ASSIGNMENT-8

1. Read from a terminal using scanf function and print using printf function.

```
#include <stdio.h>
#include <string.h>
int main()
{
  char name[20];
  printf("enter your name: ");
  scanf("%s",name);
  printf("Your name is %s",name);
  return 0;
}
```

Output:-

```
enter your name: Kriti
Your name is Kriti
```

2. Read a lines of text from a terminal using fgets function and print using puts function.

```
#include <stdio.h>
#include <string.h>
int main()
{
  char about[50];
  printf("In which semester you are?: ");
  gets(about);
  puts("I am in:");
  puts(about);
  return 0;
}
```

Output:-

```
In which semester you are?: MCA 1st semester
I am in:
MCA 1st semester
```

3. Convert :-

a. Upper case to Lower case

b. Lower case to Upper case

c. Toggle case

d. Sentence case

```
#include<stdio.h>   //to convert lowercase and uppercase
#include<string.h>
int main()
{
char str[50];
printf("enter any string in uppercase to convert into lowercase: ");
gets(str);
printf("string in lowercase:%s",strlwr(str));
printf("\n enter any string in lowercase to convert into upercase: ");
gets(str);
printf("string in upercase:%s",strupr(str));
return 0;
}
```

Output:-

```
enter any string in uppercase to conert into lowercase: MY FIRST PROGRAM
string in lowercase: my first program
 enter any string in lowercase to convert into upercase: my first program
string in lowercase: MY FIRST PROGRAM
```

```
#include<stdio.h>          // string into togglecase
#include<string.h>
int main()
{
   char str[50];
   int i;
   printf("\n enter the string to convert into toggle case: ");
   gets(str);
   for(i=0;str[i]!='\0';i++)
   {
      if(str[i]>='a' && str[i]<='z')
      {
         str[i]=str[i]-32;
      }
      else if(str[i]>='A' && str[i]<='Z')
      {
         str[i]=str[i]+32;
      }
   }
   printf("\n string into toggle case: %s",str);
   return 0;
}
```

Output:-

```
enter the string to convert into toggle case: My First Program

string into toggle case: mY fIRST pROGRAM
```

4. Perform String Concatenation (With and Without String Handling Functions).

```
#include <stdio.h>   //with function
#include<string.h>
int main()
{
  char str1[20],str2[20];
  printf("enter the first string: ");
   scanf("%s",str1);
    printf("enter the second string: ");
   scanf("%s",str2);
   strcat(str1,str2);
   printf("after concatenation:%s ",str1);
   return 0;

}
```

Output:-

```
enter the first string: Programming
enter the second string: Language
after concatenation:ProgrammingLanguage
```

```
#include <stdio.h>   //without function
int main()
{
  char str1[30], str2[30], i, j;
  printf("Enter first string: ");
  scanf("%s",str1);
  printf("Enter second string: ");
  scanf("%s",str2);

  for(i=0; str1[i]!='\0'; ++i);

  for(j=0; str2[j]!='\0'; ++j, ++i)
  {
    str1[i]=str2[j];
```

```
  }

  str1[i]='\0';
  printf("\nwithout string function: %s",str1);

  return 0;
}
```

Output:-

```
Enter first string: Computer
Enter second string: Programming

without string function: ComputerProgramming
```

5. Perform String Reversal (With and Without String Handling Functions).

```
#include<stdio.h>     //with function
#include <string.h>
int main()
{
   char str[20];
   printf("Enter string: ");
   gets(str);
   printf("String is: %s",str);
   printf("\nReverse String is: %s",strrev(str));
   return 0;
   }
```

Output:-

```
enter the string
computer
retupmoc
```

```
#include <stdio.h>        //without strrev()  function
#include <string.h>

int main()
{
  char str[30],temp,i,len;
  printf("Enter the String : ");
  scanf("%s",str);

  len=strlen(str)-1;
```

```
  for(i=0;i<strlen(str)/2;i++)
  {
    temp=str[i];
    str[i]=str[len];
    str[len--]=temp;
  }
  printf("Reverse string :%s",str);
  return 0;;
}
```

Output:-

```
Enter the String : computer
Reverse string :retupmoc
```

6. Perform Substring Extraction (With and Without String Handling Functions).

```
#include <stdio.h>
int main()
{
  char str[50], sstr[50];
  int pos, l, c = 0;
     printf("Input the string : ");
    fgets(str, sizeof str, stdin);
    printf("Input the position to start extraction :");
     scanf("%d", &pos);

      printf("Input the length of substring :");
  scanf("%d", &l);

  while (c < l)
  {
    sstr[c] = str[pos+c-1];
    c++;
  }
  sstr[c] = '\0';

  printf("The substring retrieve from the string is :  %s\n", sstr);

}
```

Output:-

```
Input the position to start extraction :9
Input the length of substring :5
The substring retrieve from the string is :  of su
```

7. Copy one string into another and count the no of elements copied. (With and Without String Handling Functions).

```
#include<stdio.h>          //with strcpy() function
#include<string.h>
int main()
{
char str1[80], str2[80];
int i;
printf("Input a string: ");
scanf("%s", str2);
for(i=0; str2[i]!='\0'; i++)
str1[i]=str2[i];
str1[i]='\0';
printf("\n");
printf("Original string: %s\n", str1);
printf("copied string: %s", strcpy(str1,str2));
printf("\nNumber of characters = %d\n", i);
return 0;
}
```

Output:-

```
Original string: program
copied string: program
Number of characters = 7
```

```
#include <stdio.h>              //without strcpy() function
#include <string.h>
int main()
{
   char str1[50], str2[50];
   int  i;
     printf("enter the string : ");
     gets(str1);

   i=0;
   while(str1[i]!='\0')
   {
```

```
        str2[i] = str1[i];
        i++;
    }

    str2[i] = '\0';

    printf("\nThe First string is : %s\n", str1);
    printf("Copied string is : %s\n", str2);
    printf("Number of characters: %d\n\n", i);
}
```

Output:-

```
enter the string : my name is kriti

The First string is : my name is kriti
Copied string is : my name is kriti
Number of characters: 16
```

8. Read a string and prints if it is a palindrome or not.

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

int main(){
    char string1[20];
    int i, length,flag=0;

    printf("Enter a string:");
    scanf("%s", string1);

    length = strlen(string1);

    for(i=0;i < length ;i++){
        if(string1[i] != string1[length-i-1]){
            flag = 1;
            break;
    }
}

    if (flag) {
        printf("%s is not a palindrome", string1);
    }
    else {
        printf("%s is a palindrome", string1);
    }
```

```
    return 0;
}
```

Output:-

```
Enter a string:malayalam
malayalam is a palindrome
```

9. Read a line of text and count all occurrences of particular word.

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

int main()
{
    char s[1000],w[1000];
    int n,a[1000],i,j,k=0,l,found=0,t=0;

    printf("Enter  the string : ");
    gets(s);
    printf("Enter word to be searched: ");
    gets(w);
    for(i=0;s[i];i++)
    {
        if(s[i]==' ')
        {
            a[k++]=i;
            }
        }
        a[k++]=i;
        j=0;
        for(i=0;i<k;i++)
        {
            n=a[i]-j;
            if(n==strlen(w))
            {
                t=0;
                for(l=0;w[l];l++)
                {
                    if(s[l+j]==w[l])
                    {
                        t++;
                    }
```

```
                    }
                    if(t==strlen(w))
                {
                        found++;

                }
            }

            j=a[i]+1;
        }

         printf("word '%s' is occurred count=%d ",w,found);


}
```

Output:-

```
Enter  the string : this is my first program and this program contains structure and union
Enter word to be searched: program
word 'program' is occurred count=2
```

10. Read a string and rewrite it in the alphabetical order.

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

int main ()
{
        char str[50],temp;
        int i,j;
  printf("Enter the string : ");
        scanf("%s",str);
        int num = strlen(str);
        for (i = 0; i < num-1; i++) {
                for (j = i+1; j < num-1; j++) {
                        if (str[i] > str[j]) {
                                        temp = str[i];
                                        str[i] = str[j];
                                        str[j] = temp;
                        }
                }
        }
```

```
        printf("In alphabetical order: %s", str);
        return 0;
}
```

Output:-

```
Enter the string : program
In alphabetical order: agoprrm
```

11. Print the Words Ending with Letter S.

```
#include <stdio.h>
#include <string.h>
 int main()
{
   char str[100];
   int i, t, j, len;

   printf("Enter a string : " );
   scanf("%[^\n]s" , str);

   len = strlen(str);

   str[len] = ' ';

   for (t = 0, i = 0; i < strlen(str); i++)
   {
      if ((str[i] == ' ') && (str[i - 1] == 's'))
      {
         for (j = t; j < i; j++)
            printf("%c" , str[j]);
         t = i + 1;
         printf("\n" );
      }
      else
      {
         if (str[i] == ' ')
         {
            t = i + 1;
         }
```

```
    }
  }
}
```

Output:-

```
Enter a string : completes and tries to do fast
completes
tries
```

12. Delete All Repeated Words in the line of text.

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

int main()
{
	char str[50];
	int i, j, k;

	printf("Enter any String : ");
	gets(str);

	for(i = 0; i < strlen(str); i++)
	{
		for(j = i + 1; str[j] != '\0'; j++)
		{
			if(str[j] == str[i])
			{
				for(k = j; str[k] != '\0'; k++)
				{
					str[k] = str[k + 1];
				}
			}
		}
	}

	printf("after Removing All Duplicates: %s ", str);

	return 0;
}
```

Output:-

```
Enter any String : computer course
after Removing All Duplicates: computer s
```

OPTIONAL

1. Find the number of vowels, consonants, numerals and special characters in a text string.

```
#include<stdio.h>

void main()
{
   char str[200];
   int i,vowels=0,consonants=0,digits=0,spaces=0,specialCharacters=0;


   printf("Enter a string\n");
   gets(str);
   for(i=0;str[i]!='\0';i++)
   {
      if(str[i]=='a' || str[i]=='e' || str[i]=='i' ||str[i]=='o' || str[i]=='u' || str[i]=='A' ||str[i]=='E' ||
str[i]=='I' || str[i]=='O' ||str[i]=='U')
      {
         vowels++;
      }
      else if((str[i]>='a'&& str[i]<='z') || (str[i]>='A'&& str[i]<='Z'))
      {
         consonants++;
      }
      else if(str[i]>='0' && str[i]<='9')
      {
         digits++;
      }
      else if (str[i]==' ')
      {
         spaces++;
      }
      else
      {
         specialCharacters++;
      }
   }
```

```
    printf("\nVowels = %d",vowels);
    printf("\nConsonants = %d",consonants);
    printf("\nDigits = %d",digits);
    printf("\nWhite spaces = %d",spaces);
    printf("\nSpecial characters = %d",specialCharacters);

}
```

Output:-

```
Enter a string
MCA 1st semester

Vowels = 4
Consonants = 9
Digits = 1
White spaces = 2
Special characters = 0
```

2. Print the alphabet set a to z and A to Z in decimal and character form.

```
#include <stdio.h>
int main()
{
  char ch;
  printf("\n");
  for (ch = 65; ch <= 122; ch = ch + 1)
  {
    if (ch > 90 && ch < 97)
      continue;
    printf("[%2d:%c] ", ch, ch);
  }
  return 0;
}
```

Output:-

```
[65:A] [66:B] [67:C] [68:D] [69:E] [70:F] [71:G] [72:H] [73:I] [74:J] [75:K] [76:L] [77:M] [78:N] [79:O] [80:P] [81:Q] [82:R] [83:S] [84:T]
 [85:U] [86:V] [87:W] [88:X] [89:Y] [90:Z] [97:a] [98:b] [99:c] [100:d] [101:e] [102:f] [103:g] [104:h] [105:i] [106:j] [107:k] [108:l] [10
9:m] [110:n] [111:o] [112:p] [113:q] [114:r] [115:s] [116:t] [117:u] [118:v] [119:w] [120:x] [121:y] [122:z]
```

4. Read a line of text and count all occurrences of particular character.

```
#include<stdio.h>
#include <string.h>
 int main()
{
    char str[100],c;
    int i,count=0;
```

```
   printf("Enter  the string : ");
   gets(str);
   printf("Enter character to be searched: ");
   c=getchar();

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

          printf("'%c' occurs %d times \n ",c,count);



   return 0;
}
```

Output:-

```
Enter  the string : c programming
Enter character to be searched: g
'g' occurs 2 times
```

5. Remove all Characters in a String except alphabet.

```
#include <stdio.h>
#include <string.h>
int main()
{
   char str[150];
   int i,j;
          printf("enter the string : ");
   fgets(str,sizeof str,stdin);
   for(i=0; str[i]!='\0'; ++i)
   {
      while (!((str[i]>='a'&&str[i]<='z') || (str[i]>='A'&&str[i]<='Z' || str[i]=='\0')))
      {
         for(j=i;str[j]!='\0';++j)
         {
            str[j]=str[j+1];
```

```
        }
        str[j]='\0';
      }
    }
    printf("After removing : %s\n",str);
}
```

Output:-

```
enter the string : lab 10 assignment
After removing : labassignment
```

6. Count no of characters and words in the line of text.

```
#include<stdio.h>
int main()
{
char str[100];
int i,word, ch,line;
line=word=ch=0;
printf("Enter a string in multiple lines terminated with ~ :\n");
scanf("%[^~]", str);

//To count lines in text
for(i=0; str[i]!='\0'; i++)
{
if(str[i]=='\n')
{
line++;
word++;
}
else
{
if(str[i]==' '||str[i]=='\t')
{
word++;
ch++;
}
else ch++;
}
}

printf("\nCharacter counts = %d\n",ch);
```

```
printf("Word counts = %d\n",word);
printf("Line counts = %d\n",line);

getch();
 }
```