])

plt.plot(xpoints, ypoints, 'o')

plt.xlabel("Temperature in degree celcius")
plt.ylabel("Sales")

plt.show()
```

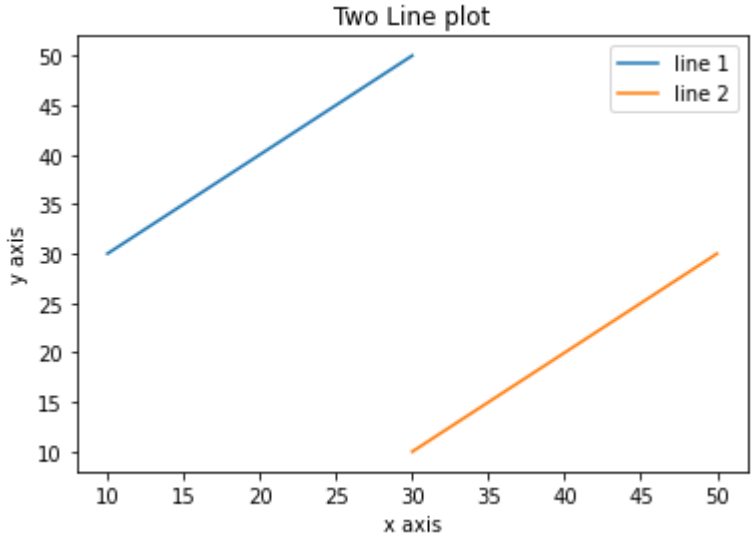


In [6]:
```
#3
import matplotlib.pyplot as plt


x = []
```

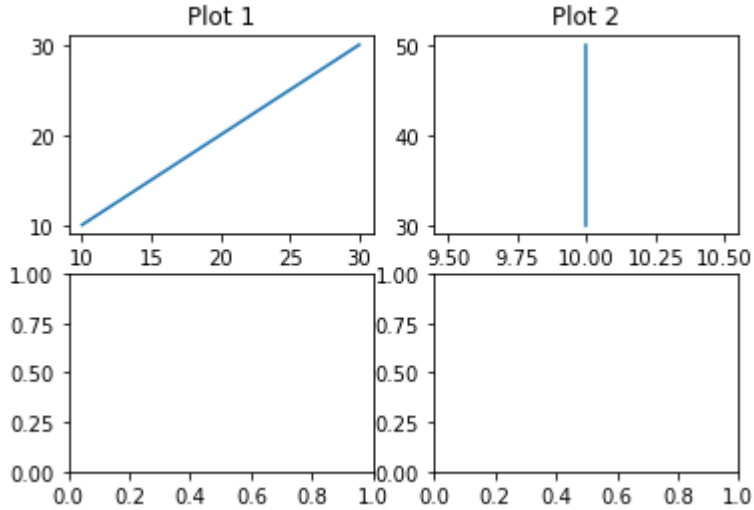
```
y = []
for line in open('3_dataset.txt','r'):
    lines=[i for i in line.split()]
    x.append(lines[0])
    y.append(int(lines[1]))


plt.xlabel('x axis')
plt.ylabel('y axis')
plt.title('graph')
plt.yticks(y)
plt.plot(x,y,marker='o',c='r')
plt.show()
```



In [8]:
```
#4
import matplotlib.pyplot as plt


x1 = [10,20,30]
y1 = [30,40,50]
plt.plot(x1, y1, label = "line 1")

x2 = [30,40,50]
y2 = [10,20,30]
plt.plot(x2, y2, label = "line 2")

plt.xlabel('x axis')
plt.ylabel('y axis')

plt.title('Two Line plot')

plt.legend()
plt.show()
```

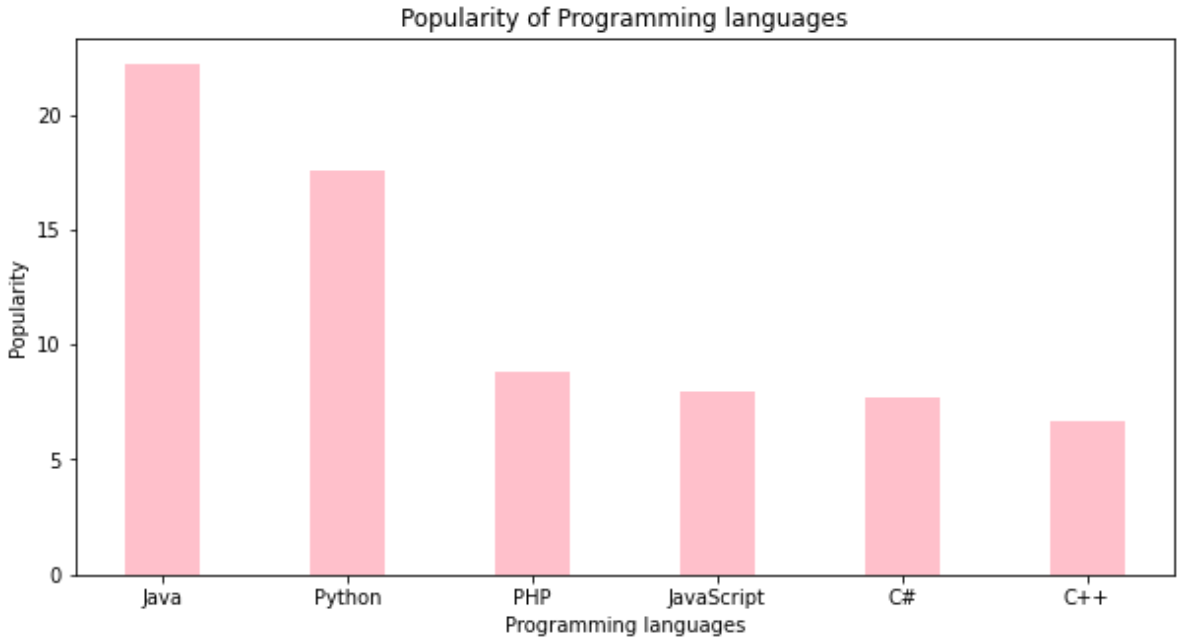


In [10]:
```
#5

import matplotlib.pyplot as plt

figure, axis = plt.subplots(2,2)


x1 = [10,20,30]
y1 = [10,20,30]
axis[0, 0].plot(x1, y1)
axis[0, 0].set_title("Plot 1")

x2 = [10,10,10]
y2 = [30,40,50]
axis[0, 1].plot(x2, y2)
axis[0, 1].set_title("Plot 2")

plt.show()
```



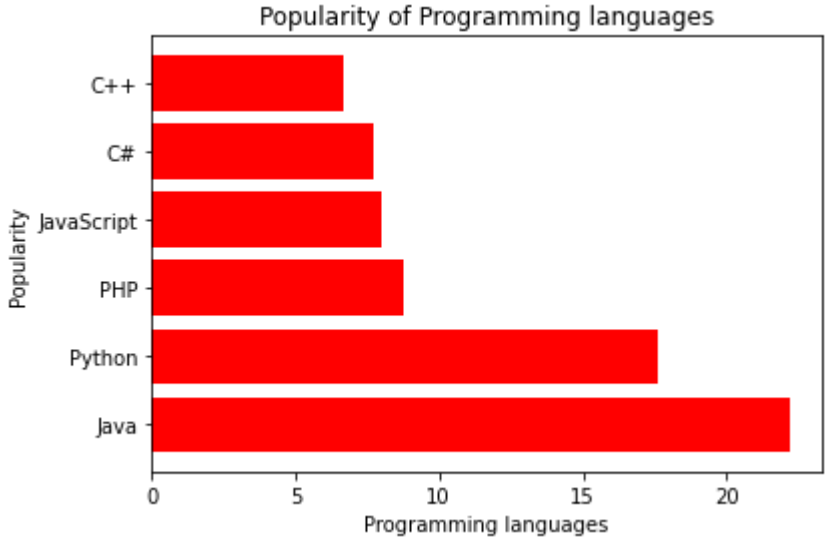
In [16]:
```
#6 (1)

import numpy as np
import matplotlib.pyplot as plt


# creating the dataset
data = {'Java':22.2, 'Python':17.6, 'PHP':8.8,'JavaScript':8,'C#':7.7,'C++'
```

```
courses = list(data.keys())
values = list(data.values())

fig = plt.figure(figsize = (10, 5))

# creating the bar plot
plt.bar(courses, values, color ='pink',width = 0.4)

plt.xlabel("Programming languages")
plt.ylabel("Popularity")
plt.title("Popularity of Programming languages")
plt.show()
```

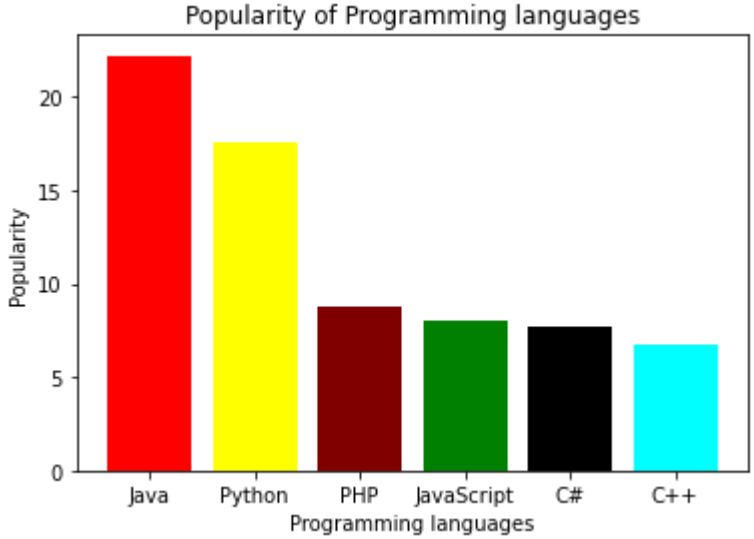


In [18]:

```
#6 (2)

import numpy as np
import matplotlib.pyplot as plt


# creating the dataset
data = {'Java':22.2, 'Python':17.6, 'PHP':8.8,'JavaScript':8,'C#':7.7,'C++'

courses = list(data.keys())
values = list(data.values())

#fig = plt.figure(figsize = (10, 5))

# creating the bar plot
plt.barh(courses, values, color ='red')

plt.xlabel("Programming languages")
plt.ylabel("Popularity")
plt.title("Popularity of Programming languages")
plt.show()
```

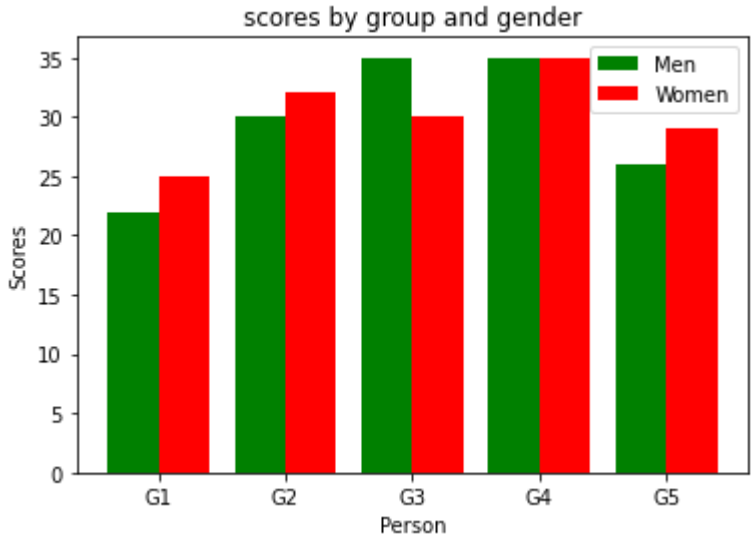


In [19]:
```
#6 (3)

import numpy as np
import matplotlib.pyplot as plt


# creating the dataset
data = {'Java':22.2, 'Python':17.6, 'PHP':8.8,'JavaScript':8,'C#':7.7,'C++'
color=("red","yellow","maroon","green","black","cyan")
courses = list(data.keys())
values = list(data.values())

#fig = plt.figure(figsize = (10, 5))

# creating the bar plot
plt.bar(courses, values, color =color)

plt.xlabel("Programming languages")
plt.ylabel("Popularity")
plt.title("Popularity of Programming languages")
plt.show()
```



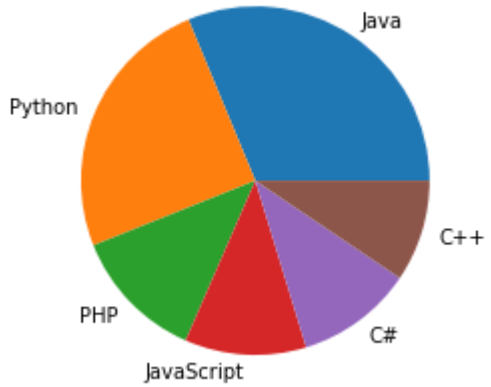
In [20]:
```
#7

import numpy as np
import matplotlib.pyplot as plt

y1 = [22,30,35,35,26]
```

```
y2 = [25,32,30,35,29]
x_labels = ['G1','G2','G3','G4','G5']
x1 = np.arange(5)
width = 0.40

plt.bar(x1-0.2,y1,color="green",width=width,label='Men')
plt.bar(x1+0.2,y2,color="red",width=width,label='Women')
plt.xticks(x1,x_labels)



plt.xlabel("Person")
plt.ylabel("Scores")
plt.legend()

plt.title("scores by group and gender")
plt.show()
```



In [21]:

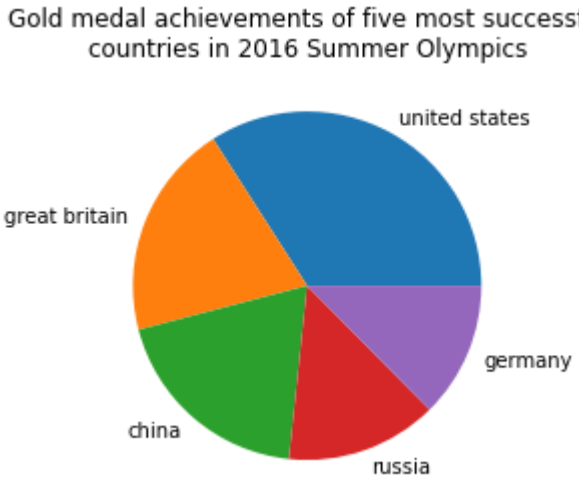
```
#8
import matplotlib.pyplot as plt
import numpy as np

y = np.array([22.2,17.6,8.8,8,7.7,6.7])
mylabels = ["Java", "Python", "PHP", "JavaScript", "C#", "C++"]

plt.pie(y, labels = mylabels)
plt.show()
```



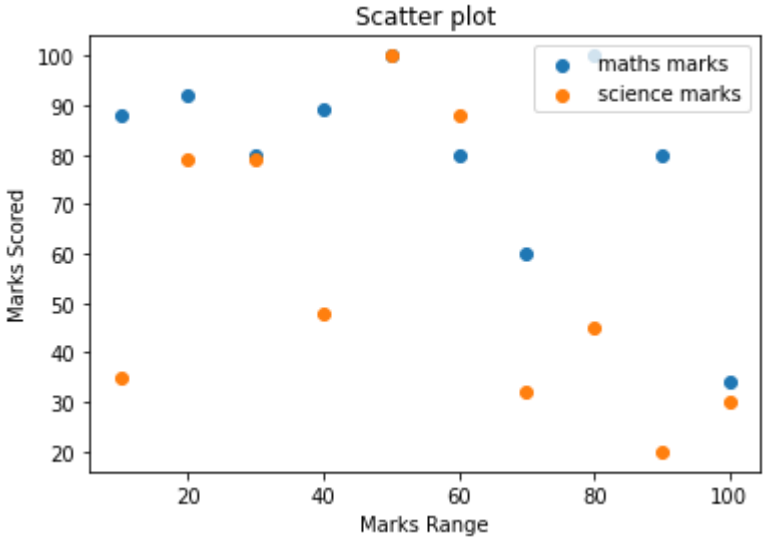
In [23]:

```
#9
import matplotlib.pyplot as plt
import pandas as pd
```

```
df =  pd.read_csv('9_data.csv')
country_data = df["country"]
medal_data = df["gold_medal"]


plt.pie(medal_data, labels=country_data)
plt.title("Gold medal achievements of five most successful\n"+"countries in
plt.show()
```

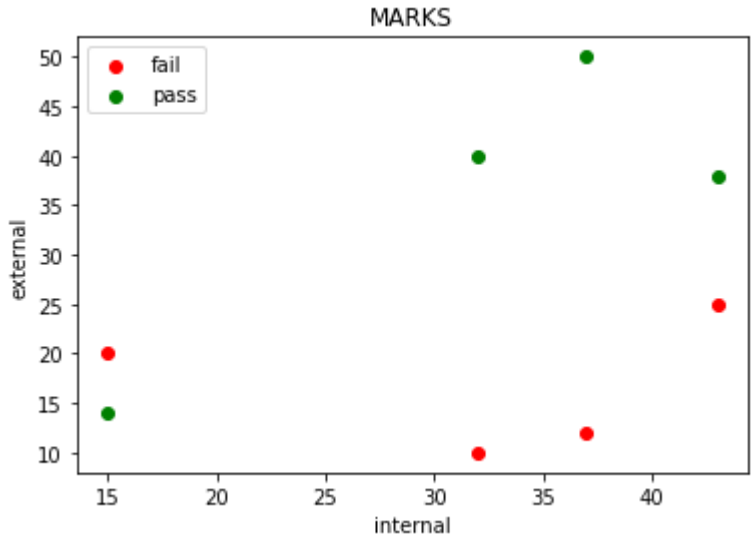


In [24]:
```
#10

import matplotlib.pyplot as plt

x = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
m = [88, 92, 80, 89, 100, 80, 60, 100, 80, 34]
s = [35, 79, 79, 48, 100, 88, 32, 45, 20, 30]

plt.scatter(x, m,label="maths marks")
plt.scatter(x, s,label="science marks")
plt.legend(loc='upper right')

plt.xlabel("Marks Range")
plt.ylabel("Marks Scored")
plt.title("Scatter plot")
plt.show()
```



In [26]:
```
import matplotlib.pyplot as plt
import pandas as pd
```

```
internal = [10,20,12,25]
external = [40,14,50,38]
classy=[32,15,37,43]
plt.scatter(classy, internal,label="fail",color="red")
plt.scatter(classy, external,label="pass",color="green")
plt.title('MARKS')
plt.xlabel('internal')
plt.ylabel('external')
plt.legend(loc='upper left')
plt.show()
```



In [ ]: