In [2]:
```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
```

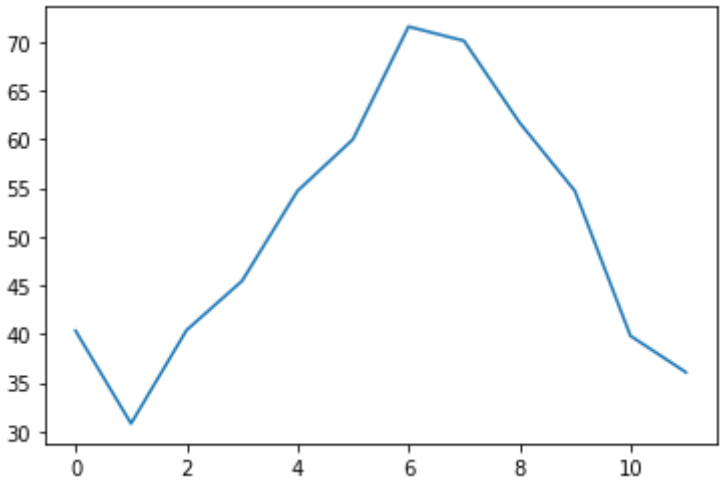
In [3]:
```
def get_df(year):
    return pd.read_csv('Environmental_Data_Deep_Moor_{}.csv'.format(year))
```

In [4]:
```
def monthly_avg_calc(month, column):
    return df[df['date'].str.contains('201[2345]_[0]?' + str(month))][column].mean
```

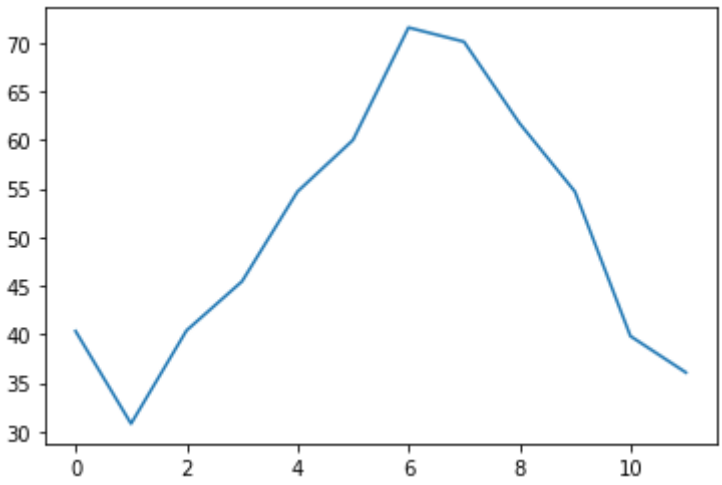
In [5]:
```
def yearly_avg(category):
    return list(map(lambda m: monthly_avg_calc(m, category), range(1,13)))
```

In [6]:
```
df = get_df('2013')
```

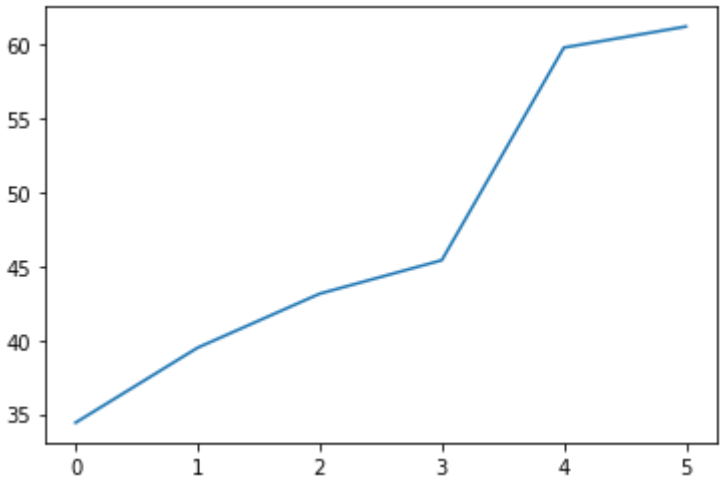
In [9]:
```
plt.plot(yearly_avg('Air_Temp'))
plt.show()
```



In [10]:
```
df = get_df('2014')
plt.plot(yearly_avg('Air_Temp'))
plt.show()
```



In [11]:
```
df = get_df('2015')
plt.plot(yearly_avg('Air_Temp'))
plt.show()
```



In [18]:
```
def get_years(arr_years):
    newarr=[];
    for i in arr_years:
        df = get_df(i)
        newarr.append(df)
    return newarr
```

In [27]:
```
arr = [2013, 2014, 2015]
```

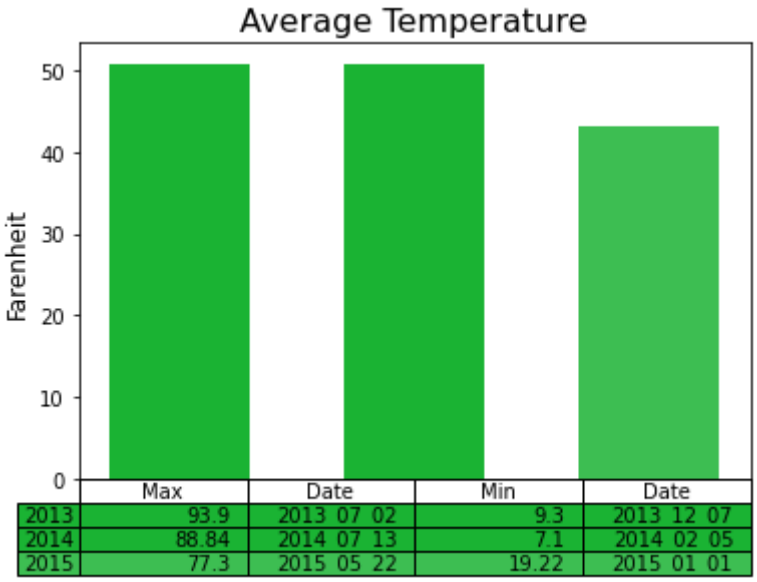
In [30]:
```
heights = [year['Air_Temp'].mean() for year in get_years(arr)]
```

In [33]:
```
def max_temp(s):
    return s[s['Air_Temp']==s['Air_Temp'].max()]
def min_temp(s):
    return s[s['Air_Temp']==s['Air_Temp'].min()]
```

In [34]:
```
def min_man_temps(arr):
    return [(max_temp(s)['Air_Temp'].values[0],
             max_temp(s)['date'].values[0],
             min_temp(s)['Air_Temp'].values[0],
             min_temp(s)['date'].values[0]
        ) for s in get_years(arr)]
```

In [37]:
```
alphas = [height/max(heights) for height in heights]
# RGBA TUPLE (.1,.7,.2,.5)
colors = [(.1,.7,.2,a) for a in alphas]
plt.bar(arr, heights, .6, color=colors)
plt.ylabel('Farenheit', fontsize=12)
plt.title('Average Temperature', fontsize=16)
plt.xticks(np.arange(2013,2016,1), rotation=60, fontsize=12)
columns = ['Max', 'Date', 'Min', 'Date']
plt.table(cellText=min_man_temps(arr),
          rowLabels=arr,
          colLabels=columns,
          rowColours=colors,
          cellColours=[[c]*4 for c in colors])
plt.xticks([])

plt.show()
```



	Max	Date	Min	Date
2013	93.9	2013 07 02	9.3	2013 12 07
2014	88.84	2014 07 13	7.1	2014 02 05
2015	77.3	2015 05 22	19.22	2015 01 01

In [ ]: