STRING ASSIGNMENT

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Q1. Write a C program to find length of a string with and without function.

With function

```
#include<stdio.h>

int main()

{

   char str[20];

   printf("Enter the String\n");

   scanf("%[^\n]s", str);

   int l = strlen(str);

   printf("Length = %d", l);

}
```

Without function

```
#include<stdio.h>

int main()

{

   char str[20],i;

   printf("Enter the String\n");

   scanf("%[^\n]s", str);

   for(i=0;str[i]!=0;i++)

   {



   }

   printf("%d", i);



}
```

Q2. - Write a C program to copy one string to another string with and without function.

With function

```
int main()
{
    char str1[100],str2[100];
    printf("Enter the string\n");
    gets(str1);
    strcpy(str2,str1);
    puts(str2);
}
```

Without function

```
#include<stdio.h>
int main()
{
	int i;
	char a[100], b[100];
	printf("Enter your string\n");
	scanf("%[^\n]", a);
	for(i=0;a[i]!='\0';i++)
		b[i]=a[i];
	b[i]='\0';
	printf("Another string\n%s", b);
	return 0;
}
```

Q 3. Write a C program to concatenate two strings with and without function.

With function

```
//Q:3
#include<stdio.h>
#include<string.h>
int main()
{
	char a[100], b[100];
	printf("Enter 1st string\n");
	gets(a);
	printf("Enter 2nd string\n");
	gets(b);
	strcat(a,b);
	printf("Strings after concatenation\n");
	puts(a);
	puts(b);
	return 0;
}
```

```
//Q:3
#include<stdio.h>
#include<string.h>
int main()
{
	int i, j;
	char a[100], b[100];
	printf("Enter 1st string\n");
	gets(a);
	printf("Enter 2nd string\n");
	gets(b);
	for(i=0;a[i]!='\0';i++);
	a[i]=' ';
	i++;
	for(j=0;b[j]!='\0';j++,i++)
		a[i]=b[j];
	a[i]='\0';
	printf("Strings after concatenation\n");
	puts(a);
	puts(b);
```

```
	return 0;
}
```

Q 4.- Write a C program to compare two strings with and without function.

With function

```
//Q:4
#include<stdio.h>
#include<string.h>
int main()
{
	char a[100], b[100];
	printf("Enter 1st string\n");
	gets(a);
	printf("your 2nd string\n");
	gets(b);
	if(strcmp(a,b)==0)
		printf("Identical");
	else if(strcmp(a,b)==1)
		printf("string 1st have more ASCII value of mismatching character of string 2nd");
	else
		printf("string 2nd have more ASCII value of mismatching character of string 1st");
	return 0;
}
```

Without function

```
//Q:4

#include<stdio.h>

#include<string.h>

int main()

{

	int i, j, c=0;

	char a[100], b[100];

	printf("Enter 1st string\n");

	gets(a);

	printf("your 2nd string\n");

	gets(b);

	for(i=0;a[i]!='\0';i++);

	for(j=0;j!=i;j++)

	{

		if(a[j]==b[j])

			c=c+1;

		else if(a[j]>b[j])
```

```
                {
                        printf("string 1st have more ASCII value of mismatching character of string 2nd");
                        break;
                }
                else
                {
                        printf("string 2nd have more ASCII value of mismatching character of string 1st");
                        break;
                }
        }
        if(c==i)
                printf("Identical");
        return 0;
}
```

Q 5.- Write a C program to convert lowercase string to uppercase.

```
//Q:5
#include<stdio.h>
int main()
{
        int i;
        char a[100];
        printf("Enter your string\n");
        scanf("%[^\n]", a);
        for(i=0;a[i]!='\0';i++)
        {
                if(a[i]>=97 && a[i]<=122)
                        a[i]=a[i]-32;
        }
        printf("String after conversion\n");
        printf("%s", a);
        return 0;
}
```

Q 6.- Write a C program to convert uppercase string to lowercase.

```
//Q:6
#include<stdio.h>
int main()
{
        int i;
        char a[100];
        printf("Enter your string\n");
        scanf("%[^\n]", a);
        for(i=0;a[i]!='\0';i++)
```

```
	{
		if(a[i]>=65 && a[i]<=90)
			a[i]=a[i]+32;
	}
	printf("String after conversion\n");
	printf("%s", a);
	return 0;
}
```

Q 7-Write a C program to toggle case of each character of a string.

```
//Q:7
#include<stdio.h>
int main()
{
	int i;
	char a[100];
	printf("Enter your string\n");
	scanf("%[^\n]", a);
	for(i=0;a[i]!='\0';i++)
	{
		if(a[i]>=97 && a[i]<=122)
			a[i]=a[i]-32;
		else if(a[i]>=65 && a[i]<=90)
			a[i]=a[i]+32;
	}
	printf("String after toggle\n");
	printf("%s", a);
	return 0;
}
```

Q 8-Write a C program to find total number of alphabets, digits or special character in a string.

```
//Q:8
#include<stdio.h>
int main()
{
	int i, c1=0, c2=0, c3=0;
	char a[100];
	printf("Enter your string\n");
	scanf("%[^\n]", a);
	for(i=0;a[i]!='\0';i++)
	{
		if(a[i]>='a' && a[i]<='z' || a[i]>='A' && a[i]<='Z')
			c1=c1+1;
		else if(a[i]>='0' && a[i]<='9')
			c2=c2+1;
		else
			c3=c3+1;
	}
	printf("Total no. of alphabets = %d\n", c1);
	printf("Total no. of digits = %d\n", c2);
	printf("Total no. of special character = %d", c3);
	return 0;
}
```

Q 9-

```
//Q:9
```

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```
#include<stdio.h>
int main()
{
	int i, j=0, k=0, l=0, m=0;
	char a[100], p[100], q[100], r[100], s[100];
	printf("Enter your string\n");
	scanf("%[^\n]", a);
	for(i=0;a[i]!='\0';i++)
	{
		if(a[i]=='a' || a[i]=='e' || a[i]=='i' || a[i]=='o' || a[i]=='u' || a[i]=='A' || a[i]=='E' || a[i]=='I' || a[i]=='O'
|| a[i]=='U')
		{
			p[j]=a[i];
			j++;
		}
		else if(a[i]>='a' && a[i]<='z' || a[i]>='A' && a[i]<='Z')
		{
			q[k]=a[i];
			k++;
		}
		else if(a[i]>='0' && a[i]<='9')
		{
			r[l]=a[i];
			l++;
		}
		else
		{
			s[m]=a[i];
			m++;
		}
	}
	p[j]='\0';
	q[k]='\0';
	r[l]='\0';
	s[m]='\0';
	printf("string of vowels\n%s\n", p);
	printf("string of consonants\n%s\n", q);
	printf("string of digits\n%s\n", r);
	printf("string of special character\n%s", s);
	return 0;
}
```

Q 10-

```
	//Q:10
	#include<stdio.h>
	int main()
	{
		int i, c1=0, c2=0;
		char a[100];
		printf("Enter your string\n");
		scanf("%[^\n]", a);
		for(i=0;a[i]!='\0';i++)
```

```
		{
			if(a[i]=='a' || a[i]=='e' || a[i]=='i' || a[i]=='o' || a[i]=='u' || a[i]=='A' ||
	a[i]=='E' || a[i]=='I' || a[i]=='O' || a[i]=='U')
				c1=c1+1;
			else if(a[i]>='a' && a[i]<='z' || a[i]>='A' && a[i]<='Z')
				c2=c2+1;
		}
		printf("Total no. of vowels = %d\n", c1);
		printf("Total no. of consonants = %d", c2);
		return 0;
	}
```

Q11-

```
#include<stdio.h>
int main()
{
	int i, c=0;
	char a[100];
	printf("Enter your string\n");
	scanf("%[^\n]", a);
	for(i=0;a[i]!='\0';i++)
		if(a[i]==' ')
			c=c+1;
	if(a[0]==' ' && a[i-1]==' ')
		printf("Total no. of words = %d", c-1);
	else if(a[0]==' ' || a[i-1]==' ')
		printf("Total no. of words = %d", c);
	else
		printf("Total no. of words = %d", c+1);
	return 0;
}
```

Q12-

```
#include<stdio.h>
#include<string.h>
int main()
{
	char a[100];
	printf("Enter your string\n");
	gets(a);
	strrev(a);
	printf("String after reverse\n");
	puts(a);
	return 0;
}
```

Q13-

```
#include<stdio.h>
#include<string.h>
int main()
{
	int i, x;
	char a[100], b[100];
```

```
	printf("Enter your string\n");
	gets(a);
	for(i=0;a[i]!='\0';i++)
		b[i]=a[i];
	b[i]='\0';
	strrev(a);
	x=strcmp(a,b);
	if(x==0)
		printf("String is palindrome");
	else
		printf("String is not palindrome");
	return 0;
}
```

Q 15-

```
#include<stdio.h>

#include<string.h>

int main()

{

	int i;

	char a[100], x;

	printf("Enter your string\n");

	gets(a);

	printf("Enter the character whose first occurance to be found: ");

	scanf("%c", &x);

	for(i=0;a[i]!='\0';i++)

		if(a[i]==x)

			break;

	printf("First occurence of  character %c of position is %d", x, i+1);

	return 0;

}
```

Q 16-

```
#include<stdio.h>

#include<string.h>

int main()

{

	int i, j;

	char a[100], x;
```

```
        printf("Enter your string\n");
        gets(a);
        printf("Enter the character whose last occurance to be found: ");
        scanf("%c", &x);
        for(i=0;a[i]!='\0';i++)
                if(a[i]==x)
                        j=i;
        printf("Last occurence of  character %c of position is %d", x, j+1);
        return 0;
}
```

Q 17-

```
#include<stdio.h>
#include<string.h>
int main()
{
        int i;
        char a[100], x;
        printf("Enter your string\n");
        gets(a);
        printf("Enter the character whose all occurance to be found: ");
        scanf("%c", &x);
        printf("All occurrence of a character %c of positions is ", x);
        for(i=0;a[i]!='\0';i++)
                if(a[i]==x)
                        printf("%d ", i+1);
        return 0;
}
```

Q 18-

```
#include<stdio.h>
#include<string.h>
int main()
{
```

```
        int i, c=0;
        char a[100], x;
        printf("Enter your string\n");
        gets(a);
        printf("Enter the character whose occurrences to be count: ");
        scanf("%c", &x);
        for(i=0;a[i]!='\0';i++)
        {
                if(a[i]==x)
                        c=c+1;
        }
        printf("Number of occurrence of character %c is %d", x, c);
        return 0;
}
```

Q19-

```
#include<stdio.h>
int main()
{
        int i, max, c[128]={ };
        char a[1000];
        printf("Enter your string\n");
        scanf("%[^\n]", a);
        for(i=0;a[i]!='\0';i++)
                c[a[i]]++;
        max = c[0];
        printf("Highest frequency character is/are ");
        for(i=0;i<=127;i++)
            if(c[i]>max)
                max=c[i];
        for(i=0;i<=127;i++)
            if(c[i]==max)
                printf("%c ", i);
```

```
        return 0;
}
```

Q20

```
#include<stdio.h>
#include<string.h>
int main()
{
        int i, min, x, c[128]={ };
        char a[1000];
        printf("Enter your string\n");
        scanf("%[^\n]", a);
        for(i=0;a[i]!='\0';i++)
                c[a[i]]++;
        x = c[0];
        for(i=0;i<=127;i++)
            if(c[i]>x)
                x=c[i];
        min=x;
        for(i=0;i<=127;i++)
            if(c[i]<min && c[i]>0)
                min=c[i];
        printf("Lowest frequency character is/are ");
        for(i=0;i<=127;i++)
            if(c[i]==min)
                printf("%c ", i);
        return 0;
}
```

Q30-

```
#include<stdio.h>
#include<string.h>
int main()
{
```

```
int i=0, j=0, la, lx, c=0, f=0;
char a[100], x[100];
printf("Enter your string\n");
gets(a);
printf("Enter the word whose last occurance to be found\n");
scanf("%s", x);
la=strlen(a);
lx=strlen(x);
while(i<=lx-1)
{
        f=0;
        while(j<=la-1)
        {
                if(x[i]==a[j])
                {
                    c=c+1;
                     j++;
                     break;
                }
                else if(j!=0)
                {
                   i=0;
                   f=1;
                   c=0;
                }
                j++;
        }
        if(f==0)
            i++;
}
if(c==lx)
    printf("Last occurence of  word %s", x);
```

```
        return 0;
}
Q41
#include<stdio.h>
#include<string.h>
int main()
{
        int i, j, la, lb;
        char a[100], b[100], ra, rb;
        printf("Enter 1st string\n");
        gets(a);
        printf("your 2nd string\n");
        gets(b);
        la=strlen(a);
        lb=strlen(b);
        if(la==lb)
        {
                for(i=1;i<=la-1;i++)
                        for(j=0;j<=la-1-i;j++)
                                if(a[j]>a[j+1])
                                {
                                        ra=a[j];
                                        a[j]=a[j+1];
                                        a[j+1]=ra;
                                }
                for(i=1;i<=lb-1;i++)
                        for(j=0;j<=lb-1-i;j++)
                                if(b[j]>b[j+1])
                                {
                                        rb=b[j];
                                        b[j]=b[j+1];
                                        b[j+1]=rb;
```

```
                        }
        if(strcmp(a,b)==0)
                printf("String is anagram");
        else
                printf("String is not anagram");
    }
    else
        printf("String are not anagram");
    return 0;
}
```

Q42

```
#include<stdio.h>
int main()
{
    int i, j;
    char a[100];
    printf("Enter your word\n");
    scanf("%s", a);
    printf("Your word is\n");
    printf("%s\n\n", a);
    for(i=0;a[i]!='\0';i++)
    {
        for(j=0;j<=i;j++)
            printf("%c", a[j]);
        printf("\n");
    }
    return 0;
}
```

Q43

```
#include<stdio.h>
#include<string.h>
int main()
```

```
{
        char a[100];
        int i, l, k, j;
        printf("Enter your string\n");
        scanf("%[^\n]", a);
        l=strlen(a);
        for(i=0;i<=l-1;i++)
            if(a[i]==' ')
            {
                k=i;
                break;
             }
        for(i=0;i<=l-1;i++)
            if(a[i]==' ')
                j=i;
        printf("Middle name is\n");
        for(i=k+1;i<=j-1;i++)
                printf("%c", a[i]);
        return 0;
}
```

Q44

```
#include<stdio.h>
#include<string.h>
int main()
{
        int choice, l, i;
        char ch, a[100], b[100];
        printf("Menu\n1. Length of string\n2. Copy of one string into another\n3. Capitalize all letters of string\n4. Reverse of string\n5. Comparison of two strings\n");
        printf("Enter your choice from Menu\n");
        scanf("%d", &choice);
```

```
switch(choice)
{
case 1:  printf("Enter your string\n");
         scanf("%*c%[^\n]", a);
         l=strlen(a);
         printf("Length of string is %d", l);
         break;
case 2:  printf("Enter one string\n");
         scanf("%*c%[^\n]", a);
         printf("Your another string\n");
         strcpy(b,a);
         puts(b);
         break;
case 3:  printf("Enter your string\n");
         scanf("%*c%[^\n]", a);
         for(i=0;a[i]!='\0';i++)
         {
                  if(a[i]>=97 && a[i]<=122)
                           a[i]=a[i]-32;
         }
         printf("String after capitalize all letters\n");
         puts(a);
         break;
case 4:  printf("Enter your string\n");
         scanf("%*c%[^\n]", a);
         strrev(a);
         printf("Reverse of string\n");
         puts(a);
         break;
case 5:  printf("Enter 1st string\n");
         scanf("%*c%[^\n]", a);
         printf("Enter 2nd string\n");
```

```
                scanf("%*c%[^\n]", b);
                if(strcmp(a,b)==0)
                        printf("Identical");
                else if(strcmp(a,b)==1)
                        printf("string 1st have more ASCII value of mismatching character of string
2nd");
                else
                        printf("string 2nd have more ASCII value of mismatching character of string
1st");
                break;
        default: printf("Invalid choice");
        }
        printf("\nThanks for visiting now you can exit");
        return 0;
}
```

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Q.97 What are the function used for reading a string? If you want to read your full name, which function you will prefer? why?

Ans- gets( ) function are used for read string and because gets( ) can read large string until the enter are not coming. so we can read full name by this.

Q.98 What are the ways to initialize 1D and 2D string?

Ans- (i) Compile time initialization
(ii) Run time initialization