

Nama : Hidayatullah Wildan Ghaly B.

NIM : 13521015

## Interpolation Polynomial with C#

Contoh Input/Output

Format input:

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

Format output:

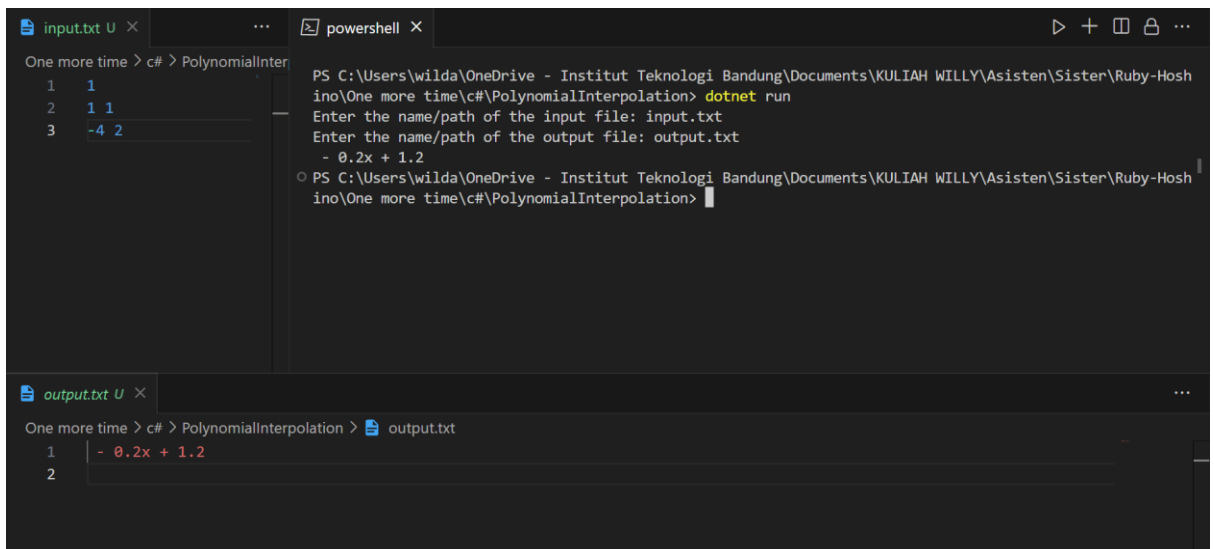
$Ax^n + bx^{n-1} + \dots + px + q$

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

dengan  $^n$  merupakan pangkat yang berarti  $ax^{**n} = ax^n$

$N = n - 1$

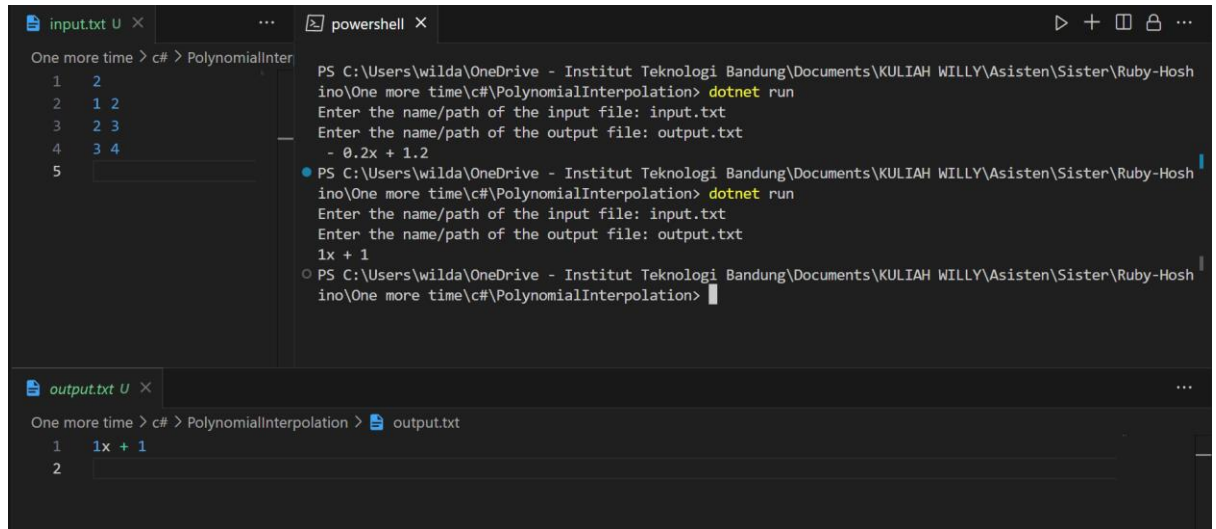
### 1. $N = 1$



```
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
- 0.2x + 1.2
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation>
```

```
One more time > c# > PolynomialInterpolation > output.txt
1 - 0.2x + 1.2
2
```

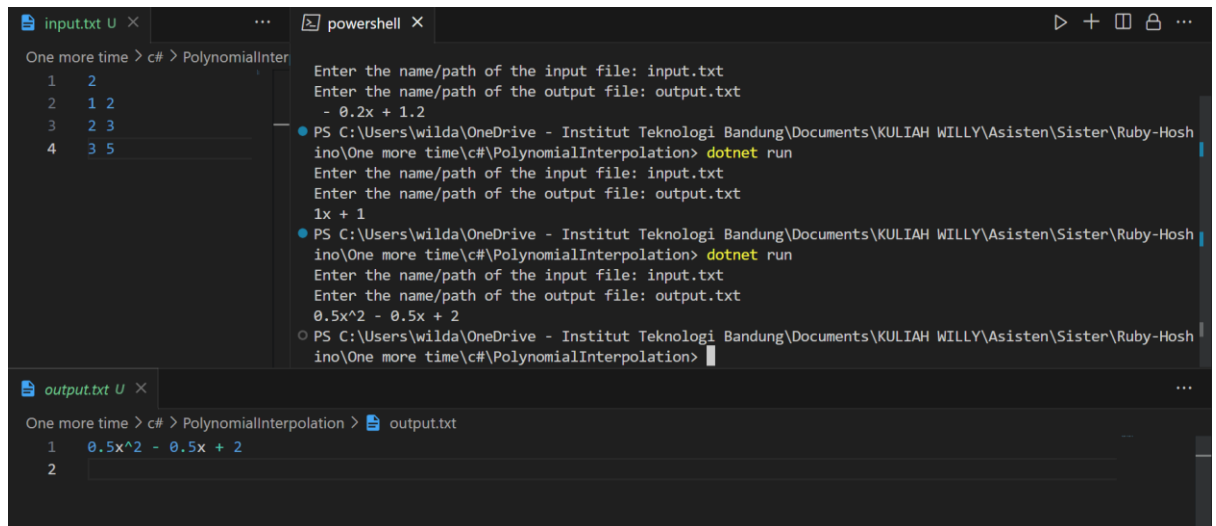
## 2. $N = 2$



```
input.txt U X ... powershell X
One more time > c# > PolynomialInterpolation
1 2
2 1 2
3 2 3
4 3 4
5
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
- 0.2x + 1.2
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
1x + 1
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U X ...
One more time > c# > PolynomialInterpolation > output.txt
1 1x + 1
2
```

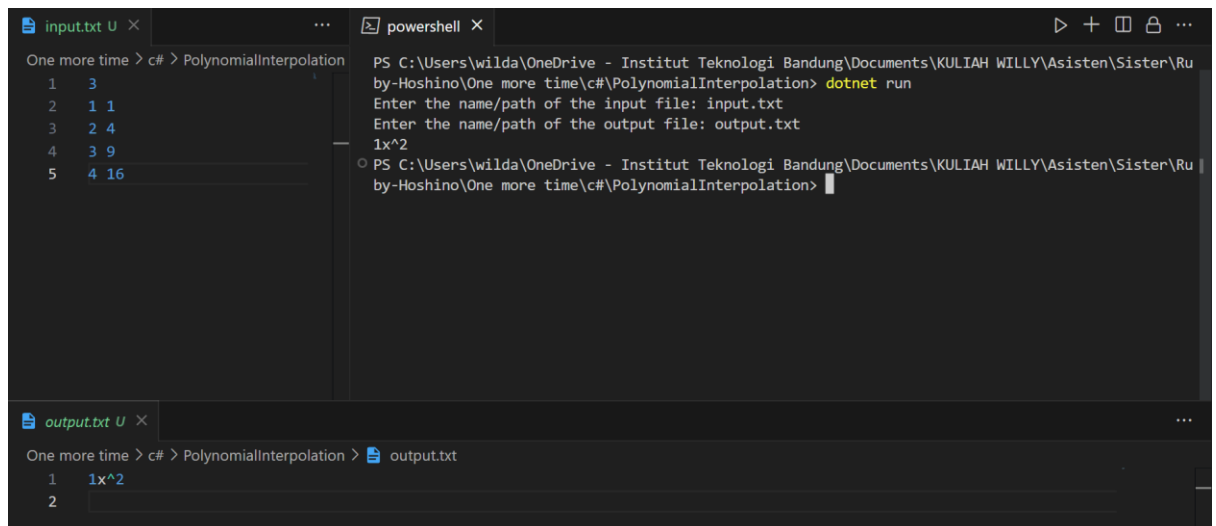
## 3. $N = 2$



```
input.txt U X ... powershell X
One more time > c# > PolynomialInterpolation
1 2
2 1 2
3 2 3
4 3 5
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
- 0.2x + 1.2
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
1x + 1
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
0.5x^2 - 0.5x + 2
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U X ...
One more time > c# > PolynomialInterpolation > output.txt
1 0.5x^2 - 0.5x + 2
2
```

## 4. $N = 3$



```
input.txt U X ... powershell X
One more time > c# > PolynomialInterpolation
1 3
2 1 1
3 2 4
4 3 9
5 4 16
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
1x^2
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ruby-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U X ...
One more time > c# > PolynomialInterpolation > output.txt
1 1x^2
2
```

## 5. $N = 3$

```

input.txt U x
One more time > c# > PolynomialInterpolation
1 3
2 1 2
3 2 3
4 3 4
5 4 5

powershell x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
1x^2
• PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
0.999999905x + 1
○ PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U x
One more time > c# > PolynomialInterpolation > output.txt
1 0.999999905x + 1
2

```

## 6. $N = 3$

```

input.txt U x
One more time > c# > PolynomialInterpolation
1 3
2 1 10
3 2 2
4 3 5
5 4 1

powershell x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
1x^2
• PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
0.999999905x + 1
• PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
- 3x^3 + 23.5x^2 - 57.500004x + 47
○ PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U x
One more time > c# > PolynomialInterpolation > output.txt
1 - 3x^3 + 23.5x^2 - 57.500004x + 47
2

```

## 7. $N = 4$

```

input.txt U x
One more time > c# > PolynomialInterpolation
1 4
2 0 1
3 1 1
4 2 1
5 3 1
6 4 1

powershell x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
1
○ PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U x
One more time > c# > PolynomialInterpolation > output.txt
1 1
2

```

## 8. $N = 4$

```

input.txt U X
One more time > c# > PolynomialInterpolation
1 4
2 0 0
3 1 0
4 2 0
5 3 0
6 4 1
7

powershell X
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
1
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
0.041666668x^4 - 0.25x^3 + 0.45833334x^2 - 0.25x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U X
One more time > c# > PolynomialInterpolation > output.txt
1 0.041666668x^4 - 0.25x^3 + 0.45833334x^2 - 0.25x
2

```

## 9. $N = 7$

```

input.txt U X
One more time > c# > PolynomialInterpolation
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

powershell X
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
1
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
0.041666668x^4 - 0.25x^3 + 0.45833334x^2 - 0.25x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
- 0.0039682547x^7 + 0.09722223x^6 - 0.936111x^5 + 4.472222x^4 - 10.986111x^3 + 12.930555x^2 - 5
.573809x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U X
One more time > c# > PolynomialInterpolation > output.txt
1 - 0.0039682547x^7 + 0.09722223x^6 - 0.936111x^5 + 4.472222x^4 - 10.986111x^3 + 12.930555x^2 - 5
.573809x
2

```

## 10. $N = 10$

```

input.txt U X
One more time > c# > PolynomialInterpolation
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

powershell X
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
0.041666668x^4 - 0.25x^3 + 0.45833334x^2 - 0.25x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
- 0.0039682547x^7 + 0.09722223x^6 - 0.936111x^5 + 4.472222x^4 - 10.986111x^3 + 12.930555x^2 - 5
.573809x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation> dotnet run
Enter the name/path of the input file: input.txt
Enter the name/path of the output file: output.txt
- 0.00255659x^7 + 0.055172905x^6 - 0.00597638x^5 - 4.590929x^4 + 28.332066x^3 - 63.319336x^2 +
49.531567x
PS C:\Users\wilda\OneDrive - Institut Teknologi Bandung\Documents\KULIAH WILLY\Asisten\Sister\Ru
by-Hoshino\One more time\c#\PolynomialInterpolation>

output.txt U X
One more time > c# > PolynomialInterpolation > output.txt
1 - 0.00255659x^7 + 0.055172905x^6 - 0.00597638x^5 - 4.590929x^4 + 28.332066x^3 - 63.319336x^2 +
49.531567x
2

```