Monthly Average Highs in Austin, TX for 2012

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Load the data

```
data_file = '../austin_tmax.csv'
f = open(data_file)
pytex.add_dependencies(data_file)
raw_data = f.readlines()
f.close()
```

Process the data

```
monthly_data = [[] for x in range(0, 12)]
for line in raw_data[1:]:
    date, temp = line.split(',')[1:]
    index = int(date[4:-2]) - 1
    temp = int(temp)/10
    monthly_data[index].append(temp)

ave_tmax = [sum(t)/len(t) for t in
            monthly_data]

f = open('ave_tmax.pkl', 'wb')
pytex.add_created('ave_tmax.pkl')
pickle.dump(ave_tmax, f)
f.close()
```

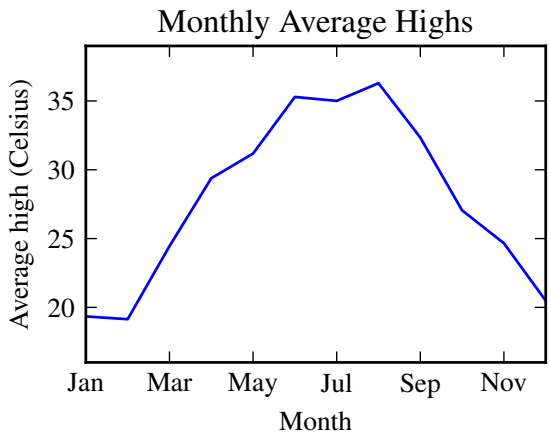
Plot average monthly TMAX

```
from matplotlib import pyplot as plt
from matplotlib import rc

rc('text', usetex=True)
rc('font', family='serif',
   serif='Times', size=10)

f = open('ave_tmax.pkl', 'rb')
pytex.add_dependencies('ave_tmax.pkl')
ave_tmax = pickle.load(f)
f.close()

fig = plt.figure(figsize=(3,2))
plt.plot(ave_tmax)
ax = fig.add_subplot(111)
ax.set_xticks(range(0,11,2))
labels = [months_abbr[x]
          for x in range(0,11,2)]
ax.set_xticklabels(labels)
plt.title('Monthly Average Highs')
plt.xlabel('Month')
plt.ylabel('Average high (Celsius)')
plt.xlim(0, 11)
plt.ylim(16, 39)
plt.savefig('ave_tmax.pdf',
            bbox_inches='tight')
pytex.add_created('ave_tmax.pdf')
```



Summary

```
f = open('ave_tmax.pkl', 'rb')
pytex.add_dependencies('ave_tmax.pkl')
ave_tmax = pickle.load(f)
f.close()

tmax = max(ave_tmax)
tmax_month = months[ave_tmax.index(tmax)]
```

The largest monthly average high was 36.3 degrees Celsius, in August.