

PLOTTING WITH PYPLOT

PROGRAMS

#Python program to display bar chart with following data

```
prog_languages = ('Python', 'C++', 'Java', 'Perl', 'C', 'Lisp')
```

```
performance = [10,7,6,4,2,1]
```

```
import matplotlib.pyplot as plt;
```

```
import numpy as np
```

```
prog_languages = ('Python', 'C++', 'Java', 'Perl', 'C', 'Lisp')
```

```
y_pos = np.arange(len(prog_languages))
```

```
performance = [10,7,6,4,2,1]
```

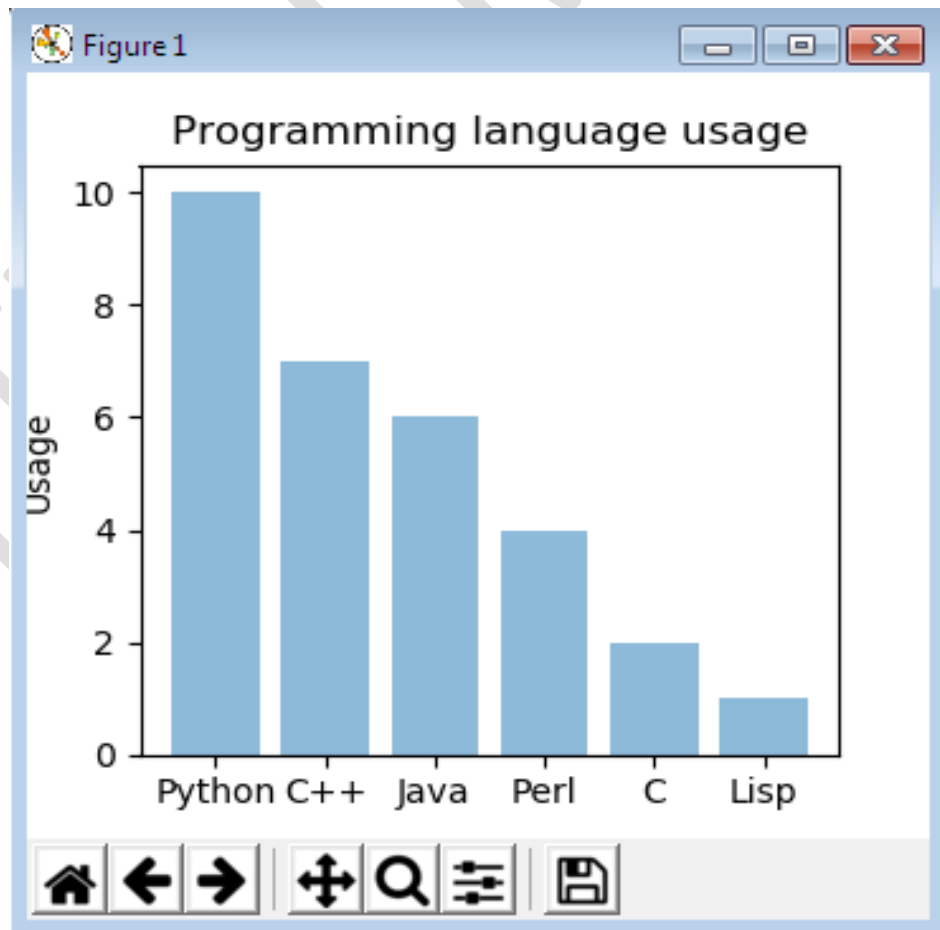
```
plt.bar(y_pos, performance, align='center', alpha=0.5)
```

```
plt.xticks(y_pos, prog_languages)
```

```
plt.ylabel('Usage')
```

```
plt.title('Programming language usage')
```

```
plt.show()
```



#Python program to display **horizontal bar chart** with following data

```
prog_languages = ('Python', 'C++', 'Java', 'Perl', 'C', 'Lisp')
```

```
performance = [10,7,6,4,2,1]
```

```
import matplotlib.pyplot as plt;
```

```
import numpy as np
```

```
prog_languages = ('Python', 'C++', 'Java', 'Perl', 'C', 'Lisp')
```

```
y_pos = np.arange(len(prog_languages))
```

```
performance = [10,7,6,4,2,1]
```

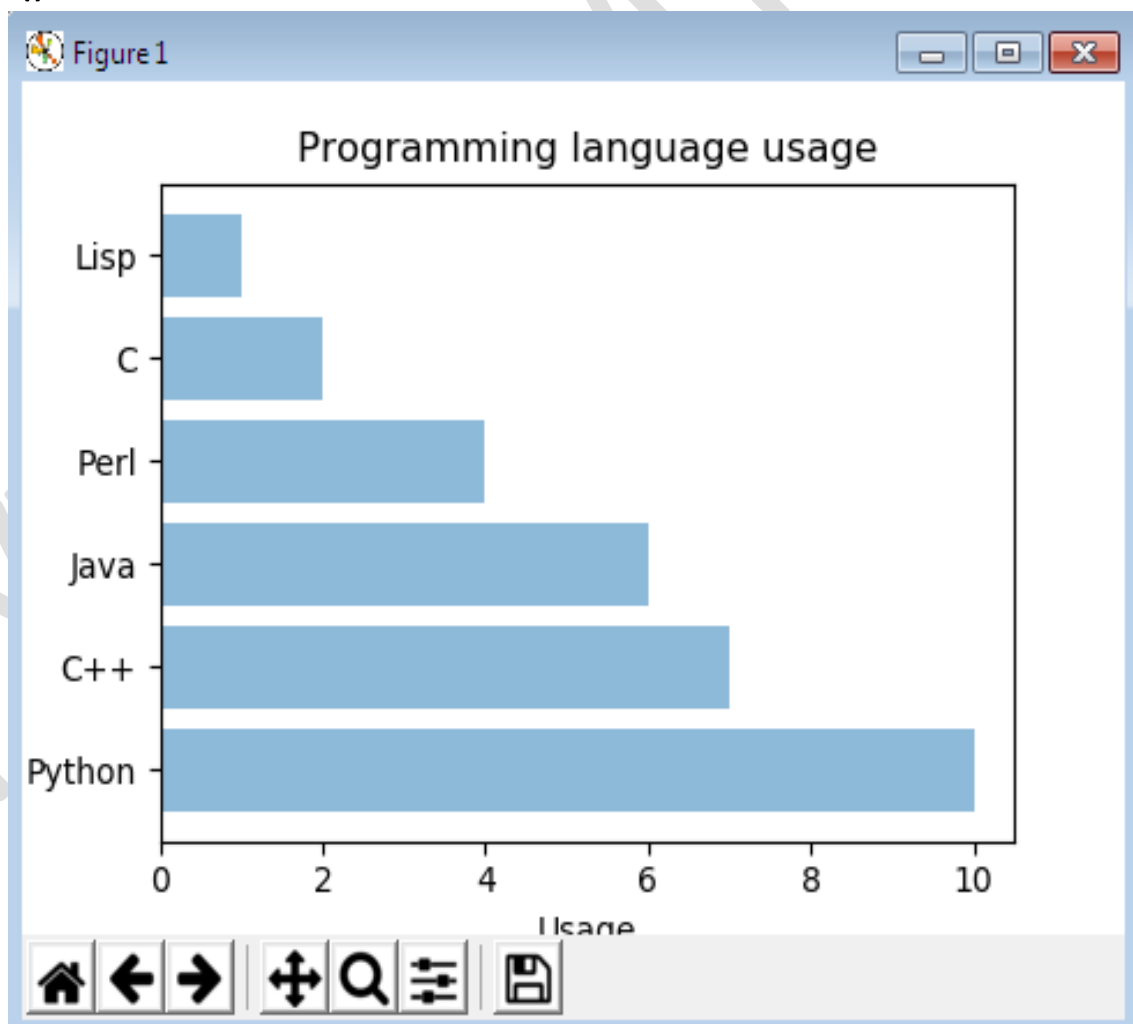
```
plt.barh(y_pos, performance, align='center', alpha=0.5)
```

```
plt.yticks(y_pos, prog_languages)
```

```
plt.xlabel('Usage')
```

```
plt.title('Programming language usage')
```

```
plt.show()
```



#Python program to display histogram of following data

```
population_ages = [24,55,62,45,11,22,34,42,42,4,99,102,110,120,  
121,122,130,111,115,112,80,75,65,54,44,43,42,48]
```

```
bins = [0,10,20,30,40,50,60,70,80,90,100,110,120,130]
```

```
import matplotlib.pyplot as plt
```

```
population_ages = [24,55,62,45,11,22,34,42,42,4,99,102,110,120,  
121,122,130,111,115,112,80,75,65,54,44,43,42,48]
```

```
bins = [0,10,20,30,40,50,60,70,80,90,100,110,120,130]
```

```
plt.hist(population_ages, bins, histtype='bar', rwidth=0.8)
```

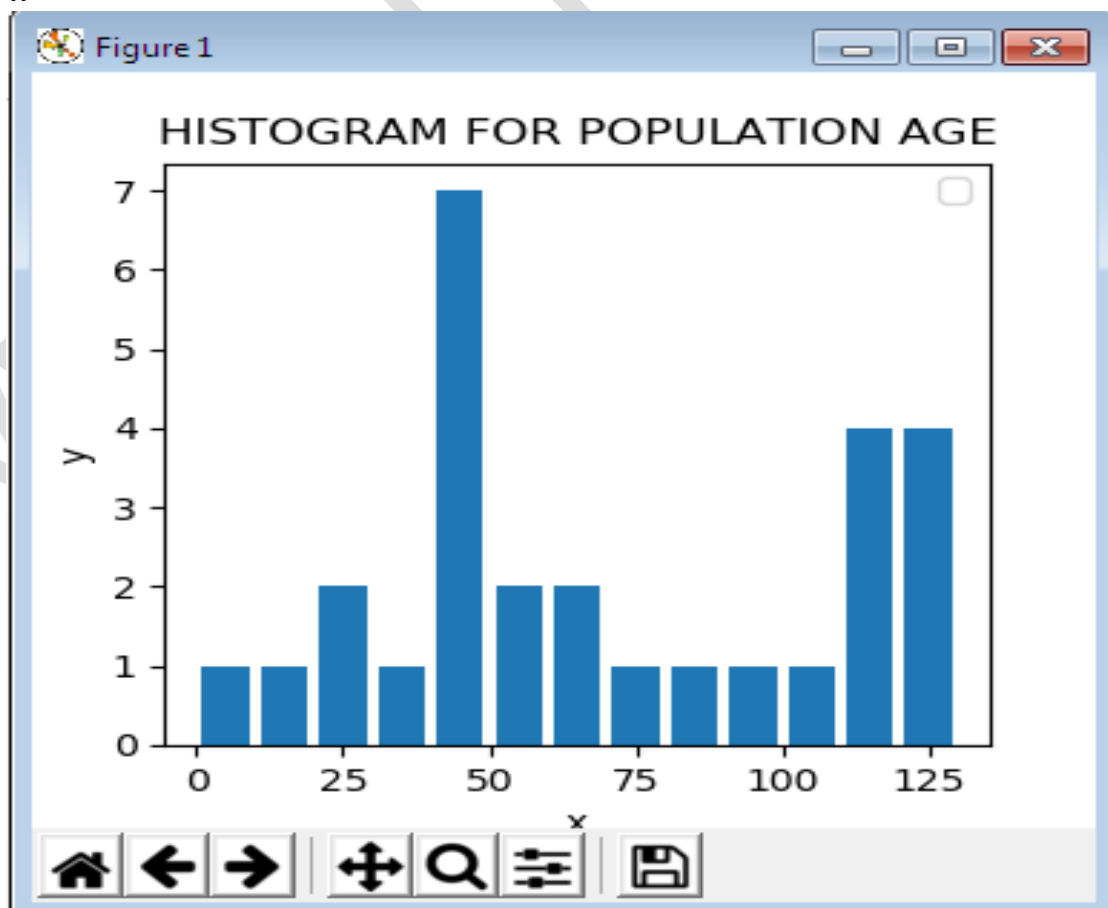
```
plt.xlabel('x')
```

```
plt.ylabel('y')
```

```
plt.title('HISTOGRAM FOR POPULATION AGE')
```

```
plt.legend()
```

```
plt.show()
```



Create box plot in python with fills and labels:

For marks scored for 5 test in 4 subjects

```
import matplotlib.pyplot as plt
```

```
marks1 = [82,76,24,40,67]
```

```
marks2=[62,5,91,25,36]
```

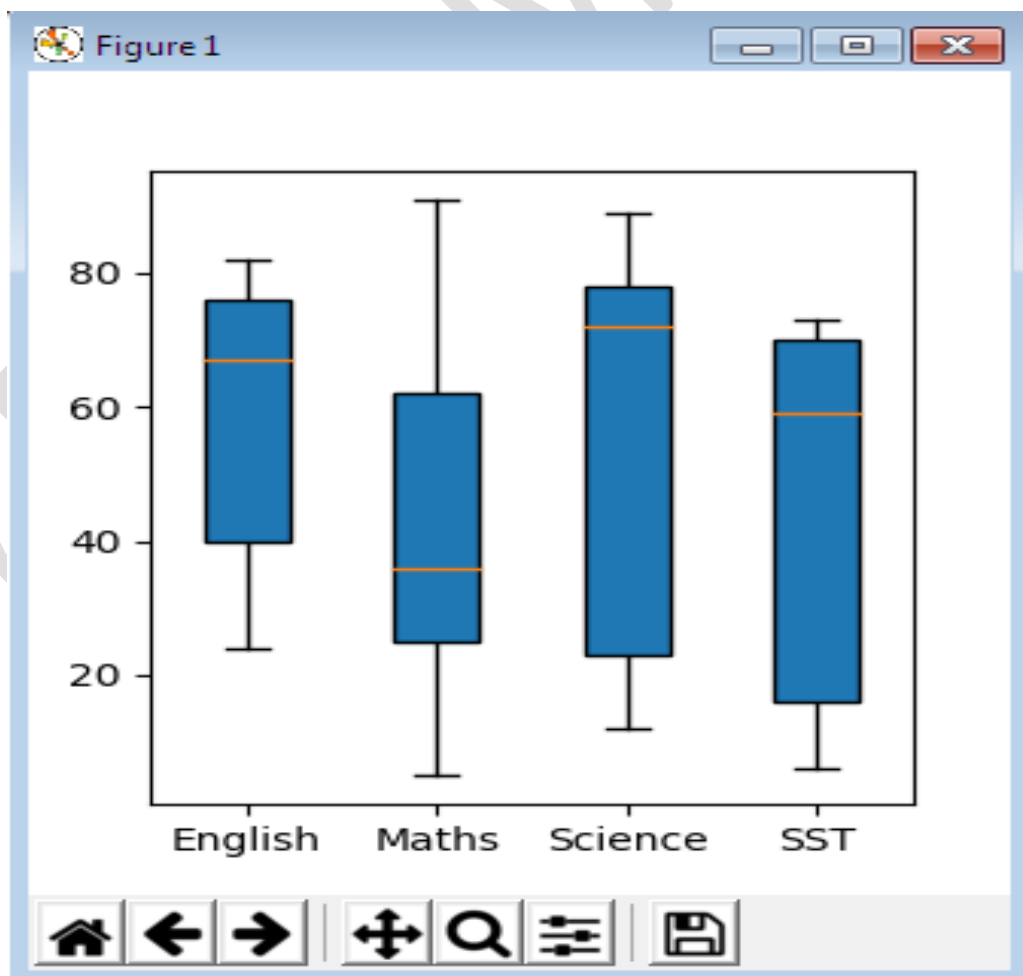
```
marks3=[23,89,12,78,72]
```

```
marks4=[59,73,70,16,6]
```

```
box_plot_data=[marks1,marks2,marks3,marks4]
```

```
plt.boxplot(box_plot_data,patch_artist=True,labels=['English','Maths',  
, 'Science','SST'])
```

```
plt.show()
```



Create box plot in python with notch

```
import matplotlib.pyplot as plt
```

```
marks1 = [82,76,24,40,67]
```

```
marks2=[62,5,91,25,36]
```

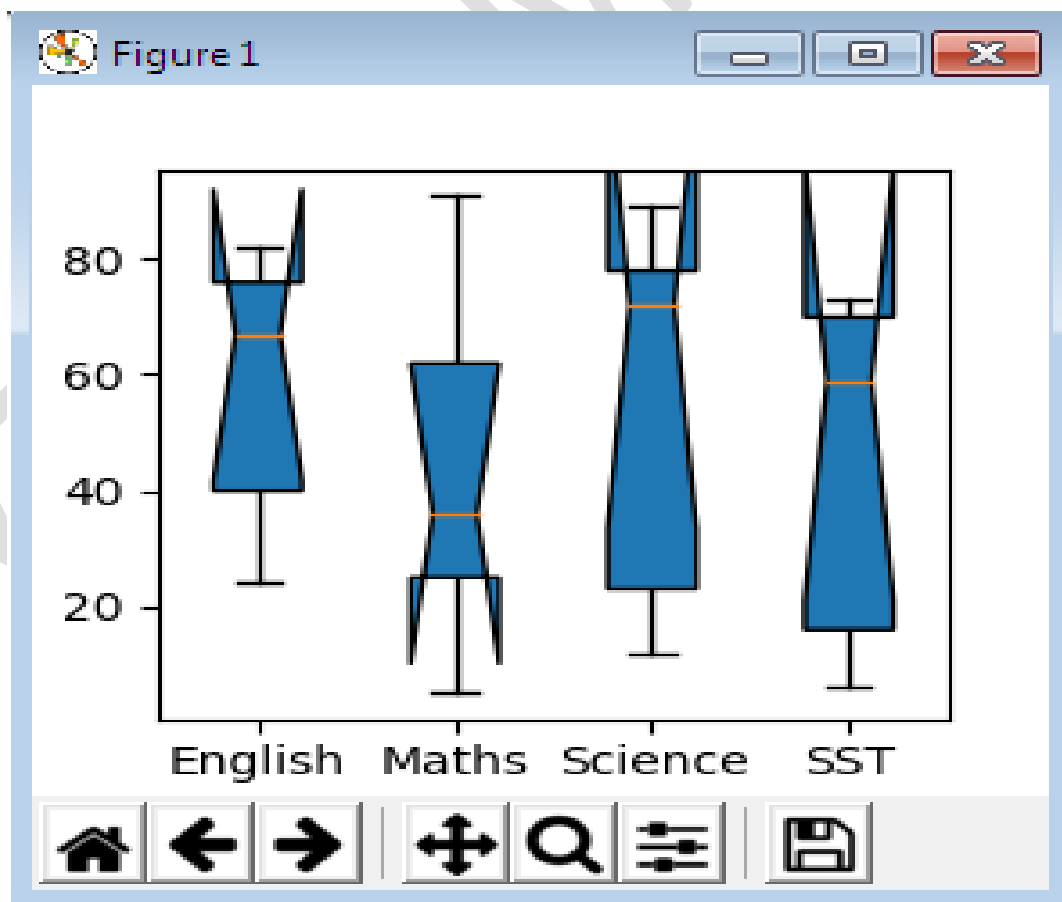
```
marks3=[23,89,12,78,72]
```

```
marks4=[59,73,70,16,6]
```

```
box_plot_data=[marks1,marks2,marks3,marks4]
```

```
plt.boxplot(box_plot_data,notch='True',patch_artist=True,labels=['English','Maths','Science','SST'])
```

```
plt.show()
```



Horizontal box plot in python

```
import matplotlib.pyplot as plt
```

```
marks1 = [82,76,24,40,67]
```

```
marks2=[62,5,91,25,36]
```

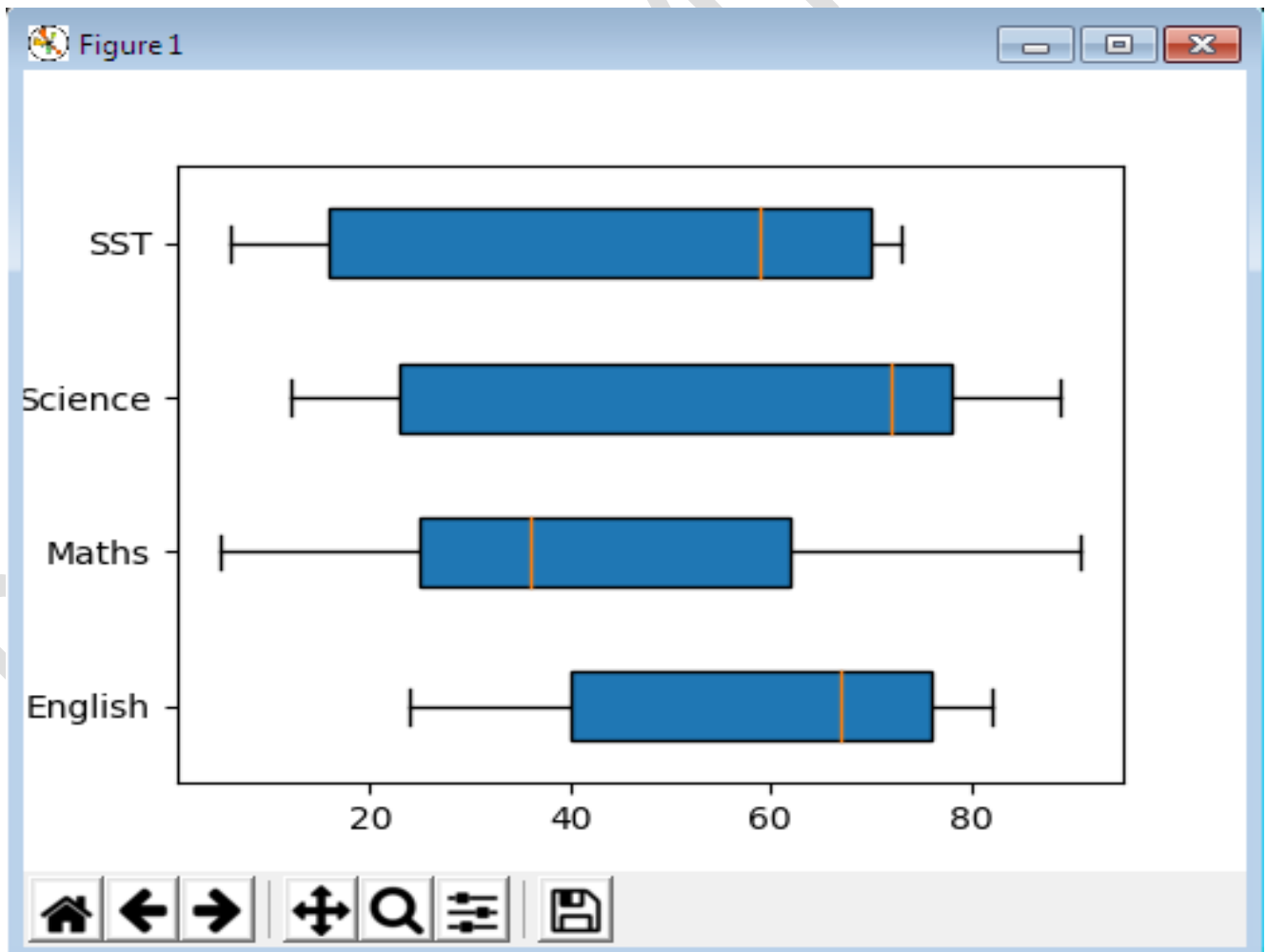
```
marks3=[23,89,12,78,72]
```

```
marks4=[59,73,70,16,6]
```

```
box_plot_data=[marks1,marks2,marks3,marks4]
```

```
plt.boxplot(box_plot_data,vert=0,patch_artist=True,labels=['English',  
, 'Maths', 'Science', 'SST'])
```

```
plt.show()
```



#Python program to display Scatter plot of following data

```
girls_grades = [79, 89, 60, 89, 100, 80, 90, 100, 80, 34]
```

```
boys_grades = [40, 29, 59, 48, 60, 98, 38, 45, 20, 30]
```

```
grades_range = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
```

```
import matplotlib.pyplot as plt
```

```
import pandas as pd
```

```
girls_grades = [79, 89, 60, 89, 100, 80, 90, 100, 80, 34]
```

```
boys_grades = [40, 29, 59, 48, 60, 98, 38, 45, 20, 30]
```

```
grades_range = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
```

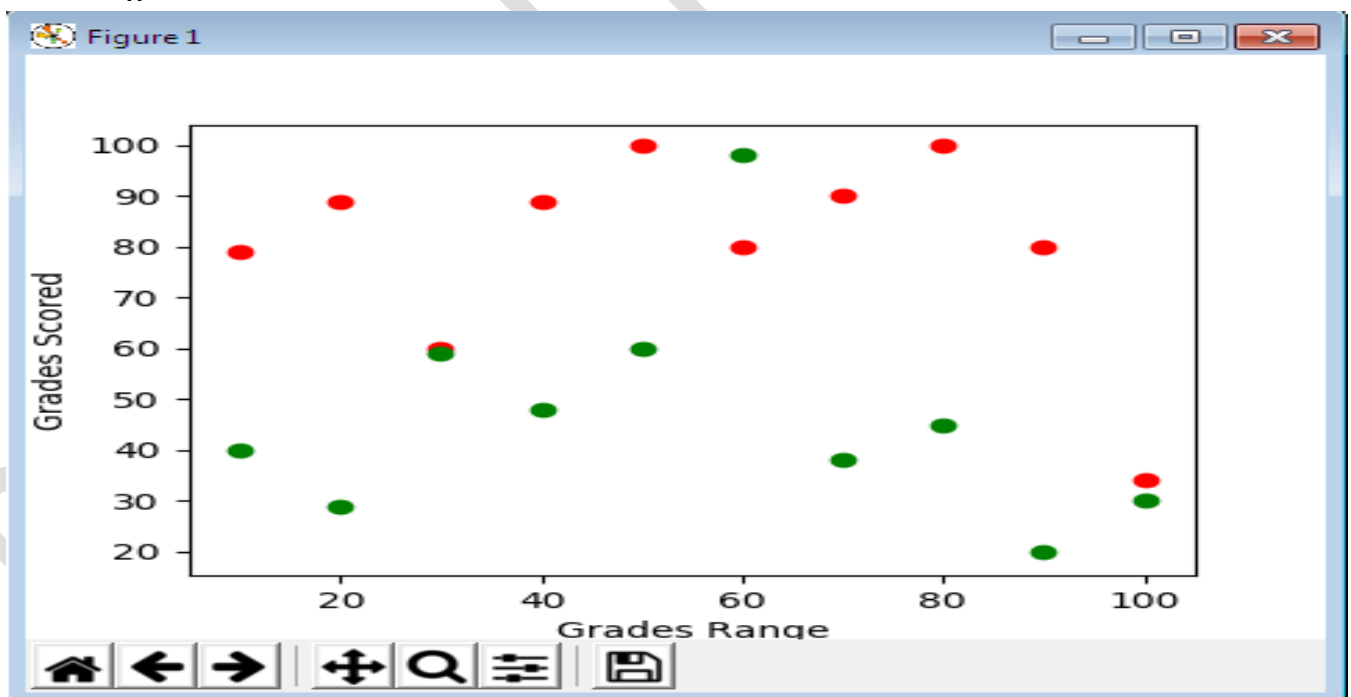
```
plt.scatter(grades_range, girls_grades, color='r')
```

```
plt.scatter(grades_range, boys_grades, color='g')
```

```
plt.xlabel('Grades Range')
```

```
plt.ylabel('Grades Scored')
```

```
plt.show()
```



#Above scatter plot shows the performance of girls and boys based on marks, red dot shows girls performance while green shows boys performance and one girl with low performance