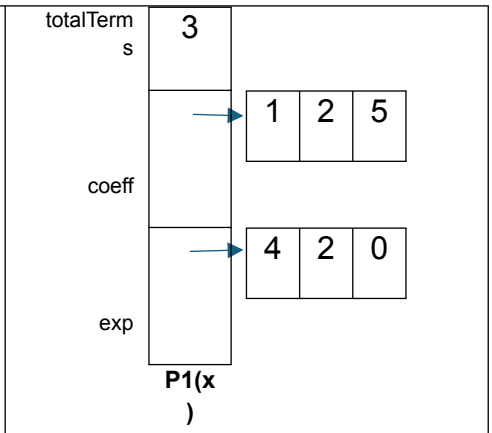
A polynomial P1(x) = x^4+2x^2+5 has three terms: x^4, $2x^2$ and 5. Coefficients of these terms are 1, 2 and 5 respectively while exponents are 4, 2 and 0 respectively. To work with Polynomials, a definition of class Polynomial is given below and memory configuration for P1 is shown as follows:

```
class Polynomial
{
private:
int totalTerms;//Total terms in a Polynomial
int* coeff;//to save array of coefficients
int* exp; //to save array of exponents
};
```



Your task is to complete the definition of Polynomial class such that the main program runs successfully. Make sure that your program doesn't consume extra memory space and it should not leak any memory.

```
void main()
{

      int coeff_P1[] = {1,2,5};   //Coefficients for Polynomial P1

      int exp_P1[] = {4,2,0};     //Exponents for Polynomial P1


      int coeff_P2[] = {4,3};     //Coefficients for Polynomial P2

      int exp_P2[] = {6,2}; //Exponents for Polynomial P2


      Polynomial P1(3, coeff_P1, exp_P1);//Creates P1 with 3 terms (P1 =
1x^4 + 2x^2 + 5x^0 )

      Polynomial P2(2, coeff_P2, exp_P2);//Creates P2 with 2 terms (P2 =
4x^6 + 3x^2)


      cout<<"P1 = "<<P1<<endl; //Prints P1 = x^4+2x^2+5

      cout<<"P2 = "<<P2<<endl; //Prints P2 = 4x^6+3x^2


     if(!P1)
```

```
cout<<”P1 is zero”<<endl;/*if polynomial has only 1 term and its coeff
and exp are zero. i.e. if p1 = 0.*/

if(P1 != P2)

cout<<”P1 is Not Equal to P2”<<endl;

     Polynomial P3 = P1+P2;     //Adds P1 and P2 and saves result in
P3.You may consume extra space for resultant Polynomial in Add function

     cout<<"P3 = "<<P3<<endl;   //Prints P3 = 4x^6+x^4+5x^2+5


P3 = 2 + P1; //Assume P1 already has a constant term, add 2 in it.

cout<<"P3 = "<<P3<<endl;

cout<<++P1<<endl;//adds 1 in all the coefficient.

cout<<P1<<endl;

cout<<P1++<<endl; //adds 1 in all the coefficient.

cout<<P1<<endl;

}
```