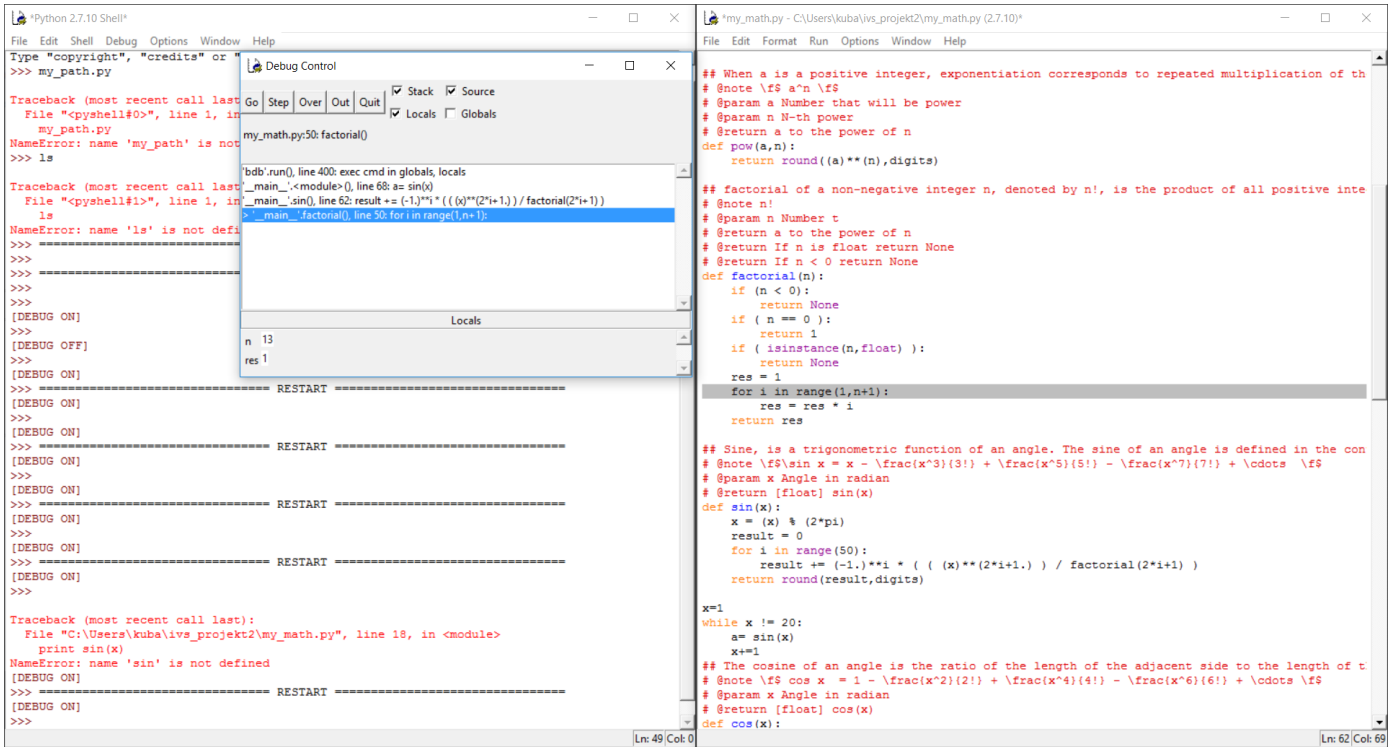
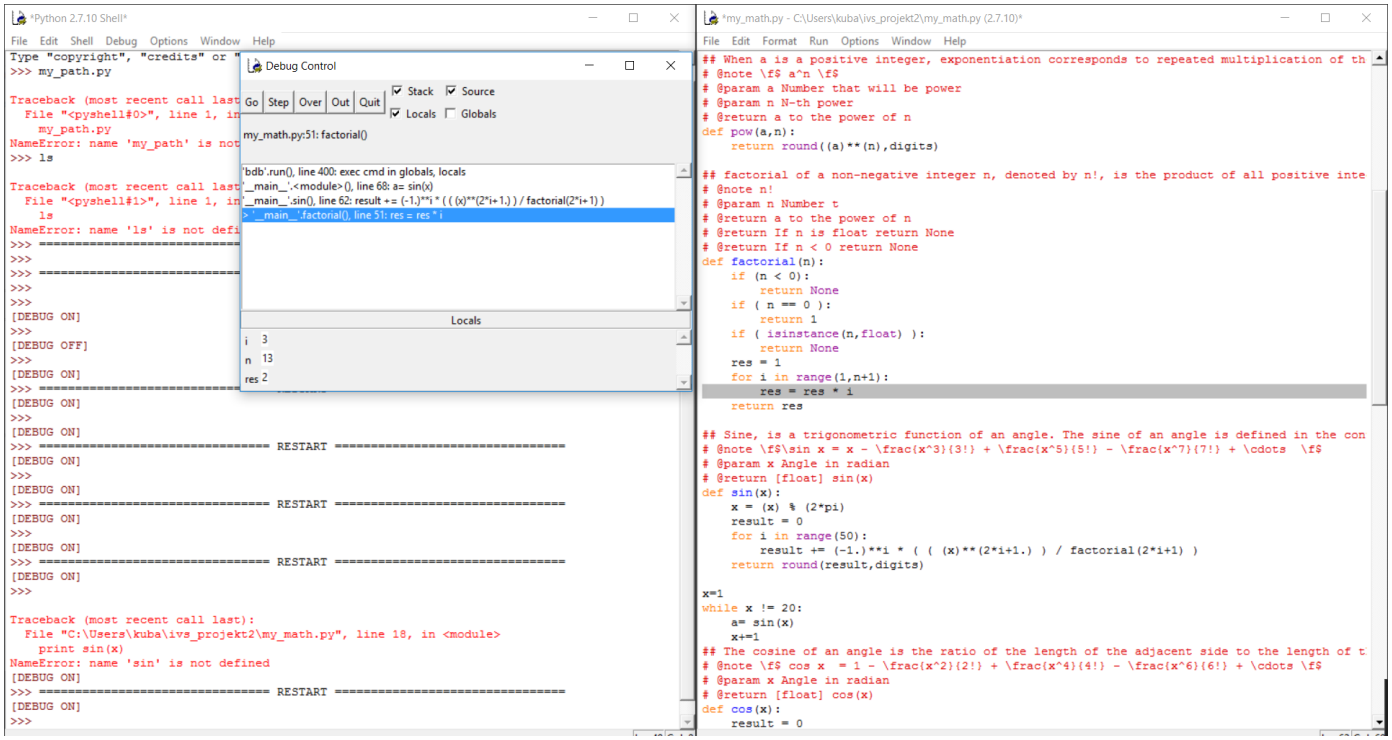
1 Debugging

In these pictures, we can see debugging factorial function.




Python 2.7.10 Shell
File Edit Shell Debug Options Window Help
Type "copyright", "credits" or "
>>> my_path.py
Traceback (most recent call last
File "<pyshell#0>", line 1, in
my_path.py
NameError: name 'my_path' is not
>>> ls
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[DEBUG ON]
[DEBUG OFF]
[DEBUG ON]
[DEBUG ON]
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Traceback (most recent call last):
File "C:\Users\kuba\ivs_projekt2\my_math.py", line 18, in <module>
print sin(x)
NameError: name 'sin' is not defined
[DEBUG ON]
Debug Control
Go Step Over Out Quit
Stack Source
Locals Globals
my_math.py:51: factorial()
'bdb'.run(), line 400: exec cmd in globals, locals
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Locals
i 3
n 13
res 2
my_math.py - C:\Users\kuba\ivs_projekt2\my_math.py (2.7.10)
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When a is a positive integer, exponentiation corresponds to repeated multiplication of th
# @note \f$ a^n \f$
# @param a Number that will be power
# @param n N-th power
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def pow(a,n):
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factorial of a non-negative integer n, denoted by n!, is the product of all positive inte
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def factorial(n):
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if (n == 0):
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res = 1
for i in range(1,n+1):
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Sine, is a trigonometric function of an angle. The sine of an angle is defined in the con
# @note \f$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots \f$
# @param x Angle in radian
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def sin(x):
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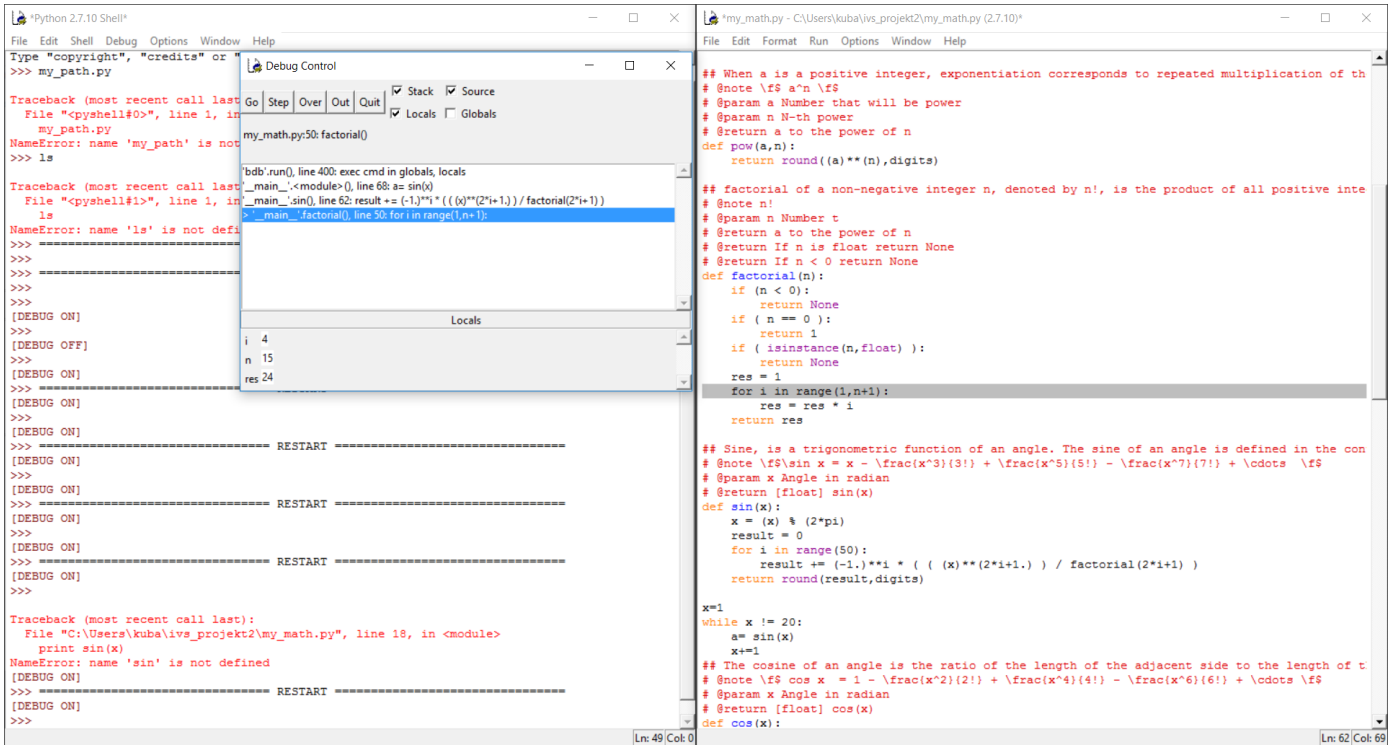
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Locals
i 4
n 15
res 24
Ln: 49 Col: 0
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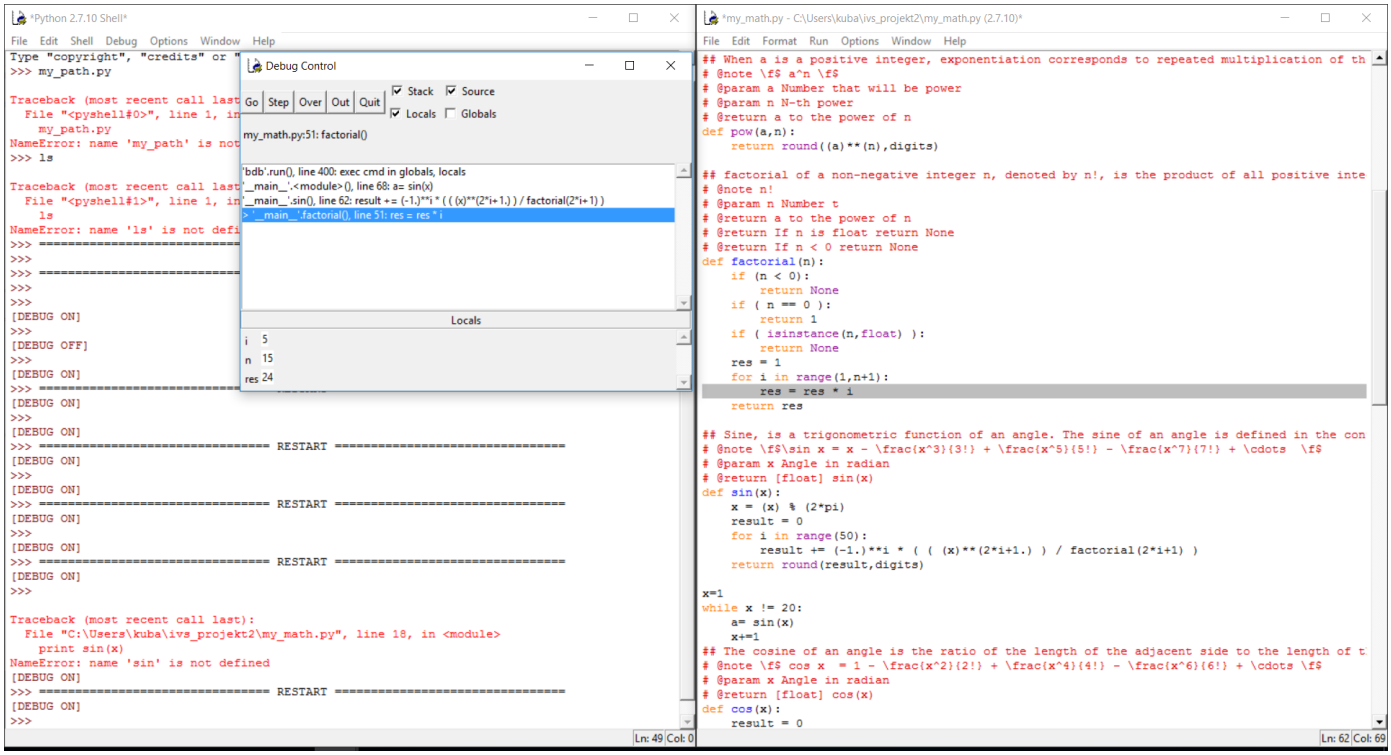
Ln: 62 Col: 69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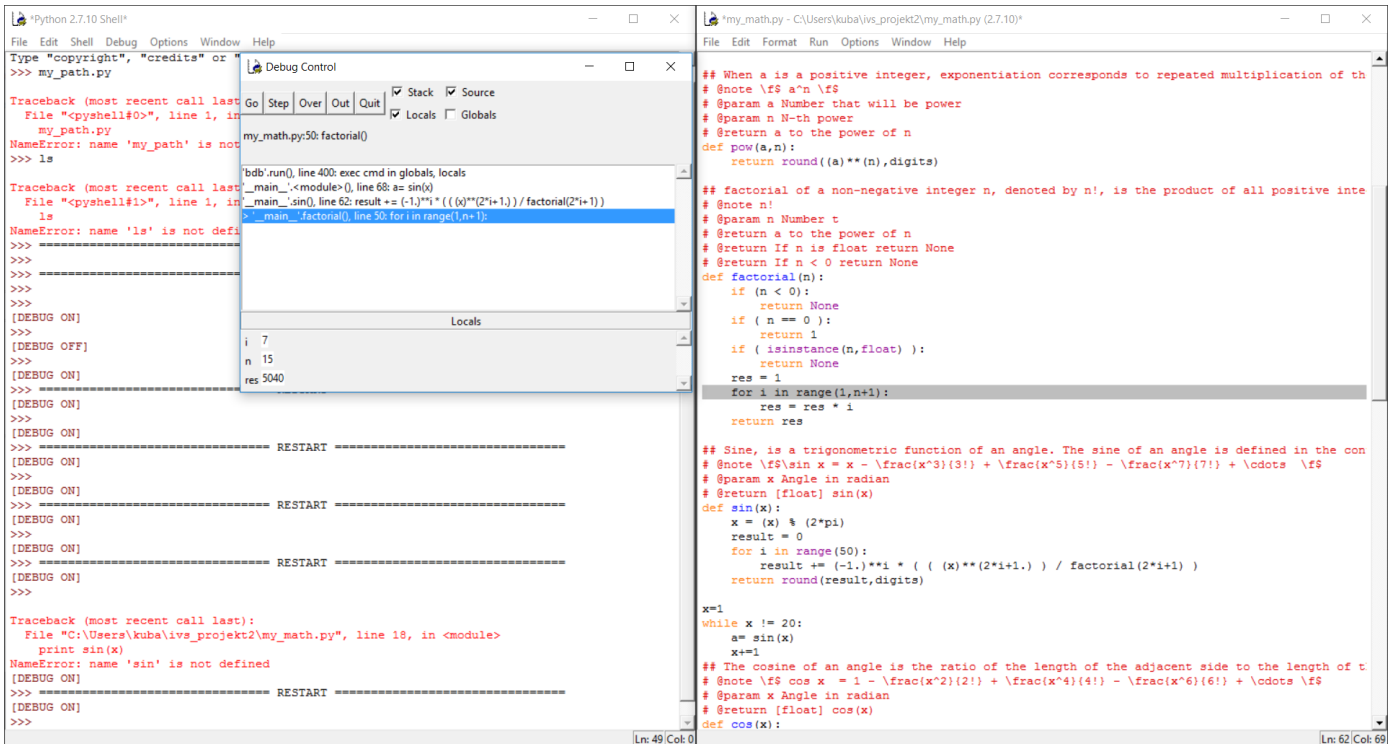
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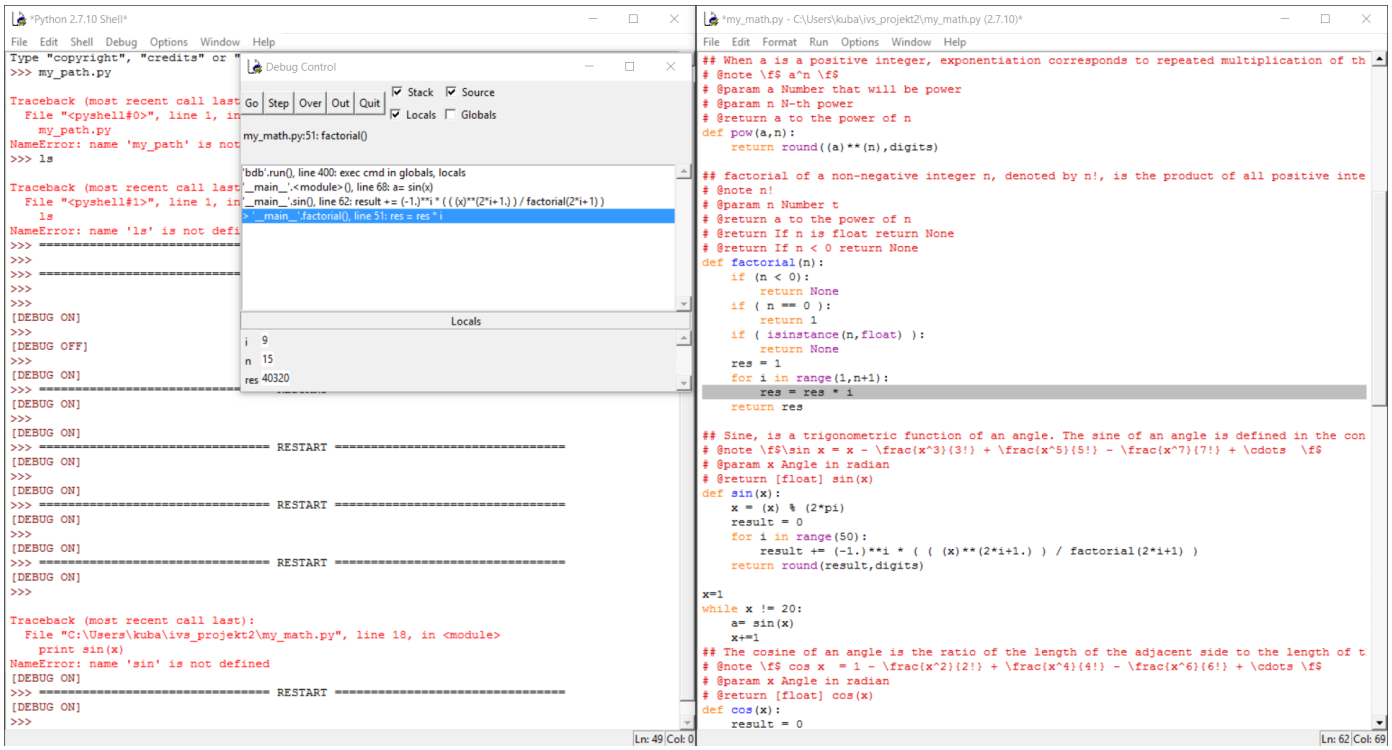
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Locals
i 9
n 15
res 40320
RESTART
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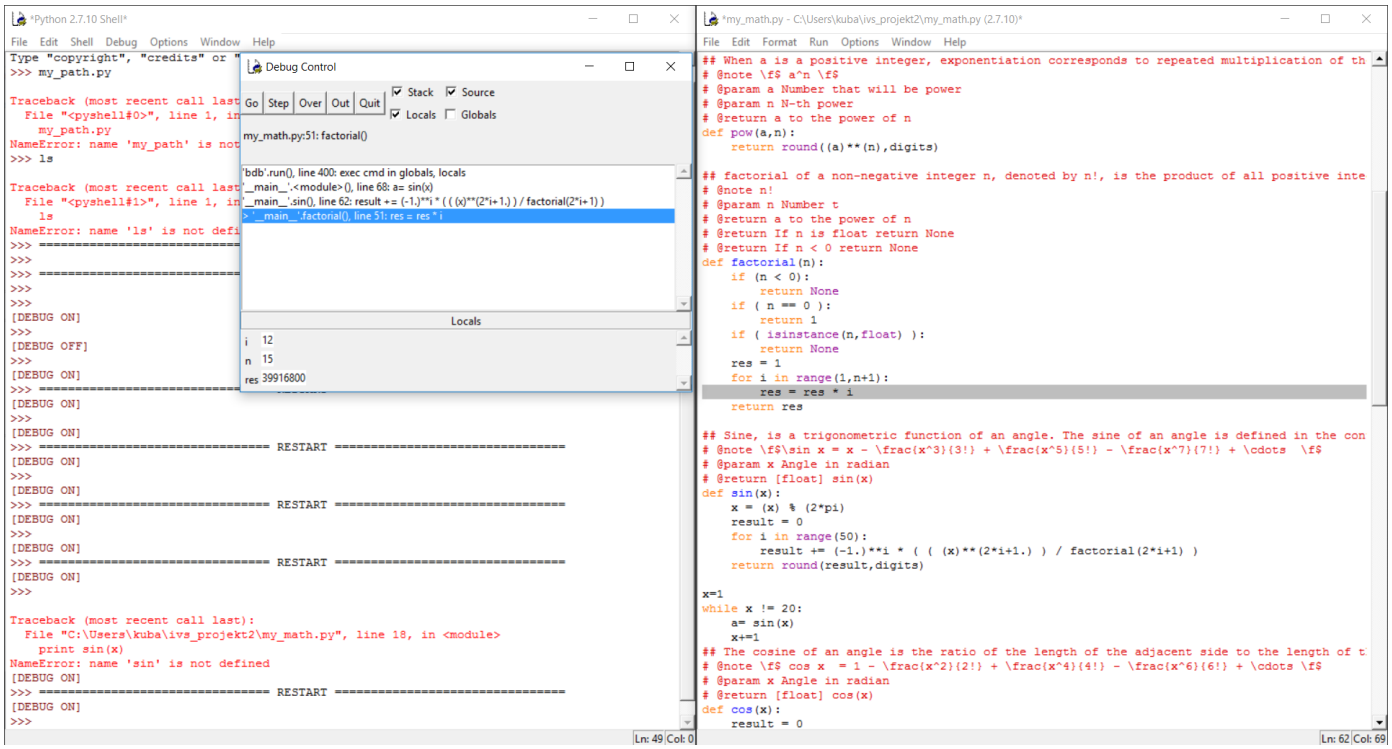
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i 12
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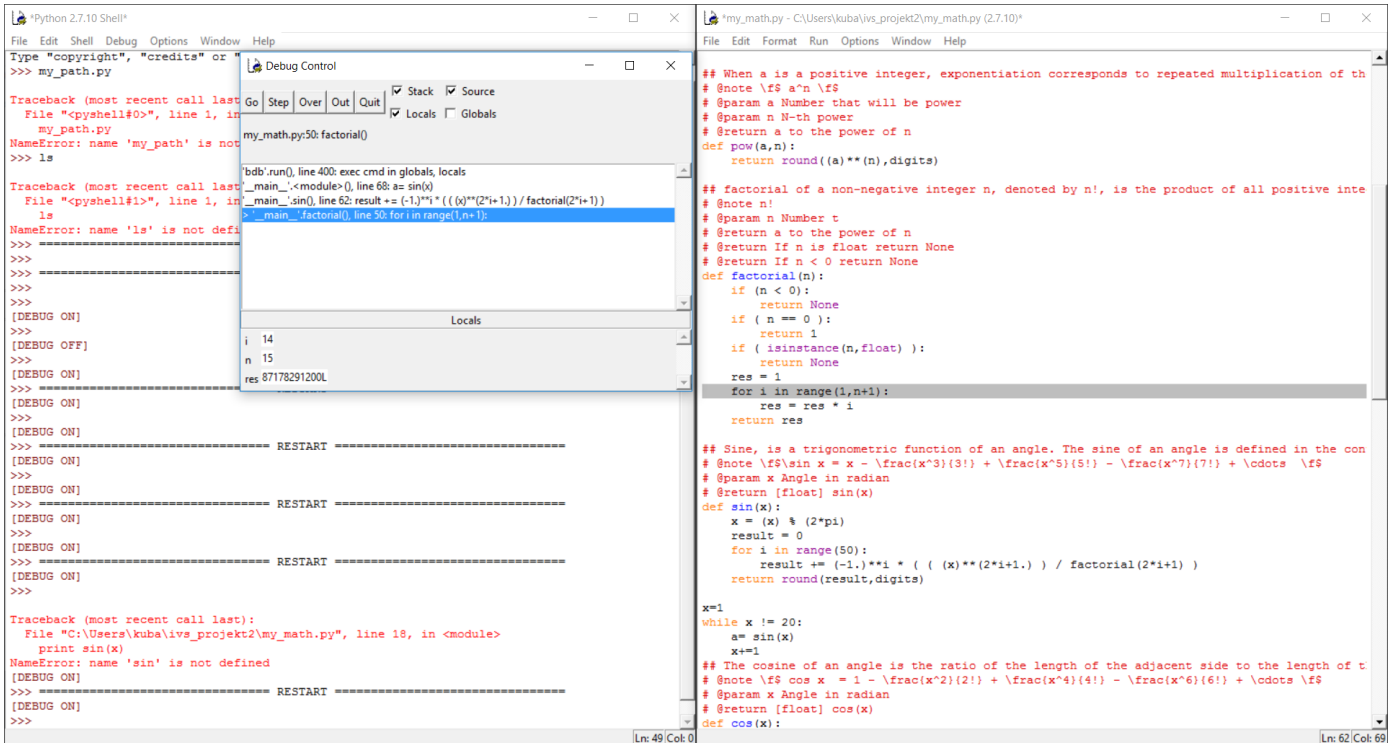
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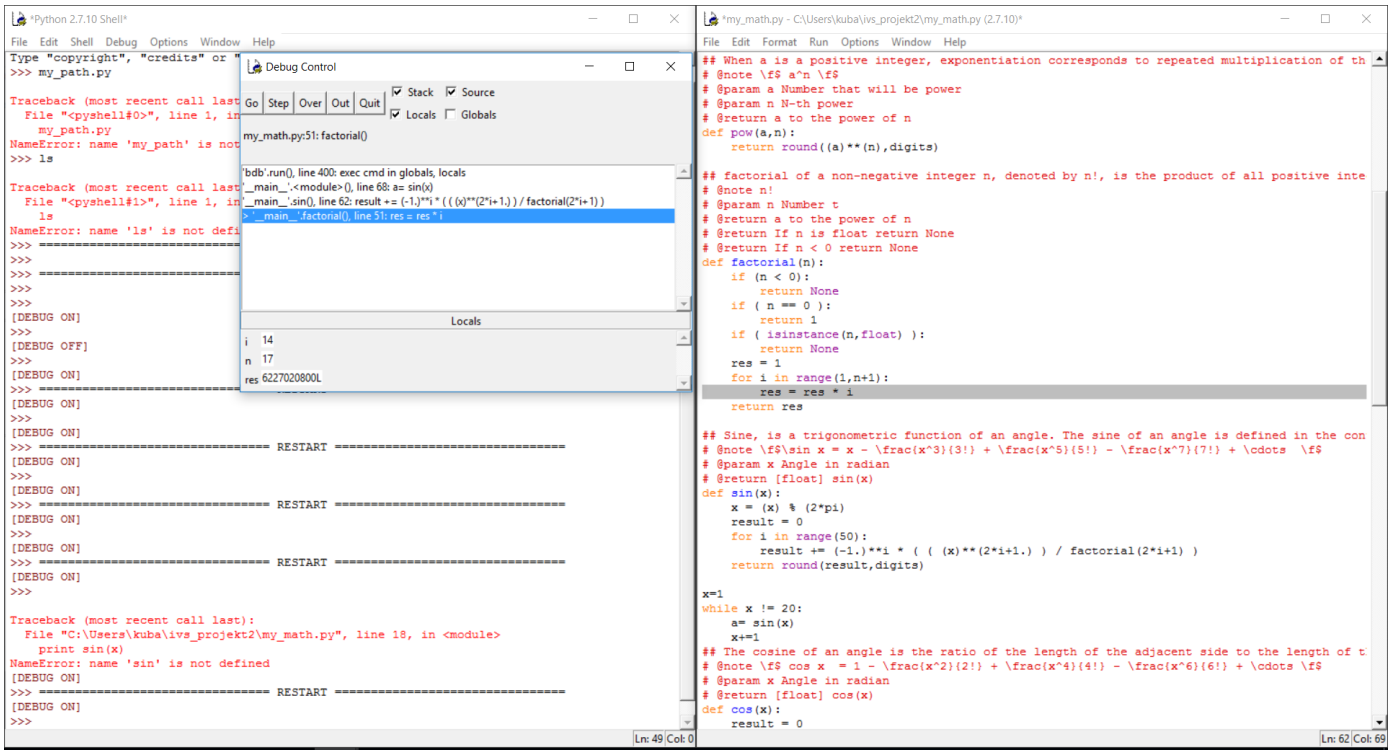
# @note \f$ cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \cdots \f$
# @param x Angle in radian
# @return [float] cos(x)
def cos(x):
Ln: 62 Col: 69


Python 2.7.10 Shell
File Edit Shell Debug Options Window Help
Type "copyright", "credits" or "
>>> my_path.py
Traceback (most recent call last
File "<pyshell#0>", line 1, in
my_path.py
NameError: name 'my_path' is not
>>> ls
Traceback (most recent call last
File "<pyshell#1>", line 1, in
ls
NameError: name 'ls' is not defi
>>> ==========
>>>
>>> ==========
>>>
>>>
[DEBUG ON]
>>>
[DEBUG OFF]
>>>
[DEBUG ON]
>>> ==========
[DEBUG ON]
>>>
[DEBUG ON]
>>> ========== RESTART ==========
[DEBUG ON]
>>>
[DEBUG ON]
>>> ========== RESTART ==========
[DEBUG ON]
>>>
[DEBUG ON]
>>> ========== RESTART ==========
[DEBUG ON]
>>>
Traceback (most recent call last):
File "C:\Users\kuba\ivs_projekt2\my_math.py", line 18, in <module>
print sin(x)
NameError: name 'sin' is not defined
[DEBUG ON]
>>> ========== RESTART ==========
[DEBUG ON]
>>>
Ln: 49 Col: 0
Debug Control
Go Step Over Out Quit
Stack Source
Locals Globals
my_math.py:51: factorial()
'bdb'.run(), line 400: exec cmd in globals, locals
'__main__'.<module>(), line 68: a= sin(x)
'__main__'.sin(), line 62: result += (-1.)**i * (((x)**(2*i+1.)) / factorial(2*i+1))
> '__main__'.factorial(), line 51: res = res * i
Locals
i 14
n 17
res 6227020800L
my_math.py - C:\Users\kuba\ivs_projekt2\my_math.py (2.7.10)
File Edit Format Run Options Window Help
When a is a positive integer, exponentiation corresponds to repeated multiplication of th
# @note \f$ a^n \f$
# @param a Number that will be power
# @param n N-th power
# @return a to the power of n
def pow(a,n):
return round((a)**(n),digits)
factorial of a non-negative integer n, denoted by n!, is the product of all positive inte
# @note n!
# @param n Number t
# @return a to the power of n
# @return If n is float return None
# @return If n < 0 return None
def factorial(n):
if (n < 0):
return None
if (n == 0):
return 1
if (isinstance(n,float)):
return None
res = 1
for i in range(1,n+1):
res = res * i
return res
Sine, is a trigonometric function of an angle. The sine of an angle is defined in the con
# @note \f$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots \f$
# @param x Angle in radian
# @return [float] sin(x)
def sin(x):
x = (x) % (2*pi)
result = 0
for i in range(50):
result += (-1.)**i * (((x)**(2*i+1.)) / factorial(2*i+1))
return round(result,digits)
x=1
while x != 20:
a= sin(x)
x+=1
The cosine of an angle is the ratio of the length of the adjacent side to the length of t
# @note \f$ cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \cdots \f$
# @param x Angle in radian
# @return [float] cos(x)
def cos(x):
result = 0
Ln: 62 Col: 69