


National University of Computer and Emerging Sciences, Lahore Campus

	Course Name:	Introduction to Computing	Course Code:	CS101
	Program:	BS(CS)	Semester:	Spring 2018
	Duration:	1 hr	Total Marks:	25
	Paper Date:	Thursday, 12 Apr 2018	Weight	15
	Section:	ALL	Page(s):	4
	Exam Type:	Sessional 2	Roll No.	

Instruction/Notes: 1. Solve the exam on this question paper. No rough sheets allowed.

Question # 1: Write a C++ program that takes as input a sentence which is stored in character array and removes all the characters except the English Alphabets (A-Z and a-z), spaces and full stop. Note that you cannot use a second array for this. **(Marks: 15)**

Skeleton and a sample run of the program that performs these tasks is given below.

```
#include <iostream>
using namespace std;

// Part a) Write Prototype of Functions Here

void Input(char str[]);
void Remove_Junk(char str[]);
bool compare_char(char ch);

int main() {
    char Str[100]={'\0'};
    cout<<"Enter the String: "<<endl;
    Input (Str); // for input

    Cout<< Str << endl; // Print before junk is removed

    Remove_Junk (Str);
    Cout<< Str << endl; // Print after junk is removed
    return 0;
}
```

Sample Run:

For Example if Input Array is: T,h'is, is m%,y fi%%rs,t wo(rl)d*.

The Output after removing junk should be: This is my first world.

Part b) In the space provided below, write C++ code of **Input (str)**.

```
void Input(char str[]){
    cin.get(str, 100);
}
```

Part c) In the space provided below, write C++ code for a compare function which will check, if given character belongs to English Alphabets (A-Z and a-z), spaces and full stop.

This function will be used in remove_Junk function.

```
void Remove_Junk(char str[]){
    for (int i = 0; str[i] != '\0'; i++){
        if (!compare_char(str[i]))
        {
            for (int j = i; str[j] != '\0'; j++)
                str[j] = str[j + 1];
            i--;
        }
    }
}
```

Part d) In the space provided below, write C++ code of **Remove_Junk(Str)**.

```
bool compare_char(char ch){
if (ch == '.' || ch == ' ' || (ch >= 65 && ch <= 90) || (ch >=
97 && ch <= 122))
    return true;
else
    return false;
}
```

Press any key to continue . . .

Press any key to continue . . .

Question # 2: Write the output of the following program.

(Marks: 15)

```

#include<iostream>
using namespace std;

void mystery1(int array1[], int n1, int &index);
void mystery2(int array2[], int a2[], int n2, int index2);
void mystery3(int array3[], int n3, int index3);
void mystery4(int array4[], int array3[], int index3);

int main(){
    int k = 3;
    int arr[5] = { 1, 2, 3, 4, 5 };

    mystery1(arr, 5, k);

    for (int i = 0; i<5; i++)
        cout << arr[i] << " ";

    cout << "\n Value of k is " << k <<endl;
    return 0;
}

void mystery1(int array1[], int n1, int &index){
    const int MAXOFFSET = 100;
    int temp[MAXOFFSET];
    if (index > 0)
    {
        mystery2(temp, array1, n1, index);
        mystery3(array1, n1, index);
        mystery4(temp, array1, index);
    }
}

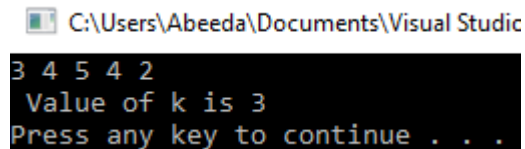
void mystery2(int array2[], int a2[], int n2, int index2){
    for (int j = 0; j<index2; j++)
        array2[j] = a2[n2 - index2 + j];
}

void mystery3(int array3[], int n3, int index3){
    for (int i = n3 - 1; i >= index3; i--)
    {
        array3[i] = array3[i - index3];
        index3++;
    }
}

void mystery4(int array4[], int array3[], int index3){
    for (int i = 0; i<index3; i++)
        array3[i] = array4[i];
}

```

Output:



C:\Users\Abeeda\Documents\Visual Studio

```

3 4 5 4 2
Value of k is 3
Press any key to continue . . .

```

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