Birla Institute of Technology & Science, Pilani Hyderabad Campus
Second Semester 2020-2021
Computer Programming [CS F111]

Lab 11 (Strings and Functions)

Q1. Write a C program to insert a sub-string into a given main string from a given position.

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

int main() {
    char a[10];
    char b[10];
    char c[10];
    int p=0,r=0,i=0;
    int t=0;
    int x,g,s,n,o;

    puts("Enter First String:");
    gets(a);
    puts("Enter Second String:");
    gets(b);
    printf("Enter the position where the item has to be inserted: ");
    scanf("%d",&p);
    r = strlen(a);
    n = strlen(b);
    i=0;

    // Copying the input string into another array
    while(i <= r) {
        c[i]=a[i];
        i++;
    }
    s = n+r;
    o = p+n;

    // Adding the sub-string
    for(i=p;i<s;i++) {
        x = c[i];
        if(t<n)
        {
            a[i] = b[t];
            t=t+1;
        }
        a[o]=x;
        o=o+1;
    }

    printf("%s", a);

    return 0;
}
```

```
main.c:(.text+0x45): warning: the `gets' function is dangerous and should not be used.
Enter First String:
aa
Enter Second String:
bb
Enter the position where the item has to be inserted: 1
abba
```

Q.2 Write a C Program to test if the given string is a palindrome.

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

enum Boolean{false,true};
enum Boolean IsPalindrome(char string[])
{
 int left,right,len=strlen(string);
 enum Boolean matched=true;
 if(len==0)
  return 0;
  left=0;
  right=len-1;
  /* Compare the first and last letter,second & second last & so on */
  while(left<right&&matched)
  {
   if(string[left]!=string[right])
   matched=false;
   else
   {
    left++;
    right--;
   }
  }
  return matched;
 }

int main() {
  char string[40];
   printf("Enter a string:");
  scanf("%s",string);
  if(IsPalindrome(string))
  printf("The given string %s is a palindrome\n",string);
  else
  printf("The given string %s is not a palindrome\n",string);

  return 0;
}
```

```
Enter a string:noon
The given string noon is a palindrome
```

```
Enter a string:moon
The given string moon is not a palindrome
```

```
Enter a string:madam
The given string madam is a palindrome
```

Q.3 Write a C Program that uses functions to perform the following operation: To delete n Characters from a given position in a given string.

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

void delchar(char *x,int a, int b);

void main()
{
     char string[10];
     int n,pos,p;

     puts("Enter the string");
     gets(string);
     printf("Enter the position from where to delete");
     scanf("%d",&pos);
     printf("Enter the number of characters to be deleted");
     scanf("%d",&n);
     delchar(string, n,pos);
    }

// Function to delete n characters
void delchar(char *x,int a, int b)
{
  if ((a+b-1) <= strlen(x))
  {
    strcpy(&x[b-1],&x[a+b-1]);
    puts(x);
    }
}
```

input

```
main.c:12:6: warning: 'gets' is deprecated [-Wdeprecated-declarations]
/usr/include/stdio.h:638:14: note: declared here
main.c:(.text+0x29): warning: the `gets' function is dangerous and should not be used.
Enter the string
hello
Enter the position from where to delete3
Enter the number of characters to be deleted2
heo
```

Q.4 Write a C program that displays the position or index in the string S where the string T begins, or - 1 if S doesn't contain T.

```c
#include<stdio.h>
#include<string.h>
int main() {
  char s[30], t[20];
  char *found;

  /* Entering the main string */
  puts("Enter the first string: ");
  gets(s);

  /* Entering the string whose position or index to be displayed */
  puts("Enter the string to be searched: ");
  gets(t);

  /*Searching string t in string s */
  found=strstr(s,t);
  if(found)
    printf("Second String is found in the First String at %d position.\n",found-s);
   else
    printf("-1");
 return 0;
}
```

input

```
/tmp/ccSZM3mA.o: In function `main':
main.c:(.text+0x29): warning: the `gets' function is dangerous and should not be used.
Enter the first string:
hello
Enter the string to be searched:
ll
Second String is found in the First String at 2 position.
```

Tasks

T1: Write a C program for Q4 without using strstr function.

T2: Write a C program that takes two strings as input and concatenates them in another string and display the concatenated string. Do not use strcat function from string.h file.