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Akash-Sinha 21 May 2019 First Commit

c9bf575   3 days ago

1 contributor

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354 lines (353 sloc)   82.6 KB

Akash-Sinha 21 May 2019 First Commit

c9bf575   3 days ago

Problem Solving and Programming

Day No -

Date -

Day Objectives

1. Objective 1
2. Objective 2
3. Objective 3

Problem 1 :

Problem Statement

Plotting 2D Graphs using Matplotlib
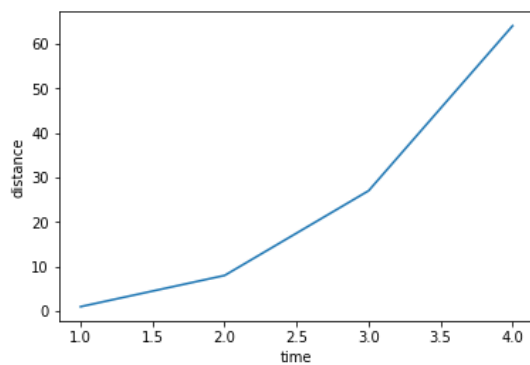
Constraints

Test Cases

- Test Case 1
- Test Case 2
- Test Case 3

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

         plt.plot([1, 2, 3, 4], [1, 8, 27, 64])
         plt.xlabel('time')
         plt.ylabel('distance')
         plt.show()
```



```
In [ ]:
```

Problem 2 :

Problem Statement

Constraints

Test Cases
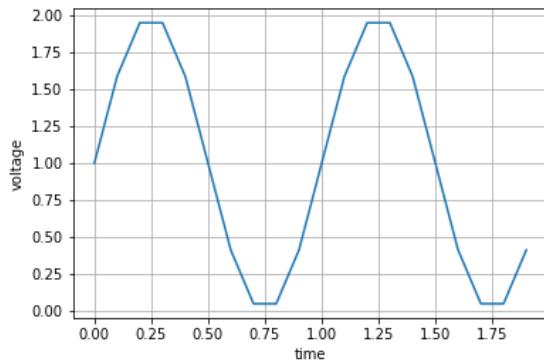
- Test Case 1
- Test Case 2
- Test Case 3

```
In [13]:  import numpy as np

          t = np.arange(0.0, 2.0, 0.1)
          v = 1 + np.sin(2 * np.pi * t)

          plt.xlabel('time')
          plt.ylabel('voltage')
```

```
plt.grid(True)
plt.plot(t,v)
plt.savefig('Figures/time-voltage.png')
plt.show()
```


In [ ]:

Problem 3 :

Problem Statement

Plot a line graph on **income vs year** for the state of **California**

Constraints

**Test Cases**

- Test Case 1
- Test Case 2
- Test Case 3

```
In [22]: import pandas as pd
         df = pd.read_csv('DataFiles/Income.csv')
         y = df.values[4]
         x = df.columns
         x
         y
```

```
Out[22]: array(['04000US06', 'California', 51755, 55319, 55734, 57014, 56134, 54283,
                53367, 57020, 57528], dtype=object)
```

```
In [33]: years = []
         for i in range(2, len(x)):
             years.append(x[i])
         years
         income = []
         for i in range(2, len(y)):
             income.append(y[i])
         income
         plt.xlabel('Year')
         plt.ylabel('Income')
         plt.title('Income of California State')
         plt.plot(years, income)
         plt.grid(True)
         plt.savefig('Figures/line-graph-income-California.png')
         plt.show()
```
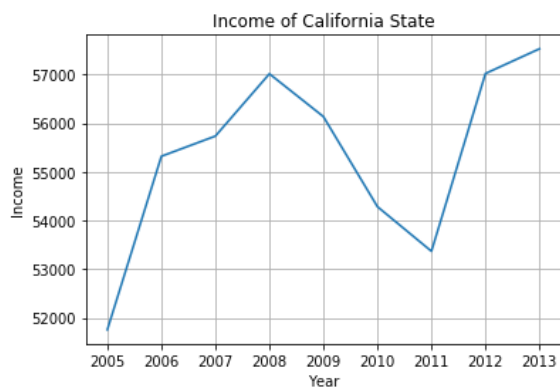


```
In [36]: width = 1/3
         plt.title('Income of California')
```

```
plt.bar(years, income, width, color= Gray )
#plt.savefig('Figures/bar-graph-income-California.png')
```


Income of California
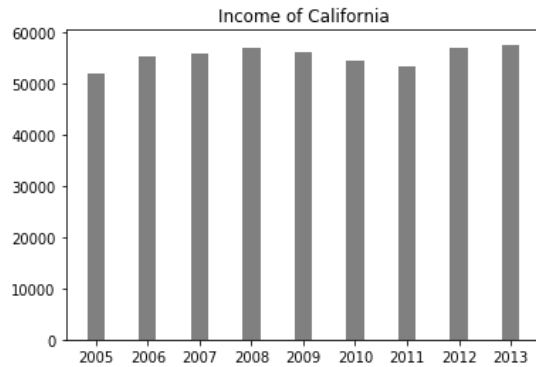
In [ ]:

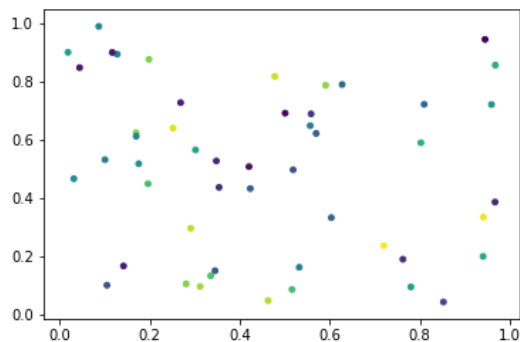## Problem 4 :

Problem Statement

Generate a Scatter Plot for 50 random numbers

Constraints

Test Cases

- Test Case 1
- Test Case 2
- Test Case 3

In [45]:
```
n = 50
x = np.random.rand(n) #Generate 50 random numbers
y = np.random.rand(n)#Generate 50 random numbers
colorlist = np.random.rand(n)#Generate 50 random color values
arealist = (15) #Generate 50 random areas of circles
plt.scatter(x, y, s=arealist, c=colorlist, alpha=10)
plt.savefig('Figures/scatter-plot-50-random-numbers.png')
```


In [ ]:

Problem 1 :

Problem Statement

Constraints

Test Cases

- Test Case 1
- Test Case 2
- Test Case 3

In [ ]:

In [ ]:

Problem 1 :

Problem 1 :

Problem Statement

Constraints