Program1:-

```
#include<stdio.h>

main()
{
 int i,vcount=0,ccount=0;
 char str[20],x;
 printf("Enter a word\n");
 scanf("%s",str);

 for(i=0;str[i]!='\0';i++)
 {
  x = str[i];
  if(x=='a' || x=='e' || x=='i' || x=='o' || x=='u' || x=='A' || x=='E' || x=='I' || x=='O' || x=='U')
  {
   vcount++;
  }
  else
  {
   ccount++;
  }
 }

 printf("The number of vowels present are: %d",vcount);
 printf("\nThe number of consonants present are: %d",ccount);
}
```

Program2:-

```
#include<stdio.h>

int Xstrlen(char *);

main()
{
 int i,l,count=0;
 char str1[20],str2[20];
 printf("Enter a word\n");
 scanf("%s",str1);
 l = Xstrlen(str1);

 for(i=1;str1[i-1]!='\0';i++)
 {
  str2[i-1] = str1[l-i];
 }

 for(i=0;str1[i]!='\0';i++)
 {
  if(str2[i] != str1[i])
  {
   count++;
  }
 }
```

```
 if(count==0)
 {
  printf("The given string is a Palindrome");
 }
 else
 {
  printf("The given string is not a Palindrome");
 }
}

int Xstrlen(char *ptr)
{
 int len = 0;
 while(*ptr!='\0')
 {
  len++;
  ptr++;
 }
 return len;
}
```

Program3:-

```
#include<stdio.h>

main()
{
 int i,j;
 char str1[20],str2[20],str3[40],x;
 printf("Enter a String\n");
 gets(str1);
 printf("Enter another String\n");
 gets(str2);
  //str3 is used for the concatination process
 for(i=0;str1[i]!='\0';i++)
 {
  str3[i] = str1[i];
 }

 for(j=0;str2[j]!='\0';j++)
 {
  str3[i] = str2[j];
  i++;
 }

 printf("The New String is : \n%s",str3);
}
```

Program4:-

```
#include<stdio.h>

int Xstrlen(char *);
```

```
main()
{
 int i,l;
 char str1[20],str2[20];
 printf("Enter a word\n");
 scanf("%s",str1);
 l = Xstrlen(str1);

 for(i=1;str1[i-1]!='\0';i++)
 {
  str2[i-1] = str1[l-i];
 }
 str2[i] = '\0';  //for storing the last character as null
 printf("The reversed word is : %s\n",str2);

}

int Xstrlen(char *ptr)
{
 int len = 0;
 while(*ptr!='\0')
 {
  len++;
  ptr++;
 }
 return len;
}
```

Program5:-

```
#include<stdio.h>

int Xstrlen(char *);

main()
{
 int i,l1,l2,count=0;
 char str1[20],str2[20];

 printf("Enter a string\n");
 gets(str1);
 printf("Enter another string\n");
 gets(str2);

 l1 = Xstrlen(str1);
 l2 = Xstrlen(str2);


 if(l1==l2)
 {
  for(i=0;str1[i]!='\0';i++)
  {
   if(str2[i] != str1[i])
```

```
   {
    count++;
   }
  }

  if(count==0)
  {
   printf("The given strings are exactly Same");
  }
  else
  {
   printf("The given strings are not Same");
  }
 }

 else
 {
  printf("The given strings are not exactly Same");
 }
}

int Xstrlen(char *ptr)
{
 int len = 0;
 while(*ptr!='\0')
 {
  len++;
  ptr++;
 }
 return len;
}
```

Program6:-

```
#include<stdio.h>

main()
{
 int i;
 char str1[20],str2[20],x;
 printf("Enter a word\n");
 gets(str1);
 //we only have to store a string in another string
 for(i=0;str1[i]!='\0';i++)
 {
  str2[i] = str1[i];
 }
 /*there will be no printing on the output screen
 it will only take a string as input*/
}
```

Program7:-

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

```
int Xstrlen(char *);

main()
{
 int i,j,l;
 char str[20],temp;
 printf("Enter a string\n");
 gets(str);

 l = Xstrlen(str);

 for(i=0;i<l-1;i++)
 {
  for(j=i+1;j<l;j++)
  {
   if(str[i]>str[j])
   {
    temp = str[i];
    str[i] = str[j];
    str[j] = temp;
   }
  }
 }

 printf("The alphabetically arranged String is : %s",str);
}

int Xstrlen(char *ptr)
{
 int len = 0;
 while(*ptr!='\0')
 {
  len++;
  ptr++;
 }
 return len;
}
```

Program8:-

```
#include<stdio.h>

main()
{
 struct Student
 {
  int roll;
  char name[50];
  char branch[20];
  char sec;
  int Group;
  float cgpa;
```

```
 char gender;
 } st;

 int sst,stotal;

 sst = sizeof(st);

 stotal = sizeof(st.branch) + sizeof(st.cgpa) + sizeof(st.gender) + sizeof(st.Group) + sizeof(st.name) + sizeof(st.roll)
+ sizeof(st.sec);

 printf("Size of the Structure is = %d\n",sst);
 printf("Sum of sizes of all the members of the Structure is = %d\n",stotal);
}
```

Program9:-

```
#include<stdio.h>

main()
{
 struct Employee
 {
  char empId[50];
  char fname[50];
  char mname[50];
  char lname[50];
  char doj[20];
  char desig[20];
  char grade[20];
  char salary[20];
 } emp;

 printf("Enter employee ID\n");
 gets(emp.empId);
 printf("Enter First Name\n");
 gets(emp.fname);
 printf("Enter Middle Name\n");
 gets(emp.mname);
 printf("Enter Last Name\n");
 gets(emp.lname);
 printf("Enter Date of Joining\n");
 gets(emp.doj);
 printf("Enter Designation\n");
 gets(emp.desig);
 printf("Enter Grade\n");
 gets(emp.grade);
 printf("Enter Salary\n");
 gets(emp.salary);

 printf("\nName : %s %s %s\n",emp.fname,emp.mname,emp.lname);

 printf("Employee ID : %s\t Date of Joining : %s\n",emp.empId,emp.doj);
```

```
 printf("Designation : %s\t Grade : %s\n",emp.desig,emp.grade);

 printf("Salary : %s",emp.salary);

}
```

Program10:-

```
#include<stdio.h>

main()
{
 struct Student
 {
  char name[50];
  char group[10];
  char sec[10];
  char gender[20];
 } s[10];

 int i,j;
 for(i=0;i<10;i++)
 {
  printf("Enter Credentials For Student %d\n",i+1);

   printf("Name\n");
   gets(s[i].name);
   printf("Class\n");
   gets(s[i].group);
   printf("Section\n");
   gets(s[i].sec);
   printf("Gender\n");
   gets(s[i].gender);

 }

 for(i=0;i<10;i++)
 {
  printf("Student %d:\n",i+1);

  printf("Name: %s\t Gender: %s\n",s[i].name,s[i].gender);

  printf("Class: %s\t Section: %s\n\n",s[i].group,s[i].sec);
 }
}
```