# Programare I
# Curs 4: Module. String-uri. Scrierea formatată. Expresii regulate.

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In [1]: def suma(x,y):
   ...:     return x+y
   ...:

In [2]: suma(2,3)

In [3]: suma('ana',' maria')

In [4]: def suma(x,y):
   ...:     if type(x) == int and type(y) == int:
   ...:         return x+y
   ...:

In [5]: suma('ana',' maria')

In [6]: print(suma('ana',' maria'))


In [7]: def suma(x,y):
   ...:     ...:     if type(x) == int and type(y) == int:
   ...:     ...:         return x+y
   ...:

In [8]: suma(2,3)


In [9]: import math

In [10]: sqrt(2)


In [11]: math.sqrt(2)

In [12]: math.e

In [13]: math.pi

In [14]: math.abs(2)


In [15]: from math import sqrt
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In [16]: sqrt(2)


In [17]: from math import e

In [18]: e

In [19]: pi


In [20]: from math import pi

In [21]: pi

In [21]: pi


In [23]:

In [23]: pi = 14

In [24]: pi

In [25]: e = 2

In [26]: e

In [27]: from math import e, pi

In [28]: e

In [29]: pi

In [30]: e = 'numarul e'

In [31]: e

In [32]: pi = ' numarul pi '

In [33]: pi



In [30]: e = 'numarul e'

In [31]: e

In [32]: pi = ' numarul pi '
    ...:
    ...: In [33]: pi
    ...: Out[33]: ' numarul pi '



In [35]: clear

In [36]: import math as m
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In [37]: m.e

In [38]: import math as alias

In [39]: alias.e

In [40]: alias.pi

In [41]: alias.e = 2

In [42]: alias.e

In [43]: alias.pi

In [44]: m.e

In [45]: from math import sqrt as radical, log10 as lg

In [46]: radical(4)

In [47]: radical(4) * lg(100)

In [48]: lg(100)

In [49]: s = 'anamaria'

In [50]: s[1] = 'm'


In [51]: s[1] = 'm' # al doilea caracter al sirului, adica n


In [52]: sir_modificat = s[0:1] + 'm' + s[2::]

In [53]: sir_modificat
Out[53]: 'amamaria'

In [54]: def modifica_sir(s, index, caracter):
    ...:     if index >= 0 and index < len(s):
    ...:         return s[0:index] + caracter + s[index+1::]
    ...:     return 'nu putem modifica sirul'
    ...:

In [55]: s = 'ana are mere'

In [56]: modifica_sir(s, 0, 'e')

In [57]: s

In [58]: s


In [60]: s

In [61]: modifica_sir(s, 1000, 'j')
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In [62]: def extrage_sir(s,start,stop):
    ...:     if start <= stop and start >= 0 and stop < len(s):
    ...:         return s[start:stop]
    ...:     return 'nu pot extrage sirul'
    ...:

In [63]: # s = 'ana maria'; start = 0; stop = 3;

In [64]: extrage_sir('ana maria', 0, 3)

In [65]: extrage_sir('ana maria', 0, -2)

In [66]: help(str)

In [68]: s = 'ana maria'

In [69]: s.upper

In [70]: s.upper()

In [71]: s.lower()

In [72]: s = s.upper()

In [73]: s

In [74]: s.lower()

In [75]: s.lower

In [76]: def foo(x):
    ...:     return x
    ...:

In [77]: foo

In [78]: foo(2)

In [79]: foo('ana')

In [80]: foo({1,2,3})

In [81]: foo({'a':1,'b':2})

In [82]: foo([1,2,3,4,5])

In [83]: foo((1,2,3,4,5))

In [84]: len(dir(str))

In [85]: for x in dir(str):
    ...:     print(x, end='==========')
    ...:     print()

In [87]: sir = 'mergem la scoala'

In [88]: sir
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In [89]: sir.split()

In [90]: sir = 'mergem,la,scoala'

In [91]: sir.split()

In [92]: sir.split(',')

In [93]: sir = 'mergem,la#scoala'

In [94]: sir

In [95]: sir.split()

In [96]: sir.split(',')

In [97]: sir.split(',#')
Out[97]: ['mergem,la#scoala']

In [98]: sir.split(', #')

In [99]: sir.split('#,')

In [100]: sir.split('#')

In [101]: sir_temporar = sir.split('#')

In [102]: sir_temporar

In [103]: sir_temporar[0] = sir_temporar[0].split(',')

In [104]: sir_temporar

In [105]: ' '.join(['mergem','la','scoala'])


In [106]: ','.join(['mergem','la','scoala'])


In [107]: ','.join(['mergem#','#la','#scoala#'])


In [108]: 1.join([1,2,3])



In [109]: '1'.join([1,2,3])


In [110]: print('astazi este {}'.format('vineri'))


In [111]: x = 'vineri'

In [112]: print('astazi este {}'.format(x))
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In [113]: print('x={}'.format(x))

In [114]: print(f'x={x}')

In [115]: print(f"x={x}")


In [116]: # f = format; r = raw

In [117]: # \n \b \r

In [118]: print('\n')



In [119]: print(f'\n')



In [120]: print(r'\n')
In [121]: print(r'\r')


In [122]: print(r'\b')


In [123]: print(f'\b')


In [124]: print(f'\r')


In [125]: # ana anamaria

In [126]: s = 'ana maria'

In [127]: s.find('ana')
Out[127]: 0

In [128]: s.find('maria')
Out[128]: 4

In [129]: import re

In [130]: pattern = re.compile('ana')

In [131]: rezultat = re.findall(s,pattern)

In [132]: rezultat = re.findall(pattern,s)

In [133]: rezultat
Out[133]: ['ana']

In [134]: s = 'ana mariana'

In [135]: rezultat
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In [136]: rezultat = re.findall(pattern,s)

In [137]: rezultat

In [138]: s = 'abcd'

In [139]: pattern = re.compile('a[bc]c[de]')

In [140]: s = 'abaccdacce'

In [141]: rezultat = re.findall(pattern,s)

In [142]: rezultat



In [144]: sir = 'The international standard recommends writing the date as year,
     ...:  then month, then the day: YYYY-MM-DD. So if both the Australian and A
     ...: merican used this, they would both write the date as 2019-02-03. Writi
     ...: ng the date this way avoids confusion by placing the year first. Much
     ...: of Asia uses this form when writing the date.'

In [145]: pattern = re.compile('[0-9][0-9][0-9][0-9]-[0-9][0-9]-[0-9][0-9]')

In [146]: result = re.findall(pattern,sir)

In [147]: result


In [148]: sir = 'Astazi 30/04/2021, prognoza meteo este OK. Maine 01/05/2021, va fi libe
     ...: r. Poimaine 02/05/2021 va fi iarasi liber, iar raspoimaine 03/05/2021, va fi s
     ...: arbatoare. Totodata, in anul 2000, s-au prabusit 2 avioane in new york.'

In [149]: result = re.findall(pattern,sir)

In [150]: result


In [151]: result = re.findall(pattern,sir)

In [152]: pattern = re.compile('[0-9][0-9]/[0-9][0-9]/[0-9][0-9][0-9][0-9]')


In [153]: result = re.findall(pattern,sir)

In [154]: result


In [155]: text_UVT = 'puteti sa ne contactati la adresa de email companie@stat.ro, acolo
     ...:  ne gasiti si personalul. email-ul particular este melinda@private.ro'

In [156]: pattern = re.compile('\w@')

In [157]: result = re.findall(pattern,text_UVT)

In [158]: result
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In [159]: pattern = re.compile('\w+@')

In [160]: result = re.findall(pattern,text_UVT)

In [161]: result


In [162]: pattern = re.compile('\w+@\w+.ro')

In [163]: result = re.findall(pattern,text_UVT)

In [164]: result
```