

Nama : Hidayatullah Wildan Ghaly B.

NIM : 13521015

## Interpolation Polynomial with Ruby

Contoh Input/Output

Format input:

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

Format output:

```
a + b + ... + p + q
```

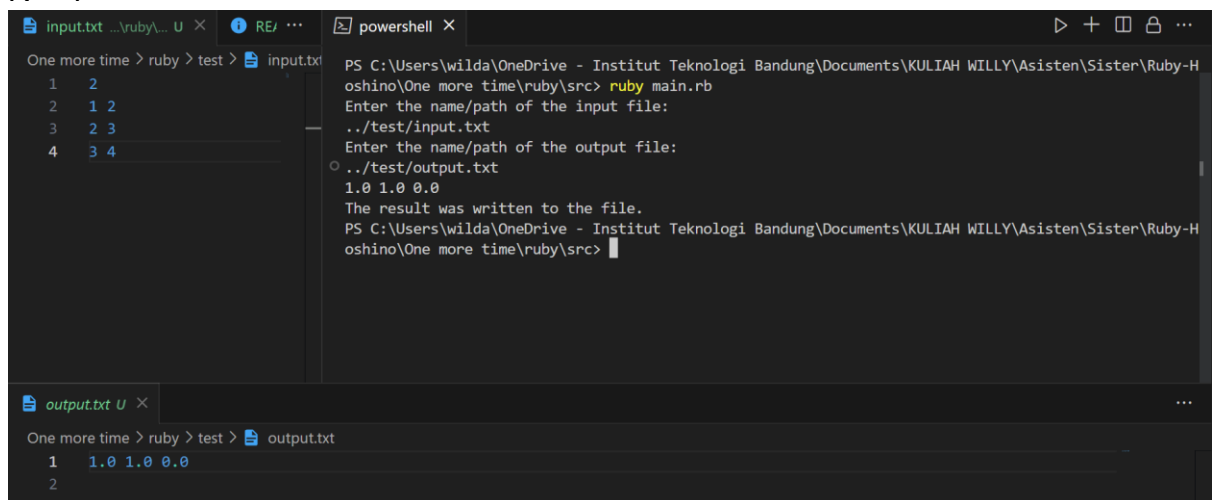
yang berarti  $y = qx^n + px^{n-1} + \dots + bx + a$

dengan  $^n$  merupakan pangkat yang berarti  $qx^n = qx^n$

Jumlah titik =  $N + 1$

**Note:** Hati-hati terbalik dan salah baca karena ada nilai sangat kecil yang bisa dianggap NOL

1.  $N = 1$

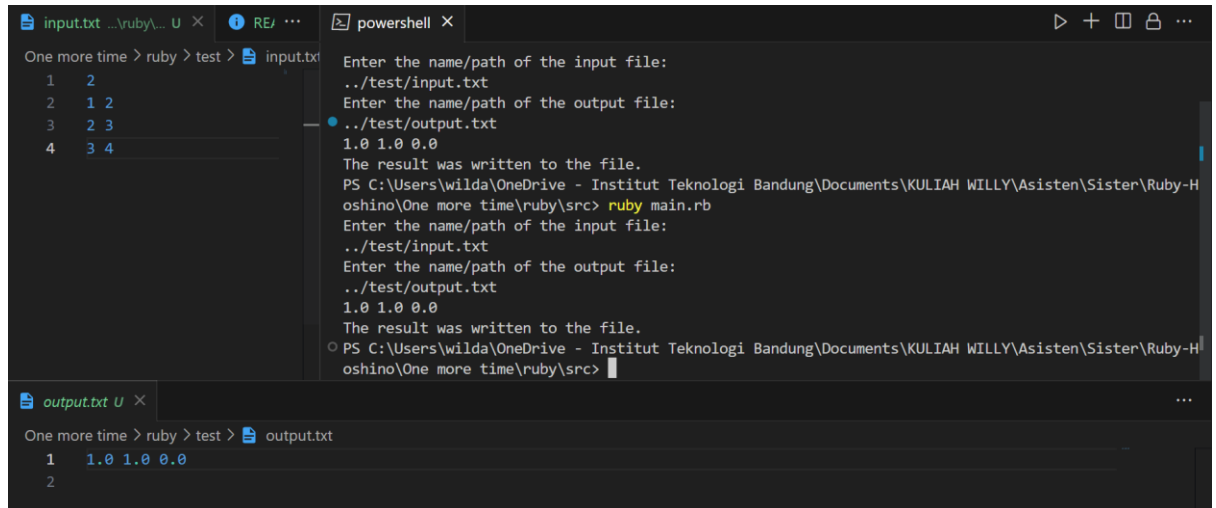


```
input.txt ..\ruby\... U x RE/ ... powershell x
One more time > ruby > test > input.txt
1 2
2 1 2
3 2 3
4 3 4

PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
1.0 1.0 0.0
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U x
One more time > ruby > test > output.txt
1 1.0 1.0 0.0
2
```

## 2. $N = 2$

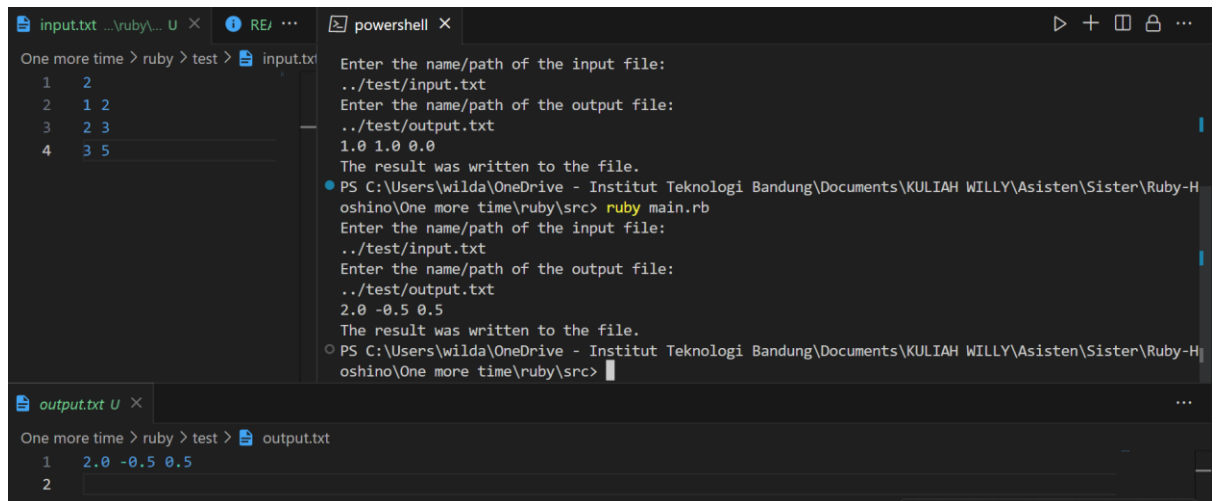


```
input.txt ...\ruby\... U X RE/ ... powershell X
One more time > ruby > test > input.txt
1 2
2 1 2
3 2 3
4 3 4

Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
1.0 1.0 0.0
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
1.0 1.0 0.0
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 1.0 1.0 0.0
2
```

## 3. $N = 2$

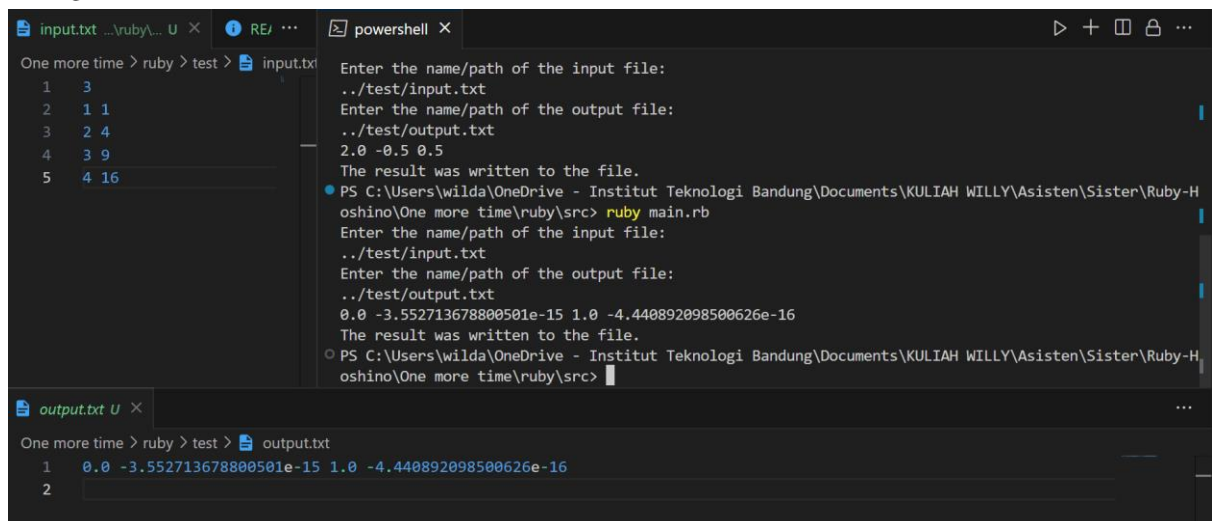


```
input.txt ...\ruby\... U X RE/ ... powershell X
One more time > ruby > test > input.txt
1 2
2 1 2
3 2 3
4 3 5

Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
1.0 1.0 0.0
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
2.0 -0.5 0.5
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 2.0 -0.5 0.5
2
```

## 4. $N = 3$



```
input.txt ...\ruby\... U X RE/ ... powershell X
One more time > ruby > test > input.txt
1 3
2 1 1
3 2 4
4 3 9
5 4 16

Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
2.0 -0.5 0.5
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
0.0 -3.552713678800501e-15 1.0 -4.440892098500626e-16
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 0.0 -3.552713678800501e-15 1.0 -4.440892098500626e-16
2
```

## 5. N = 3

```

input.txt ...ruby\... U X REJ ... ruby X
One more time > ruby > test > input.txt
1 3
2 1 2
3 2 3
4 3 4
5 4 5

Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
0.0 -3.552713678800501e-15 1.0 -4.440892098500626e-16
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
1.0 1.0000000000000018 0.0 0.0
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 1.0 1.0000000000000018 0.0 0.0
2

```

## 6. N = 3

```

input.txt ...ruby\... U X REJ ... powershell X
One more time > ruby > test > input.txt
1 3
2 1 10
3 2 2
4 3 5
5 4 1

Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
1.0 1.0000000000000018 0.0 0.0
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
47.0 -57.49999999999999 23.5 -3.0
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 47.0 -57.49999999999999 23.5 -3.0
2

```

## 7. N = 4

```

input.txt ...ruby\... U X REJ ... ruby X
One more time > ruby > test > input.txt
1 4
2 0 1
3 1 1
4 2 1
5 3 1
6 4 1

Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
47.0 -57.49999999999999 23.5 -3.0
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
1.0 2.220446049250313e-16 -1.6653345369377348e-16 0.0 6.938893903907228e-18
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 1.0 2.220446049250313e-16 -1.6653345369377348e-16 0.0 6.938893903907228e-18
2

```

## 8. N = 4

```

input.txt ...\ruby\... U X REJ ... powershell X
One more time > ruby > test > input.txt
1 4
2 0 0
3 1 0
4 2 0
5 3 0
6 4 1

Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
1.0 2.220446049250313e-16 -1.6653345369377348e-16 0.0 6.938893903907228e-18
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
0.0 -0.25 0.4583333333333333 -0.25 0.041666666666666664
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 0.0 -0.25 0.4583333333333333 -0.25 0.041666666666666664
2

```

## 9. N = 7

```

input.txt ...\ruby\... U X REJ ... powershell X
One more time > ruby > test > input.txt
1 7
2 0 0
3 1 0
4 2 0
5 3 0
6 4 1
7 5 1
8 6 1
9 7 1

../test/input.txt
Enter the name/path of the output file:
../test/output.txt
0.0 -0.25 0.4583333333333333 -0.25 0.041666666666666664
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
0.0 -5.573809523809522 12.930555555555555 -10.986111111111111 4.472222222222222 -0.936111111111107 0
.0972222222222222 -0.003968253968253967
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 0.0 -5.573809523809522 12.930555555555555 -10.986111111111111 4.472222222222222 -0.936111111111107 0.097222222222
2

```

## 10. N = 10

```

input.txt ...\ruby\... U X REJ ... powershell X
One more time > ruby > test > input.txt
1 10
2 1 10
3 2 2
4 3 5
5 4 1
6 6 1
7 -10 -10
8 0 0
9 18 100
10 -100 100
11 200 10
12 150 -150

../test/output.txt
0.0 -5.573809523809522 12.930555555555555 -10.986111111111111 4.472222222222222 -0.936111111111107 0
.0972222222222222 -0.003968253968253967
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src> ruby main.rb
Enter the name/path of the input file:
../test/input.txt
Enter the name/path of the output file:
../test/output.txt
0.0 49.53156240504624 -63.31933685938633 28.332063291449046 -4.590928475760433 -0.005976425398491499
0.05517289041481031 -0.0025565895341109024 -4.596584541594323e-07 2.2364932807996072e-07 -8.2157632
30093799e-10
The result was written to the file.
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-H
oshino\One more time\ruby\src>

output.txt U X
One more time > ruby > test > output.txt
1 0.0 49.53156240504624 -63.31933685938633 28.332063291449046 -4.590928475760433 -0.005976425398491499 0.0551728904
2

```