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Y2.S2.03(CS)

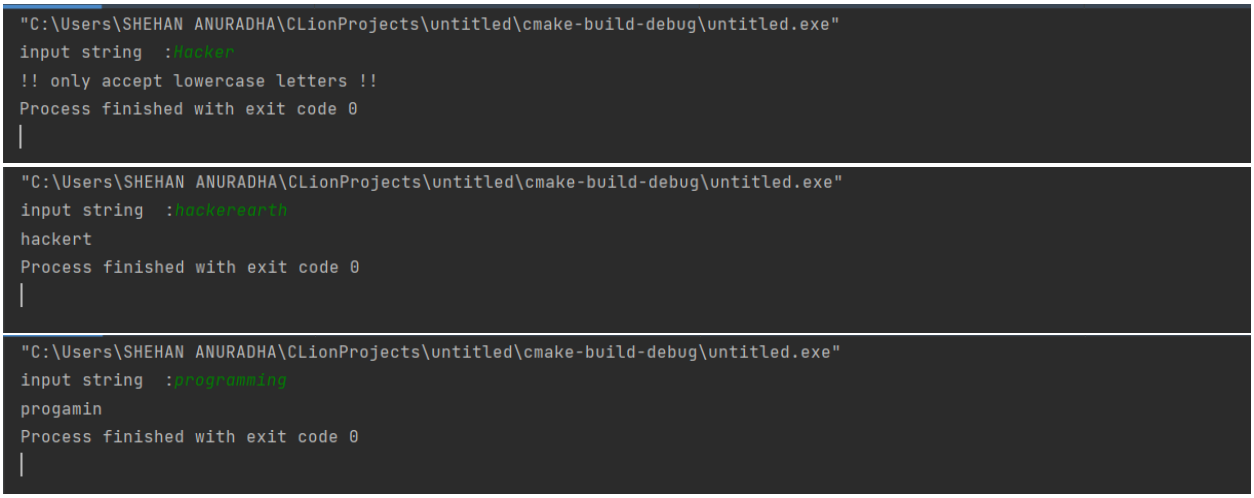
Question 1

Source code

```
#include <stdio.h>
#include <string.h>


void f1(int l,char s[100]) //create function for remove duplicate elements
{
   for (int i = 0; i < l; ++i) //find duplicate elements and replace them with ' '
   {
      for (int j = i+1; j <l ; ++j) {
         if(s[i]==s[j])
         {
            s[j]=' ';

         }
      }
   }
   for (int i = 0; i < l; ++i) //remove spaces and print rest
   {
      if(s[i]!=' ')
         printf("%c",s[i]);
   }
}


int main() {
   //define variables
   int n, count = 0;
```

```
    char s[100];

    printf("input the string"); //get user input
    scanf("%s",s);
    n= strlen(s); //assign array length to n

    for (int i = 0; i < n; ++i) //check elements only in lowercase format
    {
        if (s[i] >= 'A' && s[i] <= 'Z') {
            printf("!! only accept lowercase letters !!");
            count++;
        }
    }

    if(count<=0) //if all the elements in lowercase call function f1
        f1(n,s);

    return 0;
}
```

Inputs and outputs



Question 2

Source code

```
#include <stdio.h>
#include <string.h>

int main() {
   //define variables
   char array[3][10];
   char *a = NULL;
   char b[10];
   char c[10];
   int rev,m,n, counter = 0;



   printf("input number of passwords :");//get user inputs
   scanf("%d",&n);
   for (int i = 0; i < n; ++i) //store strings inside a 2d array
   {
      scanf("%s",array[i]);
   }

   for (int i = 0; i < n; ++i) //check all the strings consist with odd number of elements
   {
      a=array[i];
      if(strlen(a)%2==0)
      {
```

```
        printf("wrong length !!it must be an odd number!!");
        counter++;
        break;
    }

}
if(counter<=0){
    for (int i = 0; i < n; ++i) {
        a=array[i];
        strcpy(b,a);
        strrev(a);
        rev = strcmp(a,b);
        if(rev==0) //check for palindrome
        {
            m= (strlen(a))/2;
            printf("%d %c\n\n",strlen(a),a[m]);
            break;
        } else{
            if(a==array[i]) //check for reversed string
            {
                strcpy(c,array[i]);
                m= (strlen(c))/2;
                printf("%d %c",(strlen(c)),c[m]);
                break;
            }
        }
    }
}
```

```
    return 0;
}
```

Inputs and outputs

When the password is reversed

```
"C:\Users\SHEHAN ANURADHA\CLionProjects\untitled\cmake-build-debug\untitled.exe"
input number of passwords :4
abc
def
feg
cba
3 b
Process finished with exit code 0
```

When the password is a palindrome

```
"C:\Users\SHEHAN ANURADHA\CLionProjects\untitled\cmake-build-debug\untitled.exe"
input number of passwords :3
civic
rty
cvb
5 v
```

When input a string that has even number of elements

```
"C:\Users\SHEHAN ANURADHA\CLionProjects\untitled\cmake-build-debug\untitled.exe"
input number of passwords :3
asd
dfgh
cvn
wrong length !!it must be an odd no!!
Process finished with exit code 0
```

Question 3

Source code

```
#include <stdio.h>
#include <string.h>

void f1(int l,char a[100],char b[100])//create a function to left rotate the array elements
{
   char temp[100];
   for (int j = 1; j <=l ; ++j) {
      temp[0]=a[0];
      for (int i = 0; i <l-1 ; ++i) {
         a[i]=a[i+1];
      }
      a[l-1]=temp[0];


      if(strcmp(a,b)==0)//check b array is equal to the rotated array
         printf("%d",j);

   }
```

```
}

int main() {

   //define variables
   int l,c;
   char a[100];
   char b[100];



   printf("input the length of the two strings :");//get the length of two strings as a input
   scanf("%d",&l);

   if (l>1 && l<100) //check the length
   {
      for (int i = 0; i < 1; ++i) {

         printf("input S string  :");//get S string as an input
         scanf("%s", a);

         printf("input T string  :");//get T string as an input
         scanf("%s", b);
         //check the given strings have l number of elements
         if(strlen(b)!=l || strlen(a)!=l){
            printf("not match with the given length");
            break;
         }else
            c++;
```

```
    }
  }else
    printf("length error");

  if(c>0) //if the length is correct call the function
    f1(l, a, b);


  return 0;
}
```

Inputs and outputs

```
"C:\Users\SHEHAN ANURADHA\CLionProjects\untitled\cmake-build-debug\untitled.exe"
input the length of the two strings :7
input S string  :aaxaabc
input T string  :aabcaax
3
Process finished with exit code 0
```

When the strings length is not match

```
"C:\Users\SHEHAN ANURADHA\CLionProjects\untitled\cmake-build-debug\untitled.exe"
input the length of the two strings :5
input S string  :abcde
input T string  :aabc
not match with the given length
Process finished with exit code 0
```