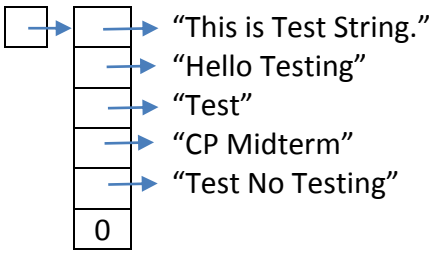
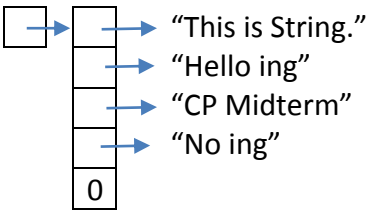
National University of Computer and Emerging Sciences, Lahore Campus

Course:	Computer Programming	Course Code:	CS103
Program:	BS(Computer Science)	Semester:	Summer 2018
Duration:	80 Minutes	Total Marks:	40
Paper Date:	16-July-2018	Weight	20
Section:	A	Page(s):	2
Exam:	Midterm – Part II	Roll No:	

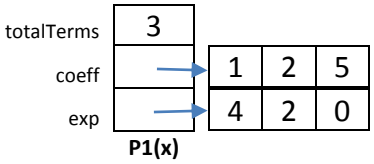
Question 1 [20 Marks] Write a function **char** RemoveAllOccurances(char** listOfStrings, char* stringToRemove)** that takes an array of cstrings (listOfStrings) and removes all occurrences of stringToRemove from this array and returns updated array of cstrings. Make sure that updated array does not consume extra memory and there is no memory leakage in your function. Sample input and output of function is shown below:

Important Note: You are not allowed to use any built-in string related function. Write your own functions if required.

ListOfString	stringToRemove	Output
	"Test"	

Question 2 [20 Marks] 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.Print(); //Prints P1 = x^4+2x^2+5
     cout<<"P2 = "; P2.Print(); //Prints P2 = 4x^6+3x^2

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

     cout<<"P3 = "; P3.Print();  //Prints P3 = 4x^6+x^4+5x^2+5
}
```