UMIT KILINC

101232721

```
In [1]: import math

In [2]: math.sin(2)
Out[2]: 0.9092974268256817

In [3]: math.cos(3)
Out[3]: -0.9899924966004454

In [4]: print(In)
['', 'import math', 'math.sin(2)', 'math.cos(3)', 'print(In)']

In [5]: print(out)
---------------------------------------------------------------------
NameError                                Traceback (most recent call last)
Input In [5], in <cell line: 1>()
----> 1 print(out)

NameError: name 'out' is not defined

In [6]: print(Out)
{2: 0.9092974268256817, 3: -0.9899924966004454}

In [7]: print(In[1])
import math

In [8]:
```

```
In [9]: print(_)
1.806906953756989

In [10]: print(__)
-0.9899924966004454

In [11]: print(___)
0.9092974268256817

In [12]: print(____)
---------------------------------------------------------------
NameError                               Traceback (most recent call last)
Input In [12], in <cell line: 1>()
----> 1 print(____)

NameError: name '____' is not defined

In [13]: print(_2)
0.9092974268256817

In [14]: Out[2]
Out[14]: 0.9092974268256817

In [15]: _2
Out[15]: 0.9092974268256817

In [16]: math.sin(2) + math.cos(2);

In [17]: math.sin(2) + math.cos(2)
Out[17]: 0.4931505902785393

In [18]: print(Out)
{2: 0.9092974268256817, 3: -0.9899924966004454, 8: 1.806906953756989, 14: 0.9092974268256817, 15: 0.9092974268256817, 17: 0.4931505902785393}

In [19]: 18 in Out
Out[19]: False

In [20]: 17 in Out
Out[20]: True
```

```
In [30]: !cd ..
D:\anaconda\lib\site-packages\IPython\core\interactiveshell.py:2468: UserWarning: You executed the system command !cd which may not work as expected. Try the IPython magic %cd instead.
  warnings.warn(

In [31]: %cd
C:\Users\umitk

In [32]: %cd ..
C:\Users

In [33]: dir
Out[33]: <function dir>

In [34]:

In [34]: ls
 Volume in drive C has no label.
 Volume Serial Number is 844E-6A04

 Directory of C:\Users

2021-12-29  08:02 PM    <DIR>          .
2021-12-29  08:02 PM    <DIR>          ..
2021-12-29  10:38 PM    <DIR>          Public
2022-09-12  10:05 PM    <DIR>          umitk
               0 File(s)              0 bytes
               4 Dir(s)  16,337,874,944 bytes free

In [35]: cd umitk/
C:\Users\umitk

In [36]:
```

```
In [36]: cd
C:\Users\umitk

In [37]: %cd
C:\Users\umitk

In [38]: %automagic

Automagic is OFF, % prefix IS needed for line magics.

In [39]: %automagic

Automagic is ON, % prefix IS NOT needed for line magics.

In [40]: %automagic

Automagic is OFF, % prefix IS needed for line magics.

In [41]: cd
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Input In [41], in <cell line: 1>()
----> 1 cd

NameError: name 'cd' is not defined

In [42]: %automagic

Automagic is ON, % prefix IS NOT needed for line magics.

In [43]:
```

```
In [46]: content=!dir

In [47]: print(content)
[' Volume in drive C has no label.', ' Volume Serial Number is 844E-6A04', '', ' Directory of C:\\Users\\umitk', '', '2022-09-12  10:05 PM    <DIR>          .', '2022-09-12  10:05 PM    <DIR>          ..', '2022
-09-14  12:41 PM    <DIR>          .android', '2022-09-20  09:46 AM             9,145 .bash_history', '2022-02-22  11:18 AM    <DIR>          .config', '2022-09-05  02:38 PM    <DIR>          .dotnet', '2022-09-
12  10:05 PM                16 .emulator_console_auth_token', '2022-04-19  01:11 PM               112 .gitconfig', '2022-09-12  08:31 PM    <DIR>          .gradle', '2021-01-11  02:39 PM    <DIR>          .idler
c', '2022-01-11  01:33 PM    <DIR>          .ipython', '2022-02-26  11:37 PM                20 .lesshst', '2022-01-31  09:30 AM    <DIR>          .librarymanager', '2022-09-20  08:12 AM    <DIR>          .m2', '
2022-01-10  11:39 AM    <DIR>          .nbi', '2022-09-14  06:26 PM                56 .node_repl_history', '2022-01-24  09:54 AM    <DIR>          .nuget', '2022-02-13  11:01 AM    <DIR>          .ssh', '2022-01
-13  06:41 PM    <DIR>          .templateengine', '2022-02-26  11:43 PM             1,953 .viminfo', '2021-12-29  08:13 PM    <DIR>          .vscode', '2021-12-29  07:45 PM    <DIR>          3D Objects', '2022-0
1-01  04:28 PM    <DIR>          ansel', '2022-01-11  01:34 PM    <DIR>          cd', '2021-12-29  07:45 PM    <DIR>          Contacts', '2022-01-31  11:02 AM         8,388,608 Contacts.mdf', '2022-01-31  11:02
AM         8,388,608 Contacts_log.ldf', '2022-09-14  01:10 PM    <DIR>          Desktop', '2022-09-20  08:31 AM    <DIR>          Documents', '2022-09-20  07:52 AM    <DIR>          Downloads', '2021-12-29  07:4
5 PM    <DIR>          Favorites', '2022-04-11  10:59 PM         8,388,608 GBCContext-4d1599c6-10f0-430d-b0e8-26bad65d8769.mdf', '2022-04-11  10:59 PM         8,388,608 GBCContext-4d1599c6-10f0-430d-b0e8-26bad65
d8769_log.ldf', '2022-04-07  05:44 PM         8,388,608 GBCContext-9f646ccd-0955-46c3-a921-5986b2f6ceda.mdf', '2022-04-07  05:44 PM         8,388,608 GBCContext-9f646ccd-0955-46c3-a921-5986b2f6ceda_log.ldf', '20
22-02-13  04:22 PM         8,388,608 GBCContext-dd3f2817-c746-4552-ab9c-8acb869c1650.mdf', '2022-02-13  04:22 PM         8,388,608 GBCContext-dd3f2817-c746-4552-ab9c-8acb869c1650_log.ldf', '2022-04-07  12:53 PM
         8,388,608 GBCContext-de174420-ce5c-4a45-8433-fcc871206b77.mdf', '2022-04-07  12:53 PM         8,388,608 GBCContext-de174420-ce5c-4a45-8433-fcc871206b77_log.ldf', '2022-01-11  01:34 PM    <DIR>          h
ello', '2021-12-29  07:45 PM    <DIR>          Links', '2022-02-07  09:33 AM         8,388,608 Movies.mdf', '2022-02-07  09:33 AM         8,388,608 Movies_log.ldf', '2021-12-29  07:45 PM    <DIR>          Music'
, '2022-02-13  01:43 PM         8,388,608 MvcMovieContext-f997e273-0e30-4ea4-acb1-cf2b9aa00e5d.mdf', '2022-02-13  01:43 PM         8,388,608 MvcMovieContext-f997e273-0e30-4ea4-acb1-cf2b9aa00e5d_log.ldf', '2022-0
1-11  01:34 PM                 0 newJavaFile.java', '2022-04-28  12:34 PM    <DIR>          OneDrive', '2021-12-29  07:47 PM    <DIR>          Pictures', '2021-12-29  07:45 PM    <DIR>          Saved Games', '20
21-12-29  07:46 PM    <DIR>          Searches', '2022-01-13  06:40 PM    <DIR>          source', '2022-02-27  11:07 PM         8,388,608 SportsAppContext-98a82361-db63-44b8-a641-0f30ae1cf576.mdf', '2022-02-27  1
1:07 PM         8,388,608 SportsAppContext-98a82361-db63-44b8-a641-0f30ae1cf576_log.ldf', '2022-02-13  09:15 PM         8,388,608 SportsContext-b9d74443-eb56-4485-af72-50cfd02f2538.mdf', '2022-02-13  09:15 PM
         8,388,608 SportsContext-b9d74443-eb56-4485-af72-50cfd02f2538_log.ldf', '2022-02-06  01:10 PM    <DIR>          test', '2022-09-14  05:53 PM    <DIR>          Videos', '               25 File(s)    151,006,2
46 bytes', '               33 Dir(s)  16,322,961,408 bytes free']

In [48]: directory=!cd

In [49]: print(directory)
['C:\\Users\\umitk']
```

```
In [61]: def func1(a,b)
  Input In [61]
    def func1(a,b)
                  ^
SyntaxError: invalid syntax


In [62]: def func1(a,b):
   ...:      return a/b
   ...:

In [63]: def func2(x):
   ...:      a = x
   ...:      b = x - 1
   ...:      return func1(a,b)
   ...:

In [64]: func2(1)
---------------------------------------------------------------------------
ZeroDivisionError                      Traceback (most recent call last)
Input In [64], in <cell line: 1>()
----> 1 func2(1)

Input In [63], in func2(x)
      2 a = x
      3 b = x - 1
----> 4 return func1(a,b)

Input In [62], in func1(a, b)
      1 def func1(a,b):
----> 2     return a/b

ZeroDivisionError: division by zero

In [65]: func2(0)
Out[65]: -0.0

In [66]: func2(5)
Out[66]: 1.25

In [67]:
```

```
In [73]: %debug
> <ipython-input-62-68225868ec77>(2)func1()
      1 def func1(a,b):
----> 2     return a/b
      3

ipdb>
ipdb>
ipdb> i
*** NameError: name 'i' is not defined
ipdb> ipython
*** NameError: name 'ipython' is not defined
ipdb> print(a)
1
ipdb> print(b)
0
ipdb> p(a)
1
ipdb> a
a = 1
b = 0
ipdb> b
ipdb> print(a/b)
*** ZeroDivisionError: division by zero
ipdb> quit

In [74]:
```

```
In [4]: def sum_of_lists(N):
   ...:     total = 0
   ...:     for i in range(5):
   ...:         L = [j ^ (j >> i) for j in range(N)]
   ...:         total += sum(L)
   ...:     return total
   ...:

In [5]: %load_ext line_profiler
The line_profiler extension is already loaded. To reload it, use:
  %reload_ext line_profiler

In [6]: %lprun -f sum_of_lists sum_of_lists(5000)
Timer unit: 1e-07 s

Total time: 0.0086095 s
File: <ipython-input-4-c8a2c5fe2cd3>
Function: sum_of_lists at line 1

Line #      Hits         Time  Per Hit   % Time  Line Contents
==============================================================
     1                                           def sum_of_lists(N):
     2         1         24.0     24.0      0.0      total = 0
     3         6         77.0     12.8      0.1      for i in range(5):
     4         5      83071.0  16614.2     96.5          L = [j ^ (j >> i) for j in range(N)]
     5         5       2916.0    583.2      3.4          total += sum(L)
     6         1          7.0      7.0      0.0      return total
```