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#! /usr/bin/env python

print "Basic operations (NUMBERS)"

n=1
print n+n, n*3, n/3, n*1./3
print type(n)

c=1+1j
print type(c)
print c.real, c.imag, abs(c)

print "Basic operations (STRINGS)"

s='STRING \n'
l='LONG '

print type(s)

print s, s*2, s, l+s

print len(s), (l+s).split()
print ' '.join((l+l+s).split())
print '#'.join((l+l+s).split())

print l.strip()+s.strip()

print "Function DOC. Example type"

print '***************'
print type.__doc__
print '***************'

import re
dir(re)

s="The time is 12:30pm!"
print s
m=re.match(".*time is (.*)pm", s)
print m
print m.group(1)
print m.groups()
m=re.search(r'time.*(\d+:\d+)pm',s)
print m
print m.group(1)
print re.sub(r'\d+:\d+','2:10',s)

print '***************'
print re.__doc__
print '***************'
print re.sub.__doc__
print '***************'


print 'Lists'

l=[10, 11] + [12,13]+[4]*3+range(2,7,2)
print l, len(l)
l[3]='ciao'
print l, len(l)
print 'ciao' in l
del l[3]
print l
print 'ciao' in l
print l[3:-2]
l.sort()
print l, l.count(11), l.index(11)


print "CONTROL FLOW"

# a simple if statement
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x=10
if x > 0:
    print 1
elif x == 0:
    print 0
else:
    print −1

for i in 'abcde':
    print i,
print
l=['dogs','cats','bears']
accum = ''
for item in l:
    accum = accum + item
    accum = accum + ' '
print accum


print 'FUNCTIONS'
print 'Describe the structure'

# We'll create our function
# on the fly in the
# interpreter.
def add(x,y):
    """this function
    adds two numbers"""
    a = x + y
    return a
# test it out with numbers
x = 2
y = 3
print add(x,y)
f=add
print f(x,y)

print add.__doc__


print 'READING FILES'

f = open('rcs.txt','r')
results=[]

# read lines and discard header
lines = f.readlines()[1:]
f.close()
for l in lines:
# split line into fields
    fields=l.split()
# convert text to numbers
    freq = float(fields[0])
    vv = float(fields[1])
    hh = float(fields[2])
# group & append to results
    all = [freq,vv,hh]
    results.append(all)

for i in results: print i

print 'WRITING FILES'

f = open('rcs1.txt','w')

for i in results:
    for j in i:
        f.write(str(j)+' ')
    f.write('\n')
```