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Interpolation Polynomial with Python

Contoh Input/Output
Format input:

```
n-1
x1 y1
x2 y2
...
xn-1 yn-1
xn yn
```

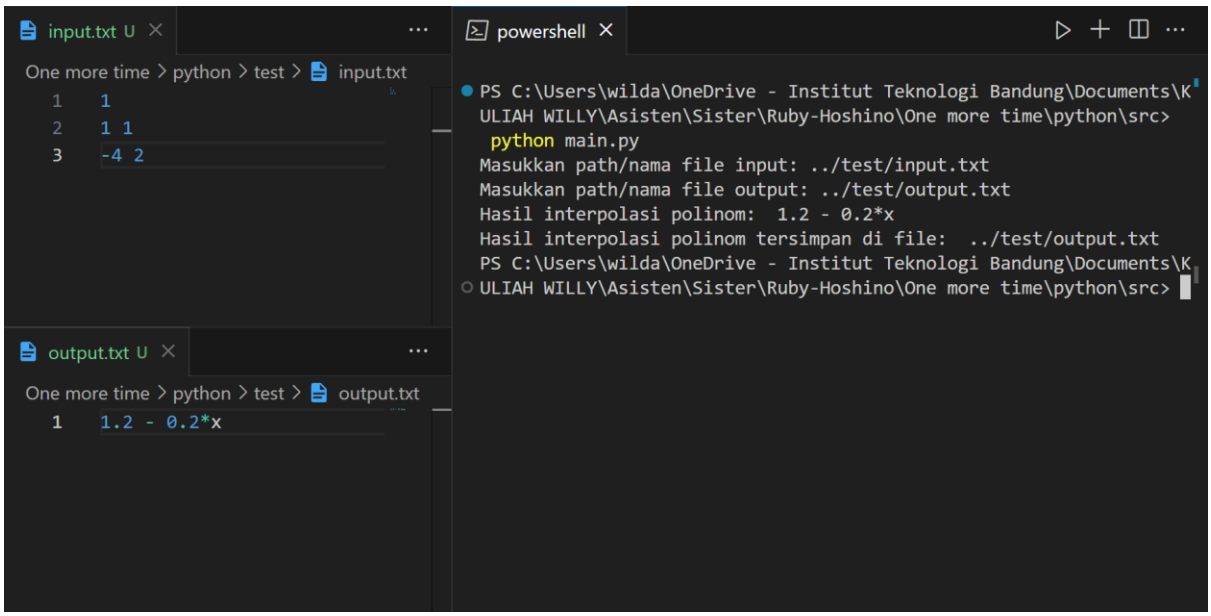
Format output:

```
ax**n + bx**n-1 + ... + px + q
```

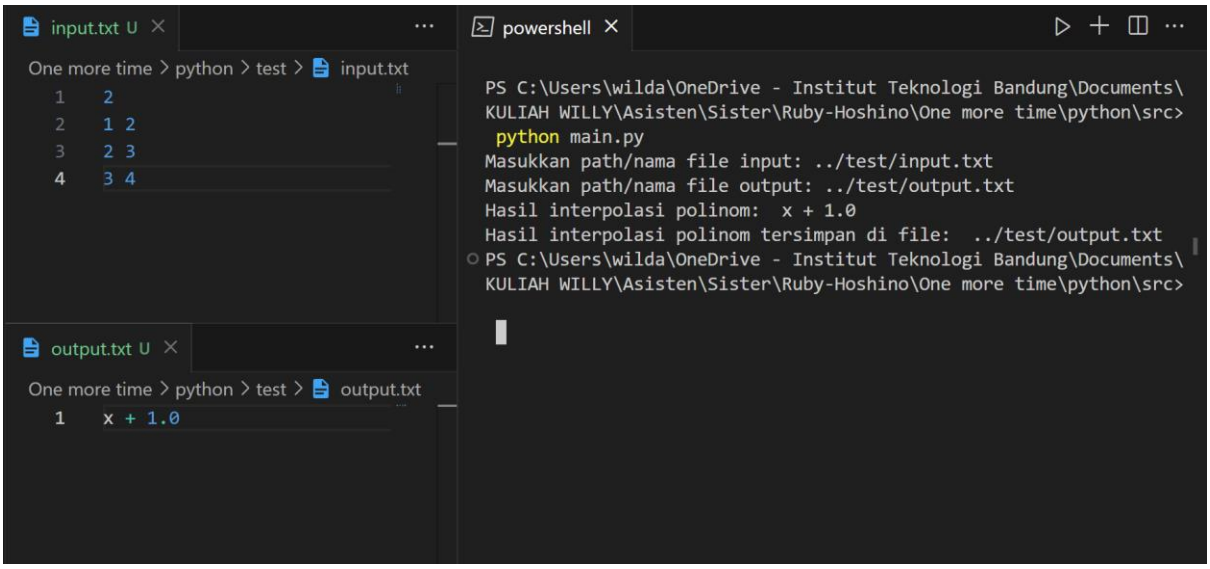
yang berarti y = `ax**n + bx**n-1 + ... + px + q`
dengan ** merupakan pangkat yang berarti ax**n = ax^n

N = n – 1

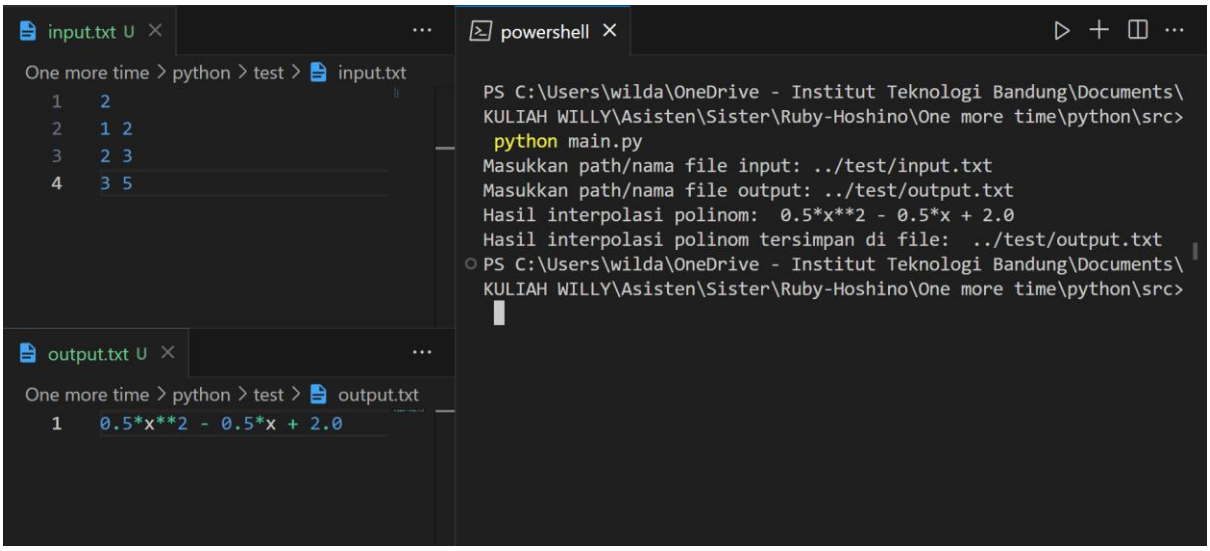
1. N = 1



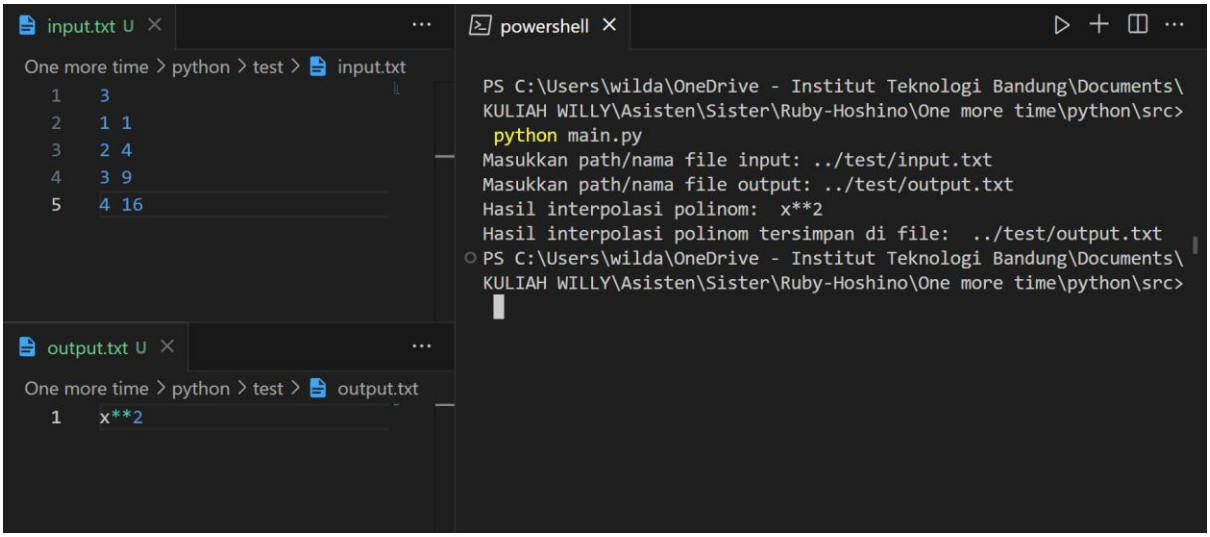
2. N = 2


input.txt U
One more time > python > test > input.txt
1 2
2 1 2
3 2 3
4 3 4
output.txt U
One more time > python > test > output.txt
1 x + 1.0
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: x + 1.0
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>

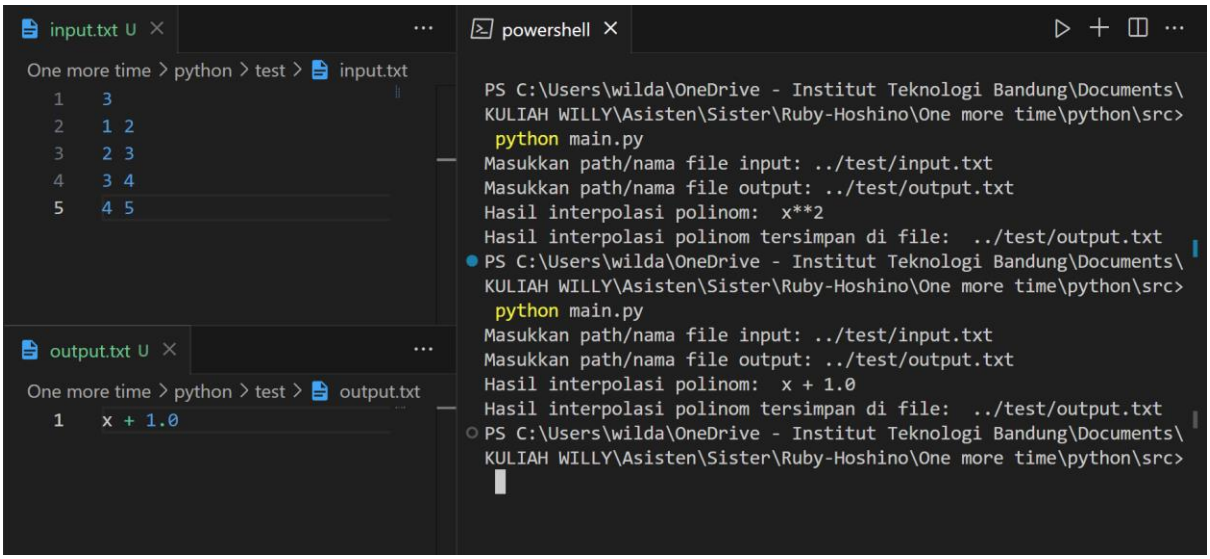
3. N = 2


input.txt U
One more time > python > test > input.txt
1 2
2 1 2
3 2 3
4 3 5
output.txt U
One more time > python > test > output.txt
1 0.5*x**2 - 0.5*x + 2.0
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: 0.5*x**2 - 0.5*x + 2.0
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>

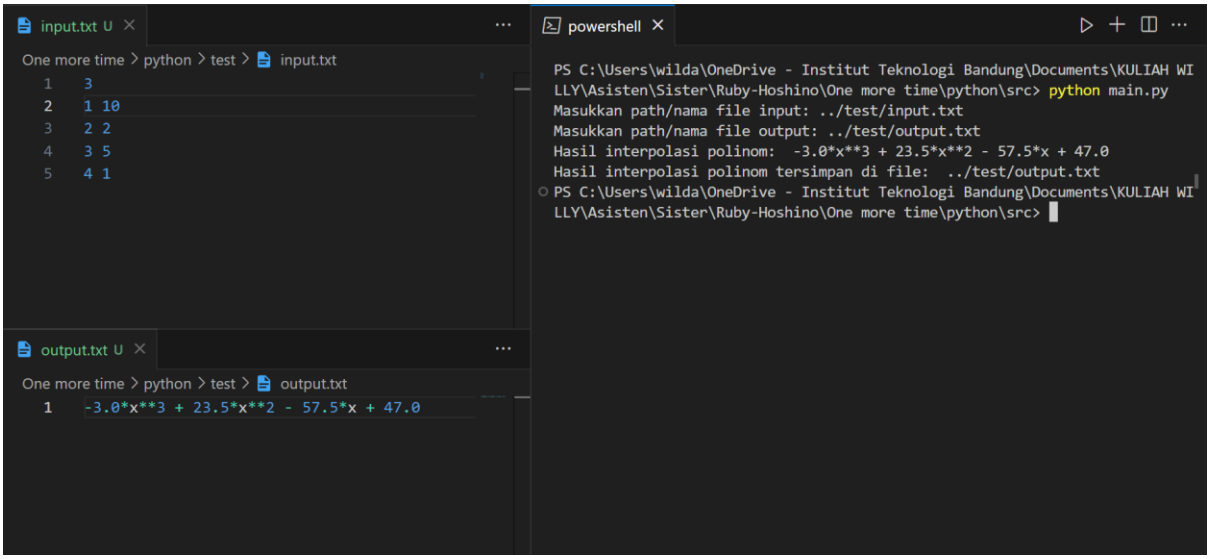
4. N = 3


input.txt U
One more time > python > test > input.txt
1 3
2 1 1
3 2 4
4 3 9
5 4 16
output.txt U
One more time > python > test > output.txt
1 x**2
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: x**2
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>

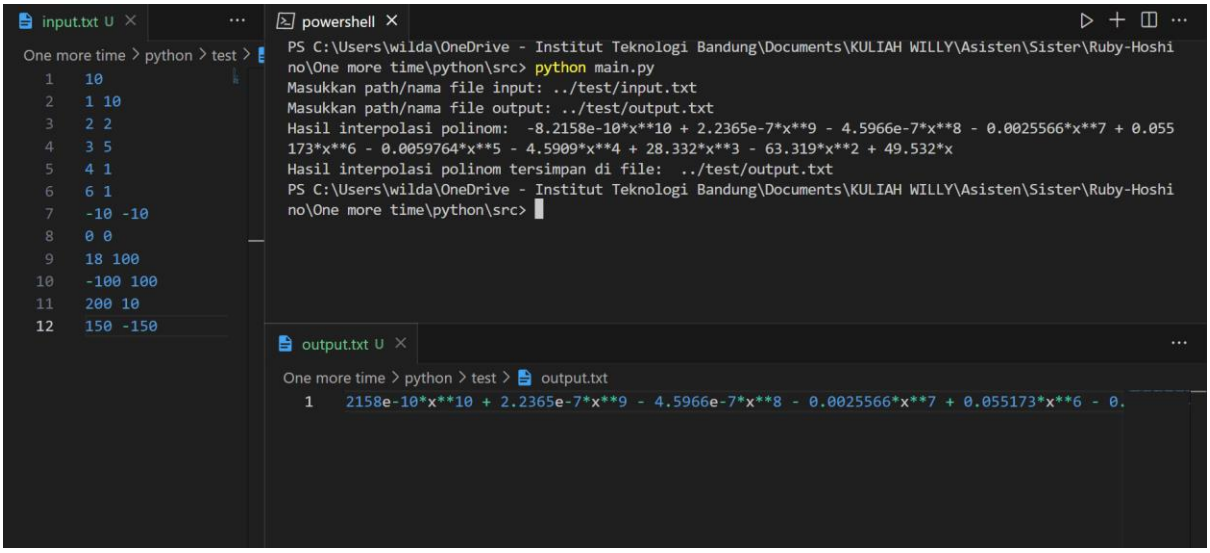
5. N = 3


input.txt U
One more time > python > test > input.txt
3
1 2
2 3
3 4
4 5
output.txt U
One more time > python > test > output.txt
x + 1.0
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: x**2
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: x + 1.0
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>

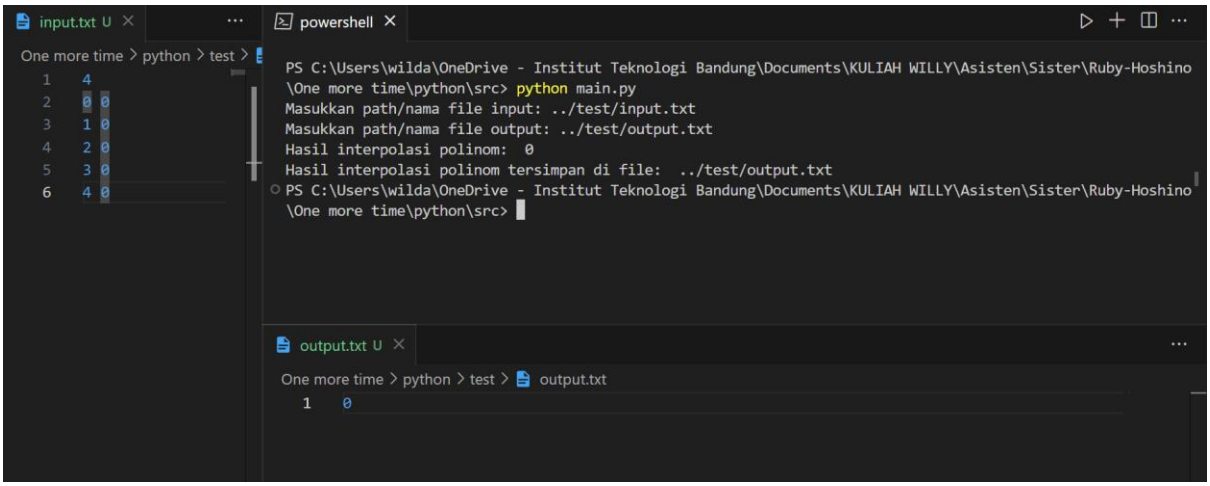
6. N = 3


input.txt U
One more time > python > test > input.txt
3
1 10
2 2
3 5
4 1
output.txt U
One more time > python > test > output.txt
-3.0*x**3 + 23.5*x**2 - 57.5*x + 47.0
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: -3.0*x**3 + 23.5*x**2 - 57.5*x + 47.0
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>

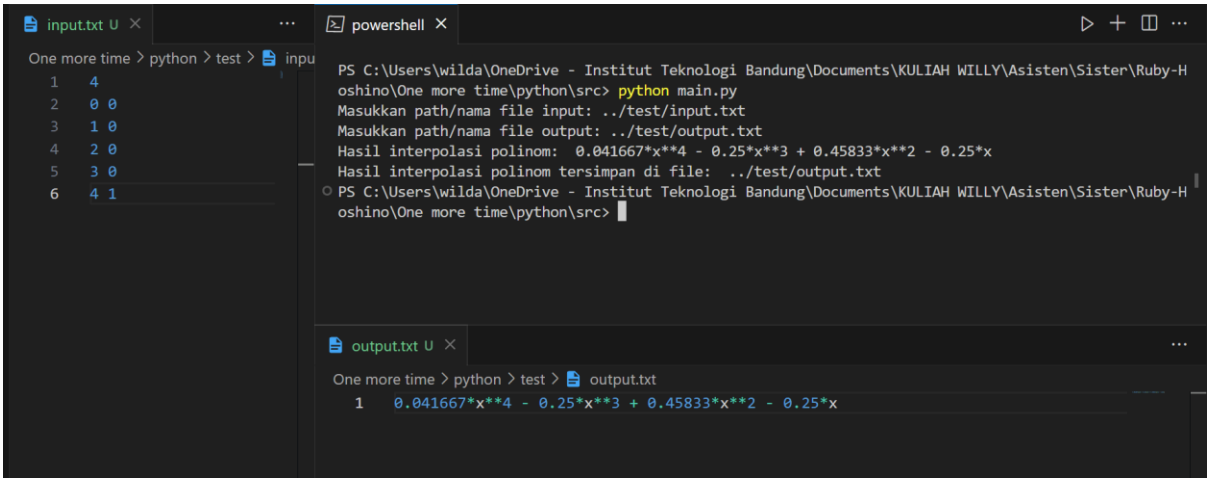
7. N = 10


input.txt U
One more time > python > test >
10
1 10
2 2
3 5
4 1
6 1
-10 -10
0 0
18 100
-100 100
200 10
150 -150
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: -8.2158e-10*x**10 + 2.2365e-7*x**9 - 4.5966e-7*x**8 - 0.0025566*x**7 + 0.055173*x**6 - 0.0059764*x**5 - 4.5909*x**4 + 28.332*x**3 - 63.319*x**2 + 49.532*x
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>
output.txt U
One more time > python > test > output.txt
2158e-10*x**10 + 2.2365e-7*x**9 - 4.5966e-7*x**8 - 0.0025566*x**7 + 0.055173*x**6 - 0.

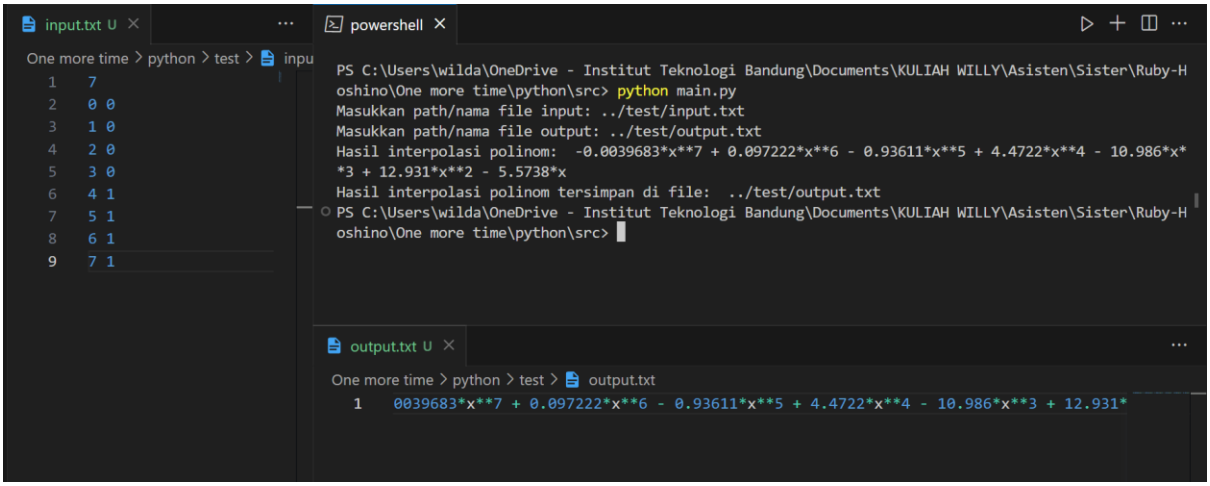
8. N = 4


input.txt U
One more time > python > test >
4
0 0
1 0
2 0
3 0
4 0
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: 0
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>
output.txt U
One more time > python > test > output.txt
0

9. N = 4


input.txt U
One more time > python > test > inpu
4
0 0
1 0
2 0
3 0
4 1
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: 0.041667*x**4 - 0.25*x**3 + 0.45833*x**2 - 0.25*x
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>
output.txt U
One more time > python > test > output.txt
0.041667*x**4 - 0.25*x**3 + 0.45833*x**2 - 0.25*x

10. N = 7


input.txt U
One more time > python > test > inpu
7
0 0
1 0
2 0
3 0
4 1
5 1
6 1
7 1
powershell
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src> python main.py
Masukkan path/nama file input: ../test/input.txt
Masukkan path/nama file output: ../test/output.txt
Hasil interpolasi polinom: -0.0039683*x**7 + 0.097222*x**6 - 0.93611*x**5 + 4.4722*x**4 - 10.986*x**3 + 12.931*x**2 - 5.5738*x
Hasil interpolasi polinom tersimpan di file: ../test/output.txt
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\python\src>
output.txt U
One more time > python > test > output.txt
0039683*x**7 + 0.097222*x**6 - 0.93611*x**5 + 4.4722*x**4 - 10.986*x**3 + 12.931*