●解題說明:

把要使用到的物件定義，例如:Term，Polynomial，在完成>>和<<的處理，清空資料很重要，把數字和次方分開處理，相加的部份把只有一個指數的直接輸出，指數一樣相加，剩下的直接加回去

•效能分析

>>和<<的部分會跑一次，所以時間複雜度是O(n)，n是多項式項數

相加的部分會跑兩個多項式，所以式O(n+m)，n，m是多項式項數

空間複雜度在主程式有p1,p2,p3所以是O(n + m + k)，n，m，k是多項式項數

•

測試與驗證

```
Enter the first polynomial:
input the number of terms: 2
input coefficient and exponent for term 1: 3 1
input coefficient and exponent for term 2: 1 0
Enter the second polynomial:
input the number of terms: 4 2
input coefficient and exponent for term 1: 2 3
input coefficient and exponent for term 2: 5 1
input coefficient and exponent for term 3: 5 0
input coefficient and exponent for term 4: 1 2
The first polynomial is: 3x^1 + 1
The second polynomial is: 2x^2 + 3x^5 + 1x^50x^1
The sum of the two polynomials is: 2x^2 + 3x^5 + 1x^5 + 3x^1 + 1
```

•

效能量測

```
Enter the first polynomial:
input the number of terms: 2
input coefficient and exponent for term 1: 3 1
input coefficient and exponent for term 2: 2 0
Enter the second polynomial:
input the number of terms: 2
input coefficient and exponent for term 1: 4 1
input coefficient and exponent for term 2: 2 0
The first polynomial is: 3x^1 + 2
The second polynomial is: 4x^1 + 2
The sum of the two polynomials is: 7x^1 + 4
Time taken for polynomial addition: 2 microseconds
```

•

心得討論

這次的作業要注意的細節比較多，例如清空內容，也有用到之前沒用過的程式用法，總體不算太難，只要絲路對了就解得出來，對於效能量測不太確定意思