Python-Beispiele zu FProg

Kapitel 1

iPython

```
b = [1, 2, 3]
b

b.index?
b?
def quadrat(x):
"""
Die Funktion liefert das Quadrat des Arguments
"""
return x*x

quadrat?

quadrat??

%cd ..
!ls
%pwd
```

Primitive Datentypen

```
x , y = False, True
x and y
(not x)+y

4/7
w = 4/7
w.as_integer_ratio()
v = w.as_integer_ratio()
v[0]
w.hex()

16/7
16//7
16.//7
int('0b1001', base=2)
```

Datei operatoren.py
Datei plot.py

Sequentielle Datentypen

```
z = "abcdefgäöüß“
t = (1, 'a‘, 0.765)
l = [z, t, 42]
l
l[1]

li = [1, 2, 3]
cli = li
cli
li[2] = 'a‘
print("li = ", li, ", cli =“, cli)
```

Bereiche

```
w = range(3,14)
w
for i in w: print(i)

li = [j for j in range(12)]
li
sum(li)
li[3:8]
li[-2]
li[:3]
li[2:7:2]
all([x>3 for x in li])
li
del li[2:7:2]
li
```

Operationen auf Listen

```
li = [j for j in range(12)]
li.append(13
li.extend(li[:-4]))
li.count(0)
li.index(4)
li.insert(12,13)
li
li.pop(12)
li
li.remove(0)
li.reverse()
li
li.sort()
li
li.sort(reverse=True)
li
```

```
li + [99, 100]
li
```

Ausgewählte String-Methoden

```
s = "abra cada bra"
s.islower()
s.startswith("abra")
s.endswith("bra")
s.find("cada")
s.isalpha()
“abra”*3
w = s.split()
w
s.count('a')
```

Formatierung von Strings

```
s = "Winter{}Semester{}2020"
s.format("-", " ab 10/")

t = "A {0} with a {1} is still a {0}."
t.format("fool","tool")

z = "{0:d}, {0:f} oder {0:E}"
z.format(1234)

z = "%d, %f oder %3E"
z %(1234, 12.34, 12)

print “int: %d, float: %f und string: %s” % (1, 2.3, “cada”)
```

Tupel

```
x = ‘abra’, 13
a, b = x
b
tuple('abra')
```

Lexikon

```
Lex = {}
Lex['abra'] = 'cadabra'
Lex
Lex[17] = 42
Lex
```

Datei dict.py