

Python Labs

Graphs

1. Create a text file with 2 lines of numbers:

```
23 34 45 35 60 40 56 58
2 5 6 8 12 15 18 25
```

2. Create a solid line graph from the above data (first line is y), to read the file use loadtxt method
3. Change the graph to green solid line with square markers
4. Change the graph to pie graph(use only the first line)
5. Add a legend to the pie chart (hint: use the pie method return value)

Events

Create a sin graph with indicators. Clicking on each indicator displays its exact x,y location

1. Create a graph for $\sin(x \cdot 2\pi/50)$ for x 1:50
2. Add circle indicator with picker tolerance = 3
3. Add pick event handler
4. Add an axis label at position 5,0 and update it with picked value

Image processing

Read an image file, convert it to gray-scale and display the result

To convert to gray you need to calculate for each pixel:

$$R * 0.299 + G * 0.587 + B * 0.144$$

Add a blur effect