```
9
10  def copyFile(f_src,f_des):
11      while True:
12          text = f_src.read(50)
13          if text == "":
14              break
15          f_des.write(text)
16
17
18
19  inFilename = 'hound.txt'
20  outFilename = 'hound_copy2.txt'
21  inf = open(inFilename, 'r')
22  outf = open(outFilename, 'w')
23
24  copyFile(inf,outf)
25
26  inf.close()
27  outf.close()
28
```

End of file

Empty string means EOF

To exit the loop

```
9
10  def copyFileWithoutComments(f_src,f_des):
11      while True:
12          text = f_src.readline()
13          print('DEBUG: text:' + text)
14          if text == "":
15              break
16          if text[0].strip() == '#':
17              continue
18          f_des.write(text)
19
20
21
22  inFilename = 'conf'
23  outFilename = 'conf_no_comment'
24  inf = open(inFilename, 'r')
25  outf = open(outFilename, 'w')
26
27  copyFileWithoutComments(inf,outf)
28
29  # close the files
30  inf.close()
31  outf.close()
32
```

Continue the loop from this point

Command line arguments

```
8
9   import sys
10
11  def copyFileWithoutComments(f_src,f_des):
12      while True:
13          text = f_src.readline()
14          #print('DEBUG: text:' + text)
15          if text == "":
16              break
17          if text[0].strip() == '#':
18              continue
19          f_des.write(text)
20
21
22
23  # check if arguments are passed; else exit with message
24  if len(sys.argv) <= 1:
25      print('Usage: copy4 sourceFile destFile')
26      sys.exit(-1)
27
28  inFilename = sys.argv[1]
29  outFilename = sys.argv[2]
30  inf = open(inFilename, 'r')
31  outf = open(outFilename, 'w')
32
33  copyFileWithoutComments(inf,outf)
34
35  inf.close()
36  outf.close()
37
```

Handling exceptions

```
 9  import sys
10  import traceback
11
12  def copyFileWithoutComments(f_src,f_des):
13      while True:
14          text = f_src.readline()
15          #print('DEBUG: text:' + text)
16          if text == "":
17              break
18          if text[0].strip() == '#':
19              continue
20          f_des.write(text)
21
22
23
24  # check if arguments are passed; else exit with message
25  if len(sys.argv) <= 1:
26      print('Usage: copy4 sourceFile destFile')
27      sys.exit(-1)
28
29  try:
30      inf = open(sys.argv[1], 'r')
31      outf = open(sys.argv[2], 'w')
32      copyFileWithoutComments(inf,outf)
33      inf.close()
34      outf.close()
35  except IOError:
36      print('Error performing file IO.')
37      traceback.print_exc()
38      sys.exit(-1)
39
```

file not found
disk full
etc

Handle exceptions

`open()` method can throw `OSError`
See here:
https://docs.python.org/3/library/functions.html#open

Batch processing: copy multiple files and rename them

```
 9  import sys
10  import os
11  import subprocess
12
13  if len(sys.argv) != 5:
14      print('\nCopies all files with extension <ext> in directory <srcdir> \n\
15  to directory <destdir>, prefixed by <prefix> \n')
16      print('Usage: multicopy ext prefix sourcedir destdir')
17      sys.exit(-1)
18
19  ext = sys.argv[1]
20  pre = sys.argv[2]
21  srcdir = sys.argv[3]
22  dstdir = sys.argv[4]
23
24  contents = os.listdir(srcdir)
25  for foo in contents:
26      fname, fext = os.path.splitext(foo)
27      newname = pre + '_' + fname + fext
28      cmd = 'cp ' + srcdir + '/' + foo + ' ' + dstdir + '/' + newname
29      print(cmd)
30      # run command in the operating system
31      subprocess.run(cmd.split())
32
```

Run an operating system command

Homework

- Read each line from `hound.txt` and print the number of words in each line to a new file.
- Generate a numpy array of random entries and save it into an ascii file.
- Create and save a matrix in the following format. Read two matrices and create numpy arrays. Find their sum and store the sum into a new file in the same format.

```
r c
a11 a12 ... a1c
a21 a22 ... a2c
...
ar1 ar2 ... arc
```

```
3 5
16 2 3 4 5
25 4 74 3 14
3 4 8 9 12
```

Example matrix