

Experiment 2

AIM : Representation of data

To Perform representaion of data in python using numpy and matplotlib

DESCRIPTION:

1. **Numpy** : It is the fundamental package for scientific computing with Python. It is used to read data from tsv file ('web_traffic.tsv') into memory.
2. **Matplotlib** : It is a plotting library for the Python and its numerical mathematics extension NumPy. It is used to plot graph of data read with numpy.

CODE and OUTPUT :

In [7]:

```
# Representation of Data in Python using matplotlib
# Libraries
import numpy as np
import scipy as sp
import matplotlib.pyplot as plt
%matplotlib inline
```

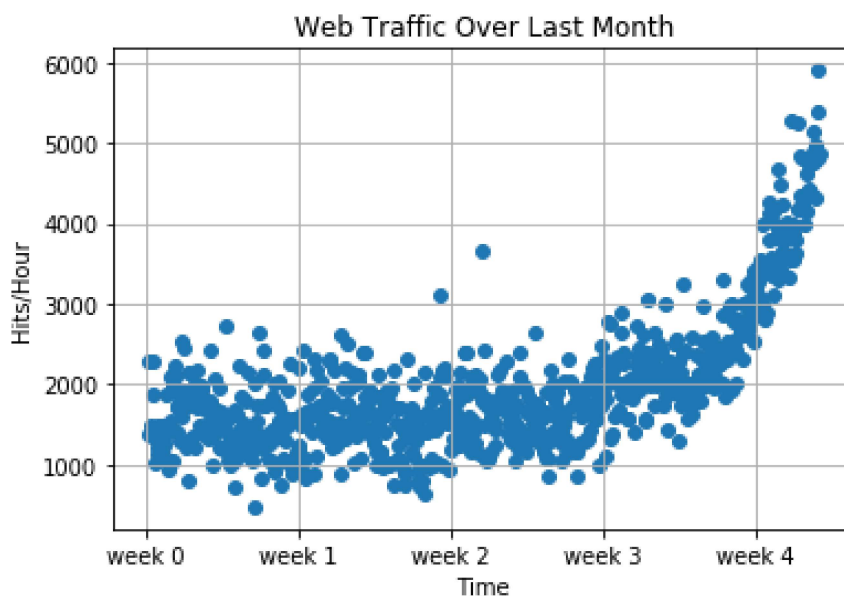
In [8]:

```
# Reading data from csv file
data = sp.genfromtxt('web_traffic.tsv',delimiter='\t')
# Printing 10 data points from beginning
print(data[10:])
# Separating data
x = data[:,0]
y = data[:,1]
y.shape
# Cleaning data i.e. removing null values
sp.sum(sp.isnan(y))
x = x[~sp.isnan(y)]
y = y[~sp.isnan(y)]
# Shape of Data
print(x.shape,y.shape)
```

```
[[ 11. 1139.]
 [ 12. 1477.]
 [ 13. 1203.]
 ...
 [ 741. 5392.]
 [ 742. 5906.]
 [ 743. 4881.]]
(735,) (735,)
```

In [9]:

```
# Plotting data in matplotlib
plt.scatter(x,y)
# Adding Labels
plt.title('Web Traffic Over Last Month')
plt.xlabel('Time')
plt.ylabel('Hits/Hour')
# Replacing no. of days with weeks
plt.xticks([w*7*24 for w in range(10)],['week %i'%w for w in range(10)])
plt.autoscale(tight=False)
# Show Plot
plt.grid()
plt.show()
```



LEARNING OUTCOMES :

In this Experiment, we learned about the representation of data in python as graphs using matplotlib and numpy libraries.