File I/O

```
In [14]: fp = open('/etc/hosts')
         print fp.read()
         fp.close()
```

```
127.0.0.1       localhost
127.0.1.1       precise64

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

```
In [15]: fp = open('/etc/hosts')
         print repr(fp.read(40))
         print repr(fp.read(40))
         print repr(fp.read(40))
         fp.close()
```

```
'127.0.0.1\tlocalhost\n127.0.1.1\tprecise64\n'
'\n# The following lines are desirable for'
' IPv6 capable hosts\n::1     ip6-localhos'
```

```
In [16]: fp = open('/etc/hosts')
         for line in fp:
             print repr(line)
         fp.close()
```

```
'127.0.0.1\tlocalhost\n'
'127.0.1.1\tprecise64\n'
'\n'
'# The following lines are desirable for IPv6 capable hosts\n'
'::1     ip6-localhost ip6-loopback\n'
'fe00::0 ip6-localnet\n'
'ff00::0 ip6-mcastprefix\n'
'ff02::1 ip6-allnodes\n'
'ff02::2 ip6-allrouters\n'
```

```
In [17]: fp = open('/etc/hosts')
         fp.readlines()
```

```
Out[17]: ['127.0.0.1\tlocalhost\n',
          '127.0.1.1\tprecise64\n',
          '\n',
          '# The following lines are desirable for IPv6 capable hosts\n',
          '::1     ip6-localhost ip6-loopback\n',
          'fe00::0 ip6-localnet\n',
          'ff00::0 ip6-mcastprefix\n',
          'ff02::1 ip6-allnodes\n',
          'ff02::2 ip6-allrouters\n']
```

```
In [18]: print fp.read()
```

```
In [20]: fp.seek(10)
         print fp.read()
```

```
localhost
127.0.1.1        precise64

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

```
In [21]: fp.tell()
```

Out[21]: 224

```
In [22]: fp = open('/tmp/testfile.txt', 'w')
         fp.write('abcd\n')
         fp.close()
```

```
In [25]: fp = open('/tmp/testfile.txt')
         fp.read()
```

Out[25]: 'abcd\n'

```
In [26]: fp.write('hi')
```

```
---------------------------------------------------------------------------
IOError                                   Traceback (most recent call last)
/vagrant/<ipython-input-26-40576b043654> in <module>()
----> 1 fp.write('hi')

IOError: File not open for writing
```

```
In [28]: fp = open('/tmp/testfile.txt', 'a')
         fp.write('hi\n')
         fp.close()
         open('/tmp/testfile.txt').read()
```

Out[28]: 'abcd\nhi\nhi\n'

```
In [29]: fp = open('/tmp/testfile.txt', 'w')
         fp.write('hi\n')
         fp.close()
         open('/tmp/testfile.txt').read()
```

Out[29]: 'hi\n'

```
In [31]:  fp = open('/tmp/testfile.txt', 'w')
          fp.write('hi\n')
          fp.seek(0)
          fp.read()
```

```
-------------------------------------------------------------------------
IOError                                   Traceback (most recent call last)
/vagrant/<ipython-input-31-6bf0db77664c> in <module>()
      2 fp.write('hi\n')
      3 fp.seek(0)
----> 4 fp.read()

IOError: File not open for reading
```

```
In [40]:  fp = open('/tmp/testfile.txt', 'w+')
          fp.write('hi\n')
          fp.seek(0)
          fp.read()
```

```
Out[40]:  'hi\n'
```

```
In [41]:  fp = open('/tmp/testfile.txt', 'r+')
          fp.seek(2)
          fp.write('there\n')
          fp.seek(0)
          fp.read()
```

```
Out[41]:  'hithere\n'
```

```
In [42]:  fp = open('/tmp/testfile.txt', 'a+')
          fp.write('again\n')
          fp.seek(0)
          fp.read()
```

```
Out[42]:  'hithere\nagain\n'
```

Exercises

- Write a function that will print out a text file, line by line
- Enhance the function to print a line number before each line