**Assignment - 18 A Job Ready Bootcamp in C++, DSA and IOT MySirG**

**String and Functions in C Language**

1. Write a function to calculate length of the string

Sol – 1.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int stringlen(char\*);

int main()

{

char str[100];

printf("Enter a String : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

printf("Length of string is : %d",stringlen(str));

getch();

return 0;

}

int stringlen(char s[])

{

int i;

for(i=0;s[i];i++){}

return i;

}

OR

#include<stdio.h>

#include<conio.h>

int main()

{

int i;

char str[100];

printf("Enter a String : ");

fgets(str,100,stdin);

for(i=0;str[i];i++){}

printf("Size of string is %d",--i);

getch();

return 0;

}

1. Write a function to reverse a string.

Sol – 2.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void stringrev(char\*);

int main()

{

int i;

char str[100];

printf("Enter a String : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

stringrev(str);

getch();

return 0;

}

void stringrev(char b[])

{

int i;

printf("String in reverse order is\n");

for(i=strlen(b)-1;i>=0;i--)

{

printf("%c",b[i]);

}

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int i;

char str[100];

printf("Enter a String : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

printf("String in reverse order is\n");

for(i=99;i>=0;i--)

{

if(str[i])

printf("%c",str[i]);

}

getch();

return 0;

}

1. Write a function to compare two strings.

Sol – 3.

//Approximately same as strcmp()

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int i,a,b;

char str[20],str2[20];

printf("Enter 1st string : ");

fgets(str,20,stdin);

str[strlen(str)-1]=0;

printf("Enter 2nd string : ");

fgets(str2,20,stdin);

str2[strlen(str2)-1]=0;

for(i=0;str[i];i++){}

a=i;

for(i=0;str2[i];i++){}

b=i;

for(i=0;a>b?str[i]:str2[i] ;i++)

{

if(str[i]==str2[i])

continue;

if(str[i]>str2[i]&&((str[i]>=97&&str[i]<123)&&(str2[i]>=97&&str2[i]<123)||(str[i]>=65&&str[i]<91)&&(str2[i]>=65&&str2[i]<91)))

{

printf("1");

break;

}

if(str[i]<str2[i]&&((str[i]>=97&&str[i]<123)&&(str2[i]>=97&&str2[i]<123)||(str[i]>=65&&str[i]<91)&&(str2[i]>=65&&str2[i]<91)))

{

printf("-1");

break;

}

if((str[i]>=97&&str[i]<123)&&(str2[i]>=65&&str2[i]<91))

{

if(str[i]-32==str2[i])

continue;

else if(str[i]-32>str2[i])

{

printf("1");

break;

}

else

{

printf("-1");

break;

}

}

if((str2[i]>=97&&str2[i]<123)&&(str[i]>=65&&str[i]<91))

{

if(str2[i]-32==str[i])

continue;

else if(str[i]+32>str2[i])

{

printf("1");

break;

}

else

{

printf("-1");

break;

}

}

}

getch();

return 0;

}

1. Write a function to transform string into uppercase

Sol – 4.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void stringupp(char\*);

int main()

{

char str[100];

printf("Enter a String : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

stringupp(str);

getch();

return 0;

}

void stringupp(char b[])

{

for(int i=0;b[i];i++)

{

if(b[i]>=97&&b[i]<123)

b[i]=b[i]-32;

}

printf("String upper case is\n%s",b);

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int i;

char str[100],a,A;

printf("Enter a String : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

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

{

if(str[i]>=97&&str[i]<123)

{

a='a',A='A';

while(str[i])

{

if(str[i]==a)

{

str[i]=A;

break;

}

else

{

a++;

A++;

}

}

}

}

printf("String upper case is\n");

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

printf("%c",str[i]);

getch();

return 0;

}

1. Write a function to transform a string into lowercase

Sol – 5.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void stringlow(char\*);

int main()

{

char str[100];

printf("Enter a String : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

stringlow(str);

getch();

return 0;

}

void stringlow(char b[])

{

for(int i=0;b[i];i++)

{

if(b[i]>=65&&b[i]<91)

b[i]=b[i]+32;

}

printf("String lower case is\n%s",b);

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int i;

char str[100],a,A;

printf("Enter a String : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

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

{

if(str[i]>=65&&str[i]<91)

{

a='a',A='A';

while(1)

{

if(str[i]==A)

{

str[i]=a;

break;

}

else

{

a++;

A++;

}

}

}

}

printf("String lower case is\n");

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

printf("%c",str[i]);

getch();

return 0;

}

1. Write a function to check whether a given string is an alphanumeric string or not.

(Alphanumeric string must contain at least one alphabet and one digit)

Sol – 6.

#include<stdio.h>

#include<conio.h>

int main()

{

int i,flag=0,flag1=0;

char str[100];

printf("Enter a String : ");

fgets(str,100,stdin);

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

{

if(flag==0)

{

if((str[i]>=65&&str[i]<91)||(str[i]>=97&&str[i]<123))

flag=1;

}

if(flag1==0)

{

if(str[i]>='0'&&str[i]<='9')

flag1=1;

}

if(flag==1&&flag1==1)

break;

}

if(flag==1&&flag1==1)

printf("String is Alphanumeric");

else

printf("String is not Alphanumeric");

getch();

return 0;

}

1. Write a function to check whether a given string is palindrome or not.

Sol – 7.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int temp,j;

char str[100],b[100]={0};

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

strcpy(b,str);

j=strlen(str);

for(int i=0;i<=j/2;i++)

{

temp=str[i];

str[i]=str[j-(i+1)];

str[j-(i+1)]=temp;

}

if(strcmp(str,b)==0)

printf("String is Palindrome");

else

printf("String is not Palindrome");

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

void check\_pal(char\*);

int main()

{

char str[20];

printf("Enter a word you want to check palindrome or not\n");

fgets(str,20,stdin);

str[strlen(str)-1]=0;

check\_pal(str);

getch();

return 0;

}

void check\_pal(char a[])

{

int i=0,j;

j=strlen(a)-1;

while(i<=j)

{

if(a[i]!=a[j])

break;

i++;

j--;

}

if(i>j)

printf("Palindrome");

else

printf("Not palindrome");

}

1. Write a function to count words in a given string

Sol – 8.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int count\_word(char\*);

int main()

{

char str[100];

printf("Enter a string you want to count word\n");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

printf("Number of words : %d",count\_word(str));

getch();

return 0;

}

int count\_word(char a[])

{

int i,count=0;

for(i=0;a[i];i++)

{

if(a[i]==32&&a[i+1]!=32)

count++;

}

return count+1;

}

9. Write a function to reverse a string word wise. (For example if the given string is

“Mysirg Education Services” then the resulting string should be “Services Education

Mysirg” )

Sol – 9.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void swap(char a[],int st,int end);

int main()

{

int start=0,flag=0,i=0;

char str[100];

printf("Enter a string\n");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

while(str[i])

{

for(i;str[i]!=32;i++)

{

if(str[i]==0)

{

flag=1;

break;

}

}

swap(str,start,i-1);

if(flag==1)

break;

i++;

start=i;

}

swap(str,0,strlen(str)-1);

printf("%s",str);

getch();

return 0;

}

void swap(char a[],int st,int end)

{

char temp;

while(st<end)

{

temp=a[st];

a[st]=a[end];

a[end]=temp;

st++;

end--;

}

}

10. Write a function to find the repeated character in a given string.

Sol – 10.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int i;

char str[100],str2[256]={0};

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

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

str2[str[i]]++;

for(i=0;i<256;i++)

{

if(str2[i]>=2)

printf("%c is repeating %d times\n",i,str2[i]-1);

}

getch();

return 0;

}