Solution5

October 23, 2015

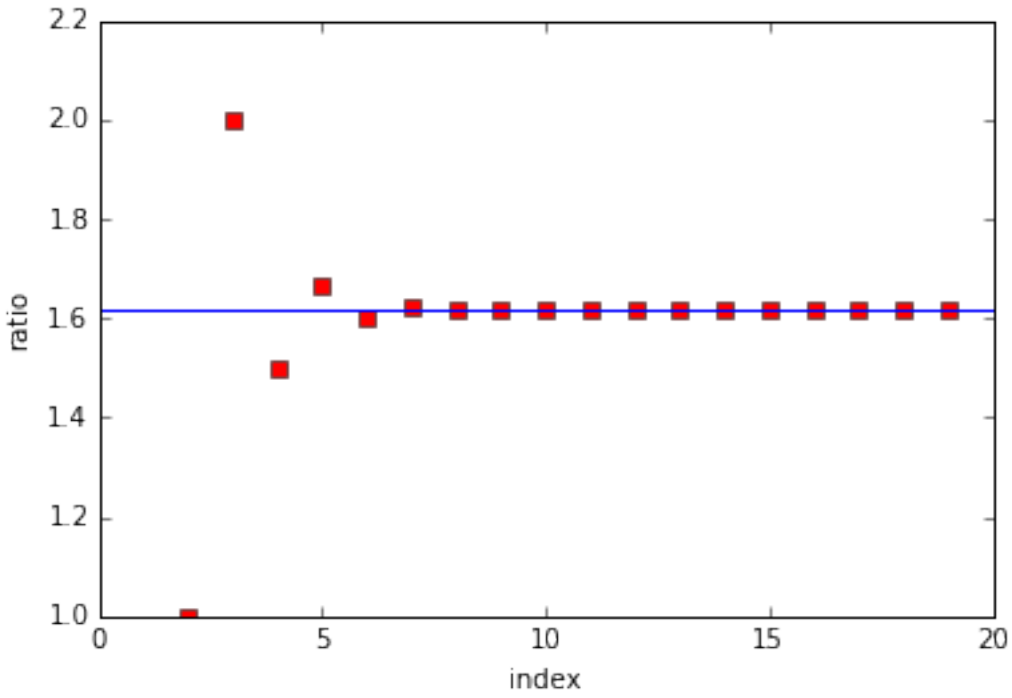
In [1]:
```
%matplotlib inline
```

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

def fibfunc(n=20,show_ratio=False):
    fib=[]
    ratio=[]
    if n>0:
        fib.append(0)
    if n>1:
        fib.append(1)
    if n>2:
        for i in range(2,n):
            fib.append(fib[i-1]+fib[i-2])
            ratio.append(float(fib[i])/float(fib[i-1]))
    if not show_ratio:
        return fib
    else:
        return fib,ratio

f,r=fibfunc(show_ratio=True)
x=np.arange(len(r))+2
plt.plot(x,r,'rs')
x1=np.array([0,20.])
y=0*x1+(1+np.sqrt(5.))/2.
plt.plot(x1,y,'b-')
plt.xlabel('index')
plt.ylabel('ratio')
```

Out[2]:
```
<matplotlib.text.Text at 0x7f81a25612d0>
```



In [2]: