Jonas van den Brink, jvbrink

j.v.d.brink@fys.uio.no

5.1

```
import sys
from numpy import *

usage = 'Usage: %s start:stop,step func' % sys.argv[0]
if len(sys.argv) != 3:
    print usage;sys.exit(1)

start, tmp = sys.argv[1].split(':')
stop, step = tmp.split(',')

x = arange(float(start), float(stop)+float(step), float(step))
y = eval(sys.argv[2])
for i in range(len(x)):
    print "%12g%12g" % (x[i], y[i])

'''
user$ python xygenerator.py '0:500,0.5' 'x*sin(x)' > outfile.dat
user$ more outfile.dat
           0           0
         0.5    0.239713
           1    0.841471
         ...         ...
         499     245.007
       499.5     6.60915
         500    -233.886
'''
```

5.2

```
def join(delimiter, *args):
    """Function for joining strings, and tuples/lists of strings"""
    string = args[0] if type(args[0])== str else delimiter.join(args[0])
    for arg in args[1:]:
        if type(arg) == str:
            string += delimiter + arg
        else:
            string += delimiter + delimiter.join(arg)

    return string

if __name__ == "__main__":
    # Example of use
    list1 = ['s1','s2','s3']
    tuple1 = ('s4', 's5')
    ex1 = join(' ', 't1', 't2', list1, tuple1, 't3', 't4')
    ex2 = join('  #  ', list1, 't0')
    print ex1
    print ex2

'''
user$ python join.py
t1 t2 s1 s2 s3 s4 s5 t3 t4
s1  #  s2  #  s3  #  t0
'''
```

5.4

```
def gettime(lines):
    """Reads a text made by jhead and extracts the date and time"""
    date, time = [l.split()[2:] for l in lines if l[:9]=="Date/Time"][0]
    return tuple(date.split(':')), tuple(time.split(':'))

def prefix(date, time, string):
    """Adds date and time to a string as prefix, if the input string
    already contains the date and time, it is returned unchanged."""
    if len(string.split("__")) == 3: return string
    return "__".join(("_".join(date), "_".join(time), string))


if __name__ == '__main__':
    # Read in sample text from file
    infile = open('jhead.sample.txt', 'r')
    lines = infile.readlines()
    infile.close()

    # Extract date and time from sample text
    date, time = gettime(lines)

    # Add date and time to example filename
    name = "img_4978.jpg"
    altered_name = prefix(date, time, name)
    print altered_name

    # Try to add date and time again
    print prefix(date, time, altered_name)

'''
user$ python jpegrename.py
2002_05_19__18_10_03__img_4978.jpg
2002_05_19__18_10_03__img_4978.jpg
'''
```