ASSIGNMENT 1

QUESTION 1:-

INPUT: mark1 , mark2

OUTPUT: average=(mark1+mark2)/2

STEP 1: Start

STEP 2: Declare the variables mark1, mark 2,avg and sum .

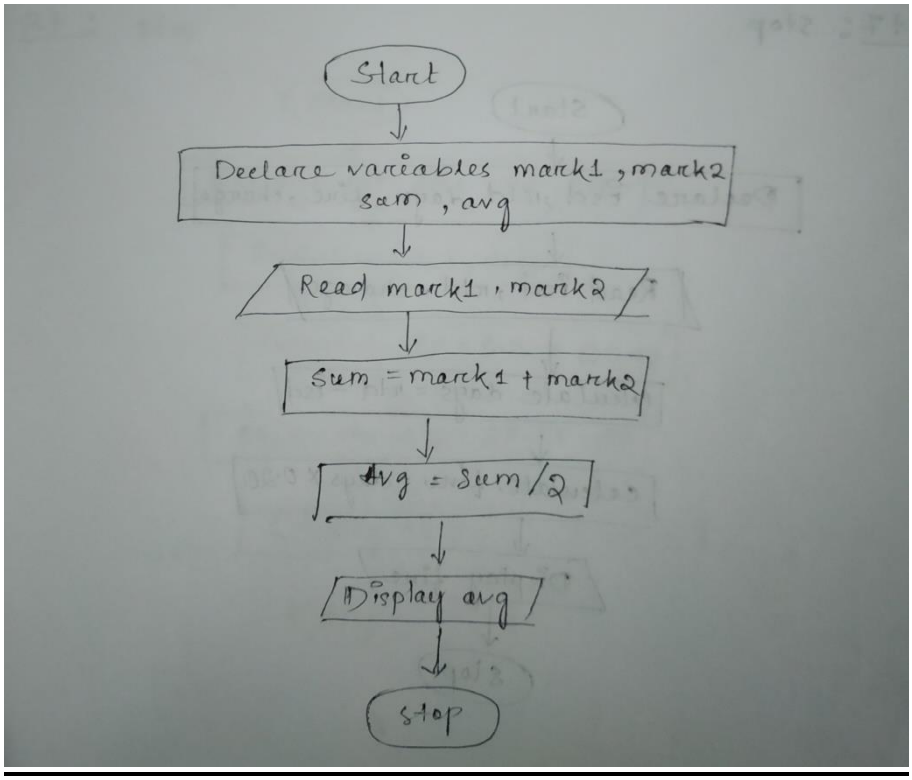
STEP 3: Read the variables mark1 and mark2.

STEP 4: Add both the marks and assign the sum and calculate the avg by dividing the sum by 2.

STEP 5: Print avg.

STEP 6: Stop.

FLOWCHART



QUESTION:-2

INPUT: isd , rtd , td

OUTPUT: fine.

STEP 1 : Start.

STEP 2 : Declare isd , rtd , td,x,y,z,a,charge

STEP 3 : Read issued date ,return date and today assign them in isd , rtd and td respectively.

STEP 4 : Calculate total date assigned it to x

x<- rtd - isd

STEP 5 : Now calculate days of book kept and assign it to y

y<-td-isd

STEP 6 : Calculate total days to be fined and assign it to z

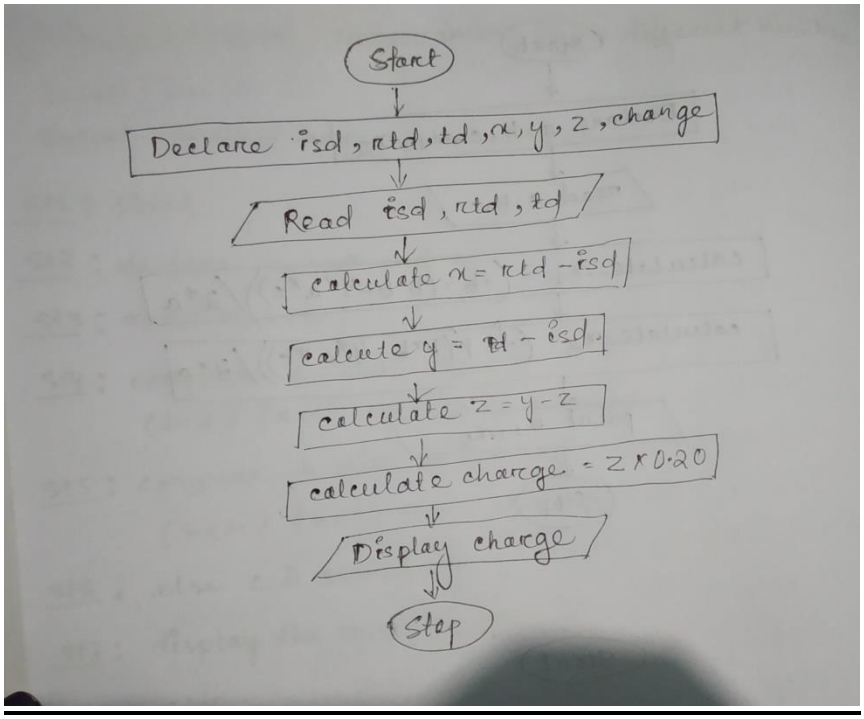
Z<-y-x

STEP 7: now calculate charges charge<-z*0.20

STEP 8 : Display charge

STEP 9: Stop

FLOWCHART:



QUESTION:-3

INPUT: cst,disc

OUTPUT:netp

STEP 1 : Start.

STEP 2 : Declare cst,disc,dp,netp.

STEP 3 : Initialize cst and disc.

STEP 4 : Calculate discounted price and assig in dp.

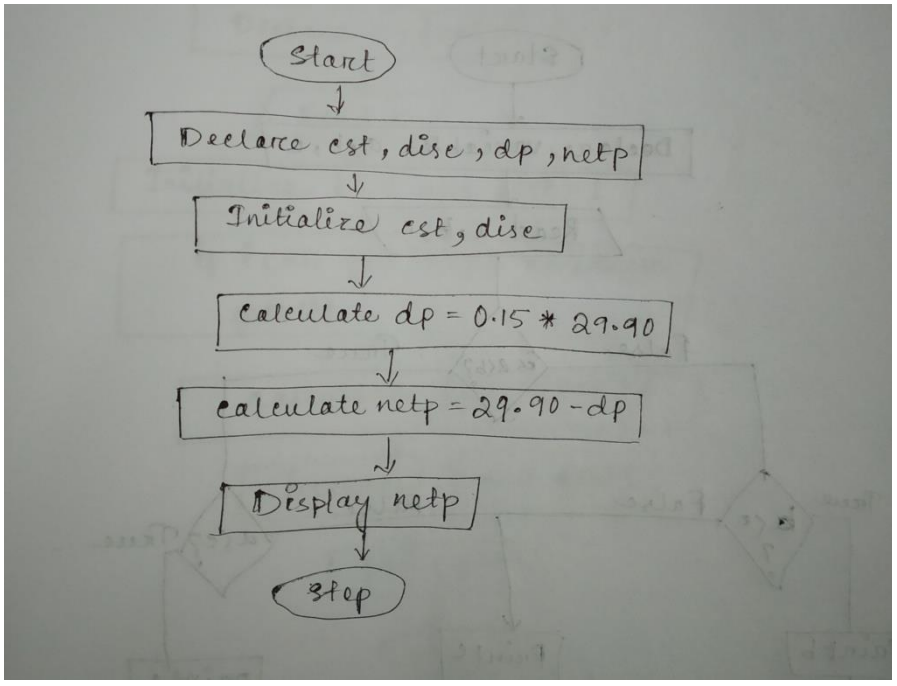
Dp<-0.15*cst

STEP 5 : Calculate net price and assign in netp.

STEP 6 : Display netp.

STEP 7 : Stop.

FLOWCHART:



QUESTION:-4

INPUT: a,b,c

OUTPUT: Smallest among three

STEP 1 : Start

STEP 2 : declare a, b , c and smallest

STEP 3 : Read a,b,c

STEP 4 : Compare a with b and c

(a<b) (a<c) then a is smallest

STEP 5 : Compare b with a and c

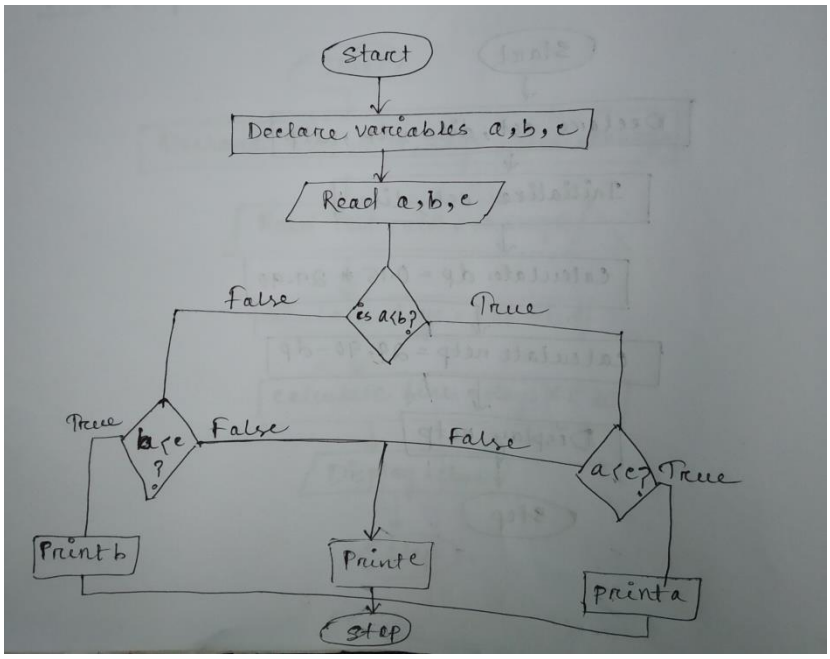
(b<a) (b<c) then b is smallest

STEP 6 : else c is smallest;

STEP 7: Display Smallest

STEP 8 : Stop.

FLOWCHART:



QUESTION:-5

INPUT: a,b,c

OUTPUT: x1,x2

STEP 1 : Start

STEP 2 : Declare a, b,c,X1,X2.

STEP 3 : read a, b ,c

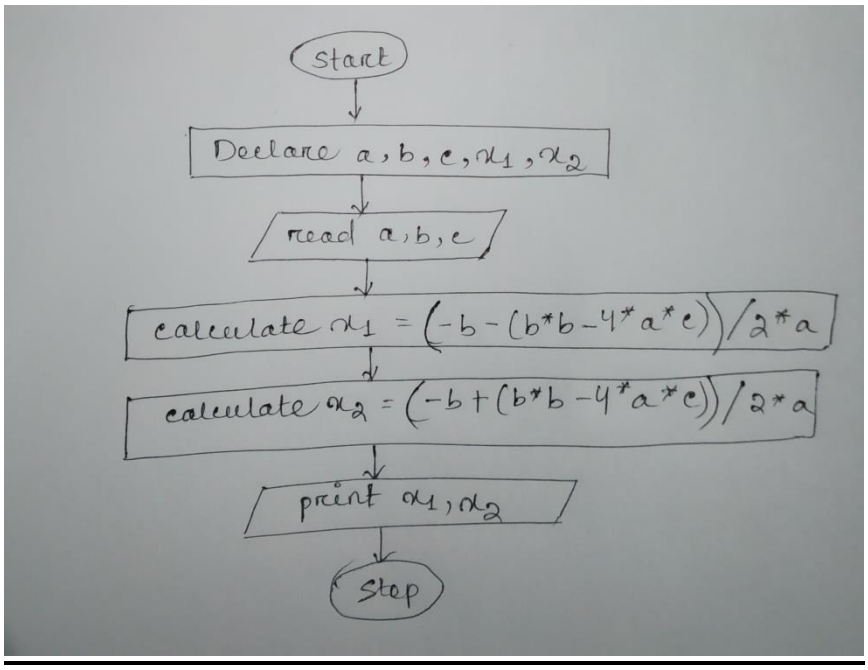
STEP 4 : Calculate x1=(-b-(b*b-4*a*c))/2*a.

STEP 5 : Calculate x2=(-b+(b*b-4*a*c))/2*a.

STEP 6 : Print x1,x2.

STEP 7 : Stop

FLOWCHART:



QUESTION : - 6

INPUT:no

OUTPUT: factorial

STEP 1 : Start

STEP 2 : Declare no,fact,i.

STEP 3 : Read no

STEP 4 : Initialize i=1 and fact =1.

STEP 5 : If i < no then go to STEP6 otherwise go to STEP8

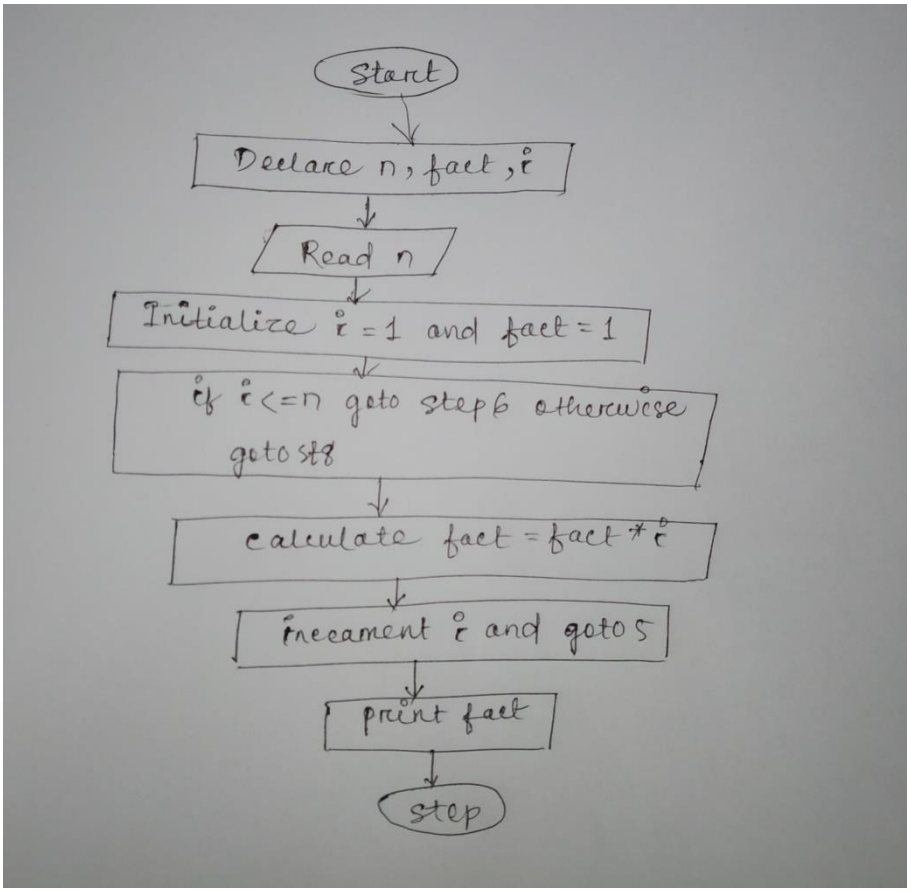
STEP 6 : Calculate fact = fact *i.

STEP 7 : Increament i and go to STEP5.

STEP 8 : Print fact.

STEP 9 : Stop

FLOWCHART:



ASSIGNMENT 2

QUESTION 1:

```
#include <stdio.h>
int main()
{
   printf("DIPIKA TAREI-SOA University");
   return 0;
```

```
}
```

OUTPUT:

DIPIKA TAREI-SOA University

QUESTION 2:

```
#include <stdio.h>
 int main()
  {
     printf("Name   : DIPIKA TAREI\n");
     printf("Mobile   :6370350626\n");
     printf("Email ID : dipikatarei1999@gmail.com\n");
     return 0;
  }
```

OUTPUT:

Name : DIPIKA TAREI

Mobile   :6370350626

Email ID : dipikatarei1999@gmail.com

QUESTION:3

```
#include <stdio.h>
int main()
{
  int Integer;
  char Character;
  float InputFloat;
   printf(" Please Enter an Integer Value :  ");
  scanf("%c", &Integer);
```

```
   printf(" Please Enter a character :  ");
  scanf("%d", &Character);
   printf(" Please Enter Float Value :  ");
  scanf("%f", &InputFloat);
   printf(" \n The Integer Value that you Entered is :  %d", Integer);
  printf(" \n The Character that you Entered is :  %c", Character);
  printf(" \n The Float Value that you Entered is :  %f", InputFloat);
  return 0;
}
```

OUTPUT:

```
Please Enter an Integer Value :  8
 Please Enter a character :  S
  Please Enter Float Value :   4.6
```

QUESTION:4

```
#include<stdio.h>
int main()
{
  int number, cube;
   printf(" \n Please Enter any integer Value : ");
  scanf("%d", &number);
    cube = number * number * number;
    printf("\n Cube of a given number %d is  =  %d", number, cube);
 return 0;
}
```

OUTPUT:

Please Enter any integer Value : 4

Cube of a given number 4 is = 64

QUESTION:-5

```
#include <stdio.h>
int main() {
int a,b,c,d,e,sum;
printf("enter five numbers");
scanf("%d%d%d%d%d",&a,&b,&c,&d,&e);
sum=a+b+c+d+e;
printf("\nSum of five number is = %d",sum);
return 0;
}
```

OUTPUT:

enter five numbers:0 7 1 4 3

Sum of five number is = 15

QUESTION :-6

```
#include <stdio.h>
int main()
{
   int mrk1, mrk2;
   float avg;

   printf("Enter first number: ");
   scanf("%d",&mrk1);
```

```
    printf("Enter second number: ");
    scanf("%d",&mrk2);

    avg= (mrk1+mrk2)/2;

    printf("Average of %d and %d is:%f",mrk1,mrk2,avg);
  return 0;
}
```

OUTPUT:

Enter first number: Enter second number: Average of 47 and 78 is:62.500000

QUESTION:-7

```
#include <stdio.h>
int main()
{
    int isd,rtd,td,x,y,z;
    float charge;
    printf("Enter issued date:");
    scanf("%d",&isd);
    printf("Enter return date:");
    scanf("%d",&rtd);
    printf("Enter today:");
    scanf("%d",&td);
    x=rtd-isd;
    y=td-isd;
    z=y-x;
```

```
   charge=z*0.20;
   printf("Total fined charge is %f :",charge);
    return 0;
}
```

OUTPUT:

Enter issued date:12

Enter return date:20

Enter today:28

Total fined charge is 1.600000 :

QUESTION:-8

```
#include <stdio.h>
int main()
{
float disc=0.15,cst=29.00,dp,netp;
dp=29.00*0.15;
netp=29.00-dp;
printf("net price for shirt is %f:",netp);
    return 0;
}
```

OUTPUT:

net price for shirt is 24.650000:

QUESTION:9

```
#include <stdio.h>
int main()
{
   int a, b;
   printf("Enter Value of a:");
   scanf("%d", &a);
   printf("Enter Value of b:");
   scanf("%d", &b);
  int c = a;
   a = b;
   b = c;
  printf("\nAfter Swapping: a= %d, b = %d", a, b);
   return 0;
}
```

INPUT:

Enter Value of a:Enter Value of b:87 64

OUTPUT:

Enter Value of a:Enter Value of b:

After Swapping: a= 64, b = 87

QUESTION:10

```
#include <stdio.h>
int main()
{
   int a=40, b=50;
   printf("Before swap a=%d b=%d:",a,b);
```

```
  a = a+b;
   b=a-b;
   a=a-b;
  printf("\nAfter Swapping: a= %d, b = %d", a, b);
   return 0;
}
```

OUTPUT:

Before swap a=40 b=50:

After Swapping: a= 50, b = 40

ASSIGNMENT 3

QUESTION:1

```
#include<stdio.h>
int main()
{
   int a=125,b=12345,e,h,i;
   long ax=1234567890,j,k,l,m;
   short s=4043;
   float x=2.13459,f;
   double dx=1.1415927,g;
   char c='W';
   unsigned long ux=2541567890;
   e=a+c;
   printf("a+c=%d",&e);
   f=x+c;
   printf("x+c=%f",&f);
```

```
    g=dx+x;
    printf("dx+x=%lf",&g);
    h=a+x;
    printf("a+x=%d",&h);
    i=s+b;
    printf("s+b=%d",&i);
    j=ax+b;
    printf("ax+b=%ld",&j);
    k=s+c;
    printf("s+c=%ld",&k);
    l=ax+c;
    printf("ax+c=%ld",&l);
    m=ax+ux;
    printf("ax+ux=%ld",&m);
}
```

OUTPUT:

a+c=-1057560308x+c=0.000000dx+x=0.000000a+x=-1057560304s+b=-1057560300ax+b=140732135827752s+c=140732135827760ax+c=140732135827768ax+ux=140732135827776

QUESTION:2

```
#include<stdio.h>
int main()
{
    int d, yr, w;
    d = 1180;
```

```
    yr = d/365;
    w = (d % 365)/7;
    d = d- ((yr*365) + (w*7));
    printf("Years: %d\n", yr);
    printf("Weeks: %d\n", w);
    printf("Days: %d \n", d);
    return 0;
}
```

OUTPUT:

Years: 3

Weeks: 12

Days: 1

QUESTION:3

```
#include <stdio.h>
int main()
  {
float weight1, No1, weight2, No2, result;
    printf("Enter the weight of first item :");
scanf("%f", &weight1);
printf("Enter the no of purchase of First item ");
scanf("%f", &No1);
printf("Enter the weight of second item: ");
scanf("%f", &weight2);
printf("Enter the no of purchase  of second item");
scanf("%f", &No2);
```

```
result = ((weight1 * No1) + (weight2 * No2)) / 2;
printf("Average Value = %f\n", result);
return 0;
}
```

OUTPUT:

```
Enter the weight of first item :60
Enter the no of purchase of First item 9
Enter the weight of second item: 30
Enter the no of purchase  of second item6
Average Value = 360.000000
```

QUESTION:4

```
#include <stdio.h>
int main()
{
enum week{Sun, Mon, Tue, Wed, Thu, Fri, Sat};
printf("Sun = %d", Sun);
printf("\nMon = %d", Mon);
printf("\nTue = %d", Tue);
printf("\nWed = %d", Wed);
printf("\nThu = %d", Thu);
printf("\nFri = %d", Fri);
printf("\nSat = %d", Sat);
return 0;
}
```

OUTPUT:

Sun = 0

Mon = 1

Tue = 2

Wed = 3

Thu = 4

Fri = 5

Sat = 6

QUESTION:5

```
#include <stdio.h>
int main()
{
   float celsius,fahrenheit;
   printf("Enter temperature in celsius:");
   scanf("%f",&celsius);
   fahrenheit=(celsius*9/5)+32;
   printf("the temperature in fahrenheit=%f",fahrenheit);
   return 0;
}
```

OUTPUT:

```
Enter temperature in celsius:6
the temperature in fahrenheit=42.799999
```

QUESTION:6

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

```
{
   int minutes, hr,min;
   minutes = 1050;
   hr = minutes/60;
   min=minutes%60;
   printf("hours: %dhr\n", hr);
   printf("minutes: %dmins\n", min);
   return 0;
}
```

OUTPUT:

hours: 17hr

minutes: 30mins

QUESTION:7

```
#include <stdio.h>
int main()
{
   float height, width, perimeter;
   printf("Enter height of the rectangle: ");
   scanf("%f", &height);
   printf("Enter width of the rectangle: ");
   scanf("%f", &width);
   perimeter = 2 * (height + width);
   printf("Perimeter of rectangle = %f units ", perimeter);
 return 0;
}
```

OUTPUT:

Enter height of the rectangle: 60

Enter width of the rectangle: 40

Perimeter of rectangle = 200.000000 units

QUESTION:8

```
#include<stdio.h>
int main()
{
   int a=5,b=20,c;
   c=a+b;
   printf("a+b=%d\n",c);
   c=a/b;
   printf("a/b=%d\n",c);
   c%=a;
   printf("c=%d\n",c);
   printf("%d>=%d is %d\n",a,b,a>=b);
   c=a!=b;
   printf("a!=b is %d\n",c);
   }
```

OUTPUT:

a+b=25

a/b=0

c=0

5>=20 is 0

a!=b is 1

QUESTION:9

```
#include<stdio.h>
int main()
{
 int a=21,b=20,c=10,num=100,i,result;
 printf("output=%d",a&b);
 printf("output=%d",a|b);
 for(i=0;i<2;i++)
 {
    printf("rightshift by %d:%d\n",i,num>>i);
 }
 i=((num==106)?(2):(3));
 printf("the value of i is :%d\n",i);
 result=(b==c)||(c>a);
 printf("((b==c)||((c>a)) is %d\n",result);
 return 0;
}
```

OUTPUT:

```
output=20output=21rightshift by 0:100
rightshift by 1:50
the value of i is :3
((b==c)||((c>a)) is 0
```

QUESTION:10

```
#include<stdio.h>
int main() {
    int i;
    float f;
    double d;
    char c;
    printf("Size of int: %zu bytes\n", sizeof(int));
    printf("Size of float: %zu bytes\n", sizeof(float));
    printf("Size of double: %zu bytes\n", sizeof(double));
    printf("Size of char: %zu byte\n", sizeof(char));
     return 0;
}
```

OUTPUT:

```
Size of int: 4 bytes
Size of float: 4 bytes
Size of double: 8 bytes
Size of char: 1 byte
```

ASSIGNMENT 4

QUESTION:-1

```
#include <stdio.h>
int main()
{
  char ch;
  printf("Input a character\n");
```

```
  scanf("%c", &ch);
  if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' &&ch <= 'Z')) {
    if (ch=='a' || ch=='A' || ch=='e' || ch=='E' || ch=='i' || ch=='I' || ch=='o' || ch=='O' || ch== 'u' ||
ch=='U')
      printf("%c is a vowel.\n", ch);
    else
      printf("%c is a consonant.\n", ch);
  }
  else
    printf("%c is neither a vowel nor a consonant.\n", ch);
  return 0;
}
```

OUTPUT:

Input a character

J

J is a consonant.

QUESTION:2

```
#include <stdio.h>
#include<math.h>
int main() {
    double a, b, c, discriminant, root1, root2, realPart, imagPart;
    printf("Enter coefficients a, b and c: ");
    scanf("%lf %lf %lf", &a, &b, &c);

 discriminant = b * b - 4 * a * c;
    if (discriminant > 0) {
        root1 = (-b + sqrt(discriminant)) / (2 * a);
        root2 = (-b - sqrt(discriminant)) / (2 * a);
        printf("root1 = %.2lf and root2 = %.2lf", root1, root2);
    }
```

```
   else if (discriminant == 0) {
      root1 = root2 = -b / (2 * a);
      printf("root1 = root2 = %.2lf;", root1);
   }

   else {
      realPart = -b / (2 * a);
      imagPart = sqrt(-discriminant) / (2 * a);
      printf("root1 = %.2lf+%.2lfi and root2 = %.2f-%.2fi", realPart, imagPart, realPart, imagPart);
   }
 return 0;}
```

OUTPUT:

```
Enter coefficients a,b and c: 2 4 6
Root1= -1.00+41i and root2= -1.00-1.41i
```

QUESTION:3

```
#include <stdio.h>
int main()
{
   int y;
 printf("Enter year: ");
   scanf("%d",&y);
  if(y % 4 == 0)
   {
      if( y % 100 == 0)
    {
         if ( y % 400 == 0)
            printf("%d is a Leap Year", y);
         else
```

```
            printf("%d is not a Leap Year", y);
        }
        else
            printf("%d is a Leap Year", y );
    }
    else
        printf("%d is not a Leap Year", y);
  return 0;
}
```

OUTPUT:

Enter year: 2001

is not a Leap Year

QUESTION:4

```
#include<stdio.h>
int main()
{
int a,b;
int x=90;
int y=50;
a=100-x;
printf("the value of a is %d\n",x);
b=100-y;
printf("the value of b is %d\n",y);

if(a>=b){
            if(a>b)
            {
                        printf("%d is nearest value of 100\n",y);
            }
            else
```

```
        {
                printf("return o\n");
        }
}
else
{
printf("%d is nearest value of 100\n",x);
}
return 0;
}
```

OUTPUT:-

The value of a is 90

The value of b is 50

90 is nearest value of 100

QUESTION:5

```
#include<stdio.h>
int main()
{
        int a,b,c,largest,middle,smallest,dif1,dif2;
        printf("enter three numbers: ");
        scanf("%d%d%d",&a,&b,&c);
        if(a>=b && a>=c)
        {
                largest=a;
                if(b>c)
                {
                middle=b;
                smallest=c;
                }
```

```
		else
		{
			middle=c;
			smallest=b;
		}
}
if(b>=a && b>=c)
{
		largest=b;
		if(a>c)
		{
		middle=a;
		smallest=c;
		}
		else
		{
			middle=c;
			smallest=a;
		}
}
if(c>=b && c>=a)
{
		largest=c;
		if(a>b)
		{
			middle=a;
			smallest=b;
		}
		else
		{
			middle=b;
```

```
                    smallest=a;
                }
        }
        printf("largest no=%d middle no=%d smallest number=%d\n",largest,middle,smallest);
        dif1=middle-smallest;
        dif2=largest-middle;
        if(dif1==dif2)
        {
                printf("true\n");
        }
        else{
                printf("false\n");
        }
        }
```

OUTPUT:-Enter three numbers: 10 20 30

Largest no=30 middle no=20 smallest no=10

True

QUESTION:6

```
#include<stdio.h>
void main()
{
   long cid;
   char name[50];
   float amount,unit;
   printf("Enter the name of the customer : ");
   gets(name);
   printf("Enter the customer ID : ");
   scanf("%ld",&cid);
   printf("Enter the number of units : ");
```

```
    scanf("%f",&unit);
    if(unit<=199)
       {
       amount=unit*1.2;
       }
    else if(unit <400)
       {
       amount=unit*1.5;
       }
    else if(unit <600)
       {
       amount=unit*1.8;
       }
    else
       {
       amount=unit*2;
       }
    if(amount<100){
    amount=100;
    }
    if(amount>400){
    amount+=0.15*amount;
    }

    printf("\n\nCUSTOMER ID : %ld\n",cid);
    printf("CUSTOMER NAME : %s\n",name );
    printf("UNITS : %0.2f\n",unit);
    printf("AMOUNT : %0.2f",amount);
}
```

OUTPUT:-

```
        Enter the name of the customer:dipika
```

Eter the customer ID: 00546

Enter the number of units:250

CUSTOMER ID:546

CUSTOMER NAME:dipika

UNITS:250.00

AMOUNT:375

QUESTION:7

```
#include<stdio.h>
void main()
{
int m1,m2,m3,avg;
printf("Enter the marks of 3 subjects : ");
scanf("%d %d %d",&m1,&m2,&m3);
avg=(m1+m2+m3)/3;
printf("Average : %d\n",avg);
if(avg>=90)
   printf("GRADE : A");
else if(avg>=80)
   printf("GRADE : B");
else if(avg>=70)
   printf("GRADE : C");
else if(avg>=60)
   printf("GRADE : D");
else
   printf("GRADE : F");

}
```

OUTPUT:-

Enter the marks of three subjects: 50 50 50

Average: 50

Grade: F

QUESTION:8

```
#include <stdio.h>
int main()
{
   int month;
   printf("Enter month number(1-12): ");
   scanf("%d", &month);

   switch(month)
   {
      case 1:
         printf("31 days");
         break;
      case 2:
         printf("28/29 days");
         break;
      case 3:
         printf("31 days");
         break;
      case 4:
         printf("30 days");
         break;
      case 5:
         printf("31 days");
         break;
```

```
        case 6:
           printf("30 days");
           break;
        case 7:
           printf("31 days");
           break;
        case 8:
           printf("31 days");
           break;
        case 9:
           printf("30 days");
           break;
        case 10:
           printf("31 days");
           break;
        case 11:
           printf("30 days");
           break;
        case 12:
           printf("31 days");
           break;
        default:
           printf("Invalid input!");
    }
     return 0;
}
```

OUTPUT:

Enter month number(1-12):2

Enter month number(1-12): 28/29 days

QUESTION:9

```
#include<stdio.h>
int main()
{
   int a=4, b=7, result;
   char operator;

   printf("Enter an operator: ");
   scanf("%c", &operator);

   switch(operator)
   {
      case '+':
         result = a + b;
         break;
      case '-':
         result = a - b;
         break;
      case '*':
         result = a * b;
         break;
      case '/':
         result = a / b;
         break;
   }
    printf("Result = %d", result);
    return 0;
}
```

OUTPUT:

Enter an operator:*

Enter an operator: Result = 28

QUESTION:-10

```
#include<stdio.h>
void main()
{
   char Grade;
   printf("Enter the Grade");
   scanf("%c",& Grade);
   switch(Grade)
   {
      case 'A':
      printf("Excellent");
      break;
      case 'B':
      printf("Good");
      break;
      case 'C':
      printf("Average");
      break;
      case 'D':
      printf("Deficient");
      break;
      case 'F':
      printf("Failing");
      break;
      default:
      printf("INVALID");
        }
}
```

OUTPUT:

Enter the Grade C

C

Average

QUESTION:11

```
#include<stdio.h>
void main()
{
int s1,s2,s3;
printf("Enter three sides of the triangle : ");
scanf("%d %d %d",&s1,&s2,&s3);
if(s1==s2){
   if(s2==s3){
   printf("It is an equilateral triangle.");
   }
   else{
   printf("It is an isoceles triangle.");
   }
}
else if(s3==s2){

   printf("It is an isoceles triangle.");

}
else if(s3==s1){

   printf("It is an isoceles triangle.");

}
else{
printf("It is a scalene triangle.");
}
}
```

OUTPUT:-

Enter the three sides of the triangle: 4 7 4

It is an isoscale triangle.

QUESTION:12

```
#include<stdio.h>
void main(){
int num;
printf("Enter a number : ");
scanf("%d",&num);
if(num%2==0){
printf("It is an even number.");
}
else{
printf("It is an odd number.");
}}
```

OUTPUT:- enter a number :6

It is a even number

QUESTION:13

```
#include<stdio.h>
void main()
{
char ch;
printf("Enter a character : ");
scanf("%c",&ch);
```

```
if((ch>=65 && ch<=90) || (ch>=97 && ch<=122)){
printf("It is an alphabet.");
}
else{
printf("It is not an alphabet");
}
}
```

OUTPUT:-

Enter a character :e

It is an alphabet

QUESTION:14

PROGRAM:-

```
        #include<stdio.h>
void main(){
int a,b,c,largest;
printf("Enter three numbers : ");
scanf("%d %d %d",&a,&b,&c);
largest=a>b?(a>c?a:c):(b>c?b:c);
printf("%d is the largest.",largest);
}
```

OUTPUT:-

Enter three numbers: 4 7 9

9 is the largest

QUESTION:15

```
#include<stdio.h>
void main(){
int a,b,large,small;
printf("Enter 2 numbers : ");
```

```
scanf("%d %d",&a,&b);
if(a>b){
large=a;
small=b;
}
else if(b>a){
large=b;
small=a;
}
else{
printf("0");
return 0;
}
printf("The larger number is %d\nThe smaller number is %d\n",large,small);
if((a%5)==(b%5)){
printf("%d",small);
}

}
```

OUTPUT:-

Enter two number: 4 8

The larger number is 8

The smaller number is 4

QUESTION:16

```
#include<stdio.h>
void main()
{
int math,phy,chem,ncall,amount;
```

```
printf("Enter the marks in Mathematics : ");
scanf("%d",&math);
printf("Enter the marks in Physics : ");
scanf("%d",&phy);
printf("Enter the marks in Chemistry : ");
scanf("%d",&chem);
if(math>=65 && phy>=55 && chem>=50 && ((math+phy+chem)>=190 ||(math+phy)>=140))
   printf("You are eligible");
else
   printf("You are not eligibile");
printf("\n\nEnter the number of calls : ");
scanf("%d",&ncall);
if(ncall<=100){
amount=200;
}
else if(ncall<=150){
amount=200+(0.6*(ncall-100));
}
else if(ncall<=200){
amount=200+30+(0.5*(ncall-150));
}
else{
amount=200+30+25+(0.4*(ncall-200));
}
printf("Your telephone bill amount is : %d",amount);
}
```

OUTPUT:-

Enter the marks in mathematics:89

Enter the marks in physics:85

Enter the marks in chemistry:66

Enter the number of calls:59

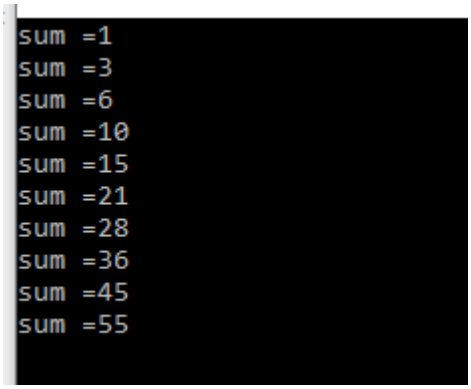
Your telephone bill amount is : 200

ASSIGNMENT 5

QUESTION:1

```
#include<stdio.h>
int main()
{
int i,sum=0;
for(i=1;i<=10;i++)
{
        sum=sum+i;
        printf("sum =%d\n",sum);
        }
}
```

OUTPUT:-

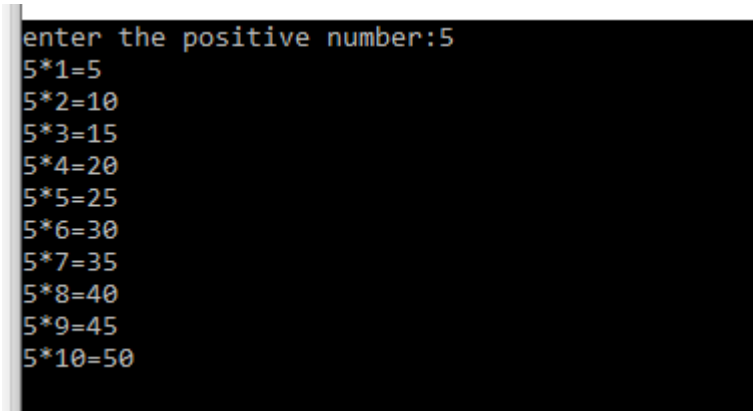


QUESTION:2

```
#include<stdio.h>
int main()
{
        int i=1,n,mul;
        printf("enter the positive number:");
```

```
        scanf("%d",&n);
        while(i<=10)
        {
                printf("%d*%d=%d\n",n,i,(n*i));
                i++;
}
}
```

OUTPUT:-

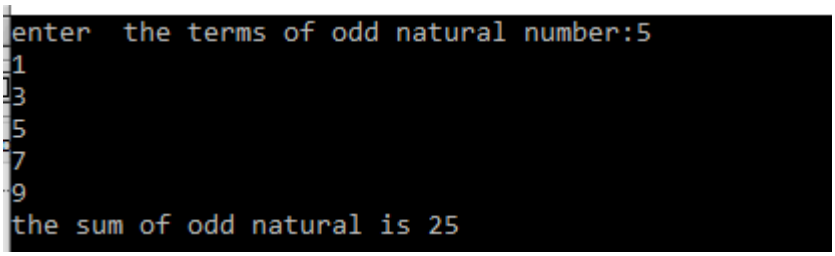


QUESTION:3

```
 #include<stdio.h>
int main()
{
        int i,num,sum=0;
        printf("enter  the terms of odd natural number:");
        scanf("%d",&num);
        i=1;
        do
        {
                printf("%d\n",2*i-1);
                sum=(sum+(2*i-1));
                i++;
        }
```

```
while(i<=num)
{
	printf("the sum of odd natural is %d",sum);
}
```

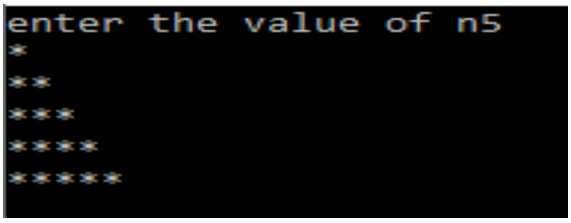
OUTPUT:-



QUESTION:4

```
#include<stdio.h>
int main()
{
	int i, j,n ;
	printf("enter the value of n");
	scanf("%d",&n);
	for(i=1;i<=n;i++)
	{
		for(j=1;j<=i;j++)
		{
			printf("*");
		}
	printf("\n");
	}
}
```

OUTPUT:-



QUESTION:5

```
#include<stdio.h>
int main()
{
        int i=1,j=1,n,value;
        printf("enter the number of rows\n");
        scanf("%d",&n);
        printf("\n");
        while(j<=n)
        {
        value=1;
                while(value<=j)
                {
                printf("%d",i);
                i++;
                value++;
                }
                j++;
                printf("\n");
        }
        return 0;
}
```

OUTPUT:-

```
enter the number of rows
4

1
23
456
78910

--------------------------------
```

QUESTION:6

```
#include<stdio.h>

int main()

{

int x=1,i=1,j;

do{

j=5-i;

   do{

   printf(" ");

   j--;

   }while(j>0);

j=i;

   do{

   printf("%d ",x);x++;j--;

   }while(j>0);

printf("\n");

i++;

}while(i<5);

return 0;

}
```

OUTPUT:-

```
    1
   2 3
  4 5 6
 7 8 9 10
```

QUESTION:7

```
#include<stdio.h>
int main()
{
   int row,c=1,x,i,j;
   printf("Input number of rows: ");
   scanf("%d",&row);
   for(i=0;i<row;i++)
   {
      for(x=1;x<=row-i;x++)
      printf("  ");
      for(j=0;j<=i;j++)
      {
         if (j==0||i==0)
            c=1;
         else
           c=c*(i-j+1)/j;
         printf("% 4d",c);
      }
      printf("\n");
   }
}
```

OUTPUT:-

QUESTION:8

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

```
int main() {
   int i, n, t1 = 0, t2 = 1, nextTerm;
   printf("Enter the number of terms: ");
   scanf("%d", &n);
   printf("Fibonacci Series: ");

   for (i=1; i<=n;i++)
          {
      printf("%d\t", t1);
      nextTerm = t1 + t2;
      t1 = t2;
      t2 = nextTerm;
    }

   return 0;
}
```

OUTPUT:-

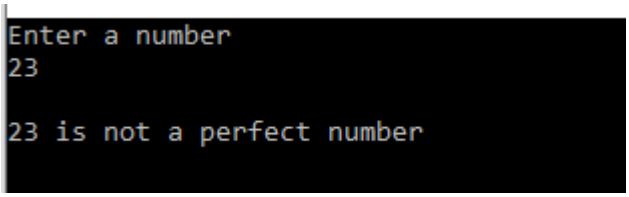
```
Enter the number of terms: 8
Fibonacci Series: 0     1       1       2       3       5       8       13
--------------------------------
Process exited after 1.926 seconds with return value 0
Press any key to continue . . .
```

QUESTION:9

```
#include<stdio.h>
int main()
{
int num, count = 1, sum = 0;
  printf("Enter a number\n");
   scanf("%d", &num);
    while(count < num)
```

```
    {
        if(num%count == 0)
        {
            sum = sum + count;
        }
        count++;
    }
    if(sum == num)
    {
        printf("\n%d is a perfect number\n", num);
    }
    else
    {
        printf("\n%d is not a perfect number\n", num);
    }
    return 0;
}
```

OUTPUT:-

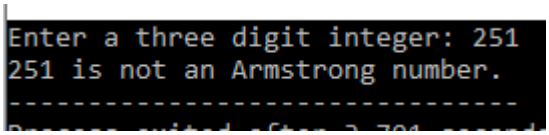


QUESTION:10

```
#include<stdio.h>
int main()
{
int num,originalNum, r, result = 0;
    printf("Enter a three digit integer: ");
    scanf("%d", &num);
    originalNum = num;
```

```
    while (originalNum != 0)
            {
       r = originalNum % 10;
      result=(result+(r * r * r));
      originalNum /= 10;
    }
      if (result == num)
       printf("%d is an Armstrong number.", num);
    else
       printf("%d is not an Armstrong number.", num);

    return 0;
}
```

OUTPUT:-

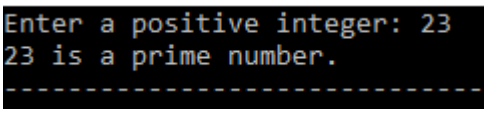


QUESTION:11

```
#include <stdio.h>
int main() {
    int n, i=2, flag = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &n);

    do{
        if (n % i == 0)
      {
          flag = 1;
          break;
```

```
        }
        ++i;
    }while(i <= n / 2);

    if (n == 1) {
        printf("1 is neither prime nor composite.");
    }
    else if(n==2){
        printf("2 is a prime number");
    }
    else {
        if (flag == 0)
            printf("%d is a prime number.", n);
        else
            printf("%d is not a prime number.", n);
    }
 return 0;
}
```

OUTPUT:-



QUESTION:12

```
#include <stdio.h>
int main() {
    int n, rev = 0, r;
    printf("Enter an integer: ");
    scanf("%d", &n);
    do {
        r = n % 10;
```

```
        rev = rev * 10 + r;
        n /= 10;
    }while (n != 0);
    printf("Reversed number = %d", rev);
    return 0;
}
```

OUTPUT:-

```
Enter an integer: 345
Reversed number = 543
```

QUESTION:13

```
#include <stdio.h>
int main()
{   long int n,i,t=9;
            int sum =0;
            printf("Input the number or terms :");
            scanf("%ld",&n);
            for (i=1;i<=n;i++)
            { sum =sum+t;
              printf("%ld   ",t);
              t=t*10+9;
            }
            printf("\nThe sum of the series = %d \n",sum);
            return 0;
}
```

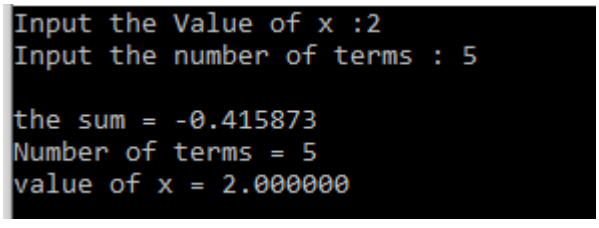
OUTPUT:-

```
Input the number or terms :5
9   99   999   9999   99999
The sum of the series = 111105

--------------------------------
```

QUESTION:14

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

float x,sum,t,d;
        int i=1,n;
        printf("Input the Value of x :");
        scanf("%f",&x);
        printf("Input the number of terms : ");
        scanf("%d",&n);
        sum =1; t = 1;
        while (i<n)
        {
          d = (2*i)*(2*i-1);
          t = -t*x*x/d;
          sum =sum+ t;
          i++;
        }
        printf("\nthe sum = %f\nNumber of terms = %d\nvalue of x = %f\n",sum,n,x);
}
```

OUTPUT:-

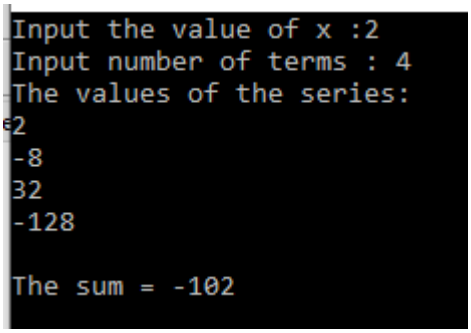


QUESTION:15

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

```
        int x,sum,ctr;
        int i=1,n,m,mm,nn;
        printf("Input the value of x :");
        scanf("%d",&x);
        printf("Input number of terms : ");
        scanf("%d",&n);
        sum =x; m=-1;
        printf("The values of the series: \n");
        printf("%d\n",x);
   do
   {
      ctr = (2 * i + 1);
      mm = pow(x, ctr);
      nn = mm * m;
      printf("%d \n",nn);
      sum = sum + nn;
      m = m * (-1);
      i++;
          }while(i<n);
          printf("\nThe sum = %d\n",sum);
          return 0;
}
```

OUTPUT:-



ASSIGNMENT 6

QUESTION 1:

```
#include<stdio.h>
int main()
{
  int number, i, sum=0;
  for(i=0;i<=10;i++)
  {
    printf("Enter number: ");
    scanf("%d",&number);
    if ( number<0 )
     break;
    sum = sum + number;
  }
  printf("Sum=%d:",sum);
  return 0;
}
```

OUTPUT:

```
Enter number: 5

Enter number: 7

Enter number: 2

Enter number: -
6

Sum=14:
```

QUESTION 2:

```
#include<stdio.h>
int main()
{
  int number, i, sum=0;
  for(i=0;i<=10;i++)
```

```
 {
   printf("Enter number: ");
   scanf("%d",&number);
   if ( number<0 )
    continue;
   sum =sum+ number;
 }
 printf("Sum=%d",sum);
 return 0;
}
```

OUTPUT:

```
Enter number: 3

Enter number: 7

Enter number: -
7

Enter number: 88

Enter number: 4

Enter number: 9

Enter number: 34

Enter number: 7

Enter number: -3

Enter number: 9

Enter number: 09

Sum=170
```

QUESTION 3:

```
#include<stdio.h>
int main()
{
 int number, i;
```

```
 for(i=0;i <=1;i++)
 {
   printf("Enter a number: ");
    i--;
   scanf("%d",&number);
   if( number==0)
    break;
 }
 printf("you entered 0");
 return 0;
}
```

OUTPUT:

```
Enter a number: 1
Enter a number: 2
Enter a number: 3
Enter a number: 5
Enter a number: 6
Enter a number: 34
Enter a number: 0
you entered 0
```

QUESTION 4:

```
#include <stdio.h>
int main() {
   int n, i, flag = 0;
   printf("Enter a positive integer: ");
   scanf("%d", &n);
   for (i = 2; i <= n / 2; ++i)
{
      if (n % i == 0)
```

```
    {
        flag = 1;
        break;
    }
  }

  if (n == 1) {
    printf("1 is neither prime nor composite.");
  }
  else {
    if (flag == 0)
      printf("%d is a prime number.", n);
    else
      printf("%d is not a prime number.", n);
  }

  return 0;
}
```

OUTPUT:

```
Enter a positive integer: 86

86 is not a prime number.
```

QUESTION 5:

```
#include <stdio.h>
int main()
{
  int i, n, sum;
  for(i=1;i<=10; i=i+2)
  {
    sum =sum+ i;
    if(i>9)
```

```
        break;
    }
    printf("Sum of odd numbers = %d", sum);
    return 0;
}
```

OUTPUT:

```
Sum of odd numbers = 25
```

QUESTION 6:

```
#include <stdio.h>
int main() {
    int n, i, flag = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &n);
    for (i = 2; i <= n / 2; ++i)
{
        if (n % i != 0)
     {
            flag = 1;
            continue;
        }
    }
    if (n == 1) {
        printf("1 is neither prime nor composite.");
    }
    else {
        if (flag == 0)
            printf("%d is a prime number.", n);
        else
            printf("%d is not a prime number.", n);
    }
```

```
    return 0;
}
```

OUTPUT:

```
Enter a positive integer: 1

1 is neither prime nor composite.
```

QUESTION 7:

```
#include <stdio.h>
int main()
{
    int i, n, sum;
    for(i=0;i<=100; i=i+2)
    {
        sum =sum+ i;
        if(i>99)
        break;
    }
    printf("Sum of even numbers = %d", sum);
    return 0;
}
```

OUTPUT:

```
Sum of even numbers = 2550
```

QUESTION 8:

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

    int i=1;
```

```
   lab:
            printf("%d ",i);
            i++;
            if(i<=10)
                        goto lab;
            return 0;
}
```

OUTPUT:

```
1 2 3 4 5 6 7 8 9 10
```

QUESTION 9:

```
#include<stdio.h>
int main()
{
  int number, i, sum=0,j=1;
  float avg;
  for(i=0;i<=10;i=i+2)
  {
    printf("Enter number: ");
    scanf("%d",&number);
    j++;
    if ( number<0 )
     break;
    sum =sum+ number;
  }
  avg=sum/j;
  printf("Sum is=%d and averge is =%f",sum,avg);
  return 0;
}
```

OUTPUT:

```
Enter number: 46

Enter number: 8

Enter number: 2

Enter number: 7

Enter number: -
4

Sum is=141 and averge is =20.000000
```

QUESTION 10:

```
#include <stdio.h>

#include <stdlib.h>

void main()

{

   int num;

   printf("Enter a number: ");

   scanf("%d", &num);


   if (num % 2 == 0)

      goto even;

   else

      goto odd;


even:

   printf("%d is even\n", num);

   exit(0);

odd:

   printf("%d is odd\n", num);

}
```

OUTPUT:

```
Enter a number: 67

67 is odd
```

```
Enter a number: 4

4 is even
```

ASSIGNMENT 7

QUESTION 1

```
#include <stdio.h>
void main()
{
  int i,n,a[100];
  printf("Input the number of elements to store in the array :");
  scanf("%d",&n);
  for(i=0;i<n;i++)
    {
          printf("%d place -  : ",i);
          scanf("%d",&a[i]);
          }
  printf("\nThe values store into the array are : \n");
  for(i=0;i<n;i++)
   {
           printf("% 2d",a[i]);
         }
  printf("\n\nThe values store into the array in reverse are :\n");
  for(i=n-1;i>=0;i--)
    {
           printf("% 2d",a[i]);
          }
  printf("\n\n");
}
```

OUTPUT:

```
Input the number of elements to store in the array :4

0 place -
  : 8

1 place -
  : 5

2 place -
: 9

3 place - : 3

The values store into the array are :

 8 5 9 3

The values store into the array in reverse are :

 3 9 5 8
```

QUESTION 2

```
#include <stdio.h>

void main()

{

   int a[150];

   int i, n, sum=0;

    printf("Input the number of elements:");

    scanf("%d",&n);

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

      {

               printf("%d place  : ",i);

               scanf("%d",&a[i]);

             }


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

   {

      sum += a[i];
```

```
    }

    printf("Sum of all elements is : %d\n\n", sum);
}
```

OUTPUT:

```
Input the number of elements:5
0 place  : 4
1 place  : 5
2 place  : 2
3 place  : 1
4 place  : 0
Sum of all elements is : 12
```

QUESTION 3

```
#include <stdio.h>

void main()
{
   int arr1[100], arr2[100];
   int i, n;

      printf("\n\nCopy the elements one array into another array :\n");

      printf("Input the number of elements to be stored in the array :");
      scanf("%d",&n);

      printf("Input %d elements in the array :\n",n);
```

```
    for(i=0;i<n;i++)
     {
              printf("element - %d : ",i);
              scanf("%d",&arr1[i]);
            }

   for(i=0; i<n; i++)
   {
      arr2[i] = arr1[i];
   }



   printf("\nThe elements stored in the first array are :\n");
   for(i=0; i<n; i++)
   {
      printf("% 5d", arr1[i]);
   }

   printf("\n\nThe elements copied into the second array are :\n");
   for(i=0; i<n; i++)
   {
      printf("% 5d", arr2[i]);
   }
              printf("\n\n");
}
```

OUTPUT

```
Copy the elements one array into another array :

Input the number of elements to be stored in the array :4

Input 4 elements in the array :

element - 0 : 9
```

```
element -
 1 : 7

element -
 2 : 6

element - 3 : 4

The elements stored in the first array are :

    9    7    6    4



The elements copied into the second array are :

    9    7    6    4
```

QUESTION 4

```
#include <stdio.h>

int main()

{

   int arr[150];

   int i, j, size, count = 0;

   printf("Enter size of the array : ");

   scanf("%d", &size);

   printf("Enter elements in array : ");

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

   {

      scanf("%d", &arr[i]);

   }


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

   {

      for(j=i+1; j<size; j++)

      {

         if(arr[i] == arr[j])
```

```
        {
            count++;
            break;
        }
      }
   }

   printf("\nTotal number of duplicate elements found in array = %d", count);

   return 0;
```

OUTPUT

```
Enter size of the array : 4
Enter elements in array : 2 2 5 5


Total number of duplicate elements found in array = 2
```

QUESTION 5

```
#include <stdio.h>
int main()
{
   int a[1000],i,n,min,max;
   printf("Enter size of the array : ");
   scanf("%d",&n);
   printf("Enter elements in array : ");
   for(i=0; i<n; i++)
   {
      scanf("%d",&a[i]);
   }

   min=max=a[0];
```

```
   for(i=1; i<n; i++)
   {
      if(min>a[i])
                        min=a[i];
                         if(max<a[i])
                          max=a[i];
   }
    printf("minimum of array is : %d",min);
        printf("\nmaximum of array is : %d",max);
   return 0;
}
```

OUTPUT

```
Enter size of the array : 4
Enter elements in array : 4 6 8 4
minimum of array is : 4
maximum of array is : 8
```

QUESTION 6

```
#include <stdio.h>

void main()
 {
   int arr1[10], odd[10], even[10];
   int i,j=0,k=0,n;
     printf("Input the number of elements to be stored in the array :");
     scanf("%d",&n);
     for(i=0;i<n;i++)
        {
              printf(" %d place  : ",i);
              scanf("%d",&arr1[i]);
```

```
        }

    for(i=0;i<n;i++)
    {
        if (arr1[i]%2 == 0)
        {
          even[j] = arr1[i];
          j++;
        }
        else
        {
          odd[k] = arr1[i];
          k++;
        }
    }

    printf("\nThe Even elements are : \n");
    for(i=0;i<j;i++)
    {
        printf(" % 2d ",even[i]);
    }

    printf("\nThe Odd elements are :\n");
    for(i=0;i<k;i++)
    {
        printf("% 2d ", odd[i]);
    }
    printf("\n\n");
}
```

OUTPUT

```
Input the number of elements to be stored in the array :4

 0 place  : 4

 1 place  : 5

 2 place  : 3

 3 place  : 8

The Even elements are :

  4   8

The Odd elements are :

 5  3
```

QUESTION 7

```
#include <stdio.h>

void main()

{

  int arr1[100],i,n,p,x;

      printf("Input the size of array : ");

      scanf("%d", &n);

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

     {

               printf("%d element  : ",i);

               scanf("%d",&arr1[i]);

             }



  printf("Input the value to be inserted : ");

  scanf("%d",&x);

  printf("Input the Position, where the value to be inserted :");

  scanf("%d",&p);
```

```
  printf("The curren array is :\n");
  for(i=0;i<n;i++)
    printf("% 5d",arr1[i]);

  for(i=n;i>=p;i--)
  {
    arr1[i]= arr1[i-1];
  }
    arr1[p-1]=x;
  printf("\n\nAfter Insert the element the new list is :\n");
  for(i=0;i<=n;i++)
    printf("% 5d",arr1[i]);
          printf("\n\n");
}
```

OUTPUT

```
Input the size of array : 4
0 element  : 7
1 element  : 8
2 element  : 4
3 element  : 0
Input the value to be inserted : 44
Input the Position, where the value to be inserted :2
The curren array is :
    7    8    4    0

After Insert the element the new list is :
    7   44    8    4    0
```

QUESTION 8

```
#include <stdio.h>
void main(){
 int arr1[50],i,pos,n;

    printf("\n\nDelete an element at desired position from an array :\n");



    printf("Input the size of array : ");
    scanf("%d", &n);

    printf("Input %d elements in the array in ascending order:\n",n);
    for(i=0;i<n;i++)
        {
            printf("element - %d : ",i);
            scanf("%d",&arr1[i]);
           }

 printf("\nInput the position where to delete: ");
 scanf("%d",&pos);

 i=0;
 while(i!=pos-1)
        i++;
         while(i<n){
        arr1[i]=arr1[i+1];
        i++;
 }
 n--;
  printf("\nThe new list is : ");
 for(i=0;i<n;i++)
     {
```

```
                printf("  %d",arr1[i]);
              }
        printf("\n\n");

}
```

OUTPUT

```
Delete an element at desired position from an array :

Input the size of array : 4

Input 4 elements in the array in ascending order:

element -
 0 : 5

element - 1 : 4

element -
 2 : 8

element -
 3 : 5



Input the position where to delete: 0



The new list is :   5  4  8
```

QUESTION 9

```
#include <stdio.h>
void main(){
  int arr1[50],n,i,j=0,fst,tnd;
      printf("Input the size of array : ");
      scanf("%d", &n);
      for(i=0;i<n;i++)
      {
              printf(" %d place : ",i);
              scanf("%d",&arr1[i]);
```

```
            }
 fst=0;
for(i=0;i<n;i++)
{
   if(fst<arr1[i])
           {
       fst=arr1[i];
       j = i;
   }
}
 tnd=0;
for(i=0;i<n;i++)
{
  if(i==j)
    {
      i++;
                    i--;
    }
   else
    {
      if(tnd<arr1[i])
             {
          tnd=arr1[i];
        }
    }
}

 printf("The Second largest element in the array is :  %d \n\n", tnd);
}
```

OUTPUT

```
Input the size of array : 4
 0 place : 6
 1 place : 8
 2 place : 4
 3 place : 5
The Second largest element in the array is :  6
```

QUESTION 10

```
#include <stdio.h>


int getMedian(int ar1[], int ar2[], int n, int m)
{
   int i = 0;
   int j = 0;
   int count;
   int m1 = -1, m2 = -1;
   if((m + n) % 2 == 1) {
      for (count = 0; count <= (n + m)/2; count++) {
         if(i != n && j != m){
         m1 = (ar1[i] > ar2[j]) ? ar2[j++] : ar1[i++];
         }
         else if(i < n){
         m1 = ar1[i++];
         }
         else{
         m1 = ar2[j++];
         }
      }
      return m1;
```

```
    }

    else {
        for (count = 0; count <= (n + m)/2; count++) {
            m2 = m1;
            if(i != n && j != m){
            m1 = (ar1[i] > ar2[j]) ? ar2[j++] : ar1[i++];
            }
            else if(i < n){
            m1 = ar1[i++];
            }
            else{
            m1 = ar1[j++];
            }
        }
        return (m1 + m2)/2;
    }
}

int main()
{
    int ar1[] = {4, 9, 16, 45};
    int ar2[] = {3, 8, 11, 20};

    int n1 = sizeof(ar1)/sizeof(ar1[0]);
    int n2 = sizeof(ar2)/sizeof(ar2[0]);
    printf("The median is:%d", getMedian(ar1, ar2, n1, n2));
    getchar();
    return 0;
}
```

OUTPUT

```
The median is:10
```

QUESTION 11

```
#include<stdio.h>
#include<stdlib.h>
int main(){
int a[3][3],b[3][3],mul[3][3],r,c,i,j,k;
system("cls");
printf("enter the number of row=");
scanf("%d",&r);
printf("enter the number of column=");
scanf("%d",&c);
printf("enter the first matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&a[i][j]);
}
}
printf("enter the second matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&b[i][j]);
}
}
```

```
printf("multiply of the matrix=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
mul[i][j]=0;
for(k=0;k<c;k++)
{
mul[i][j]+=a[i][k]*b[k][j];
}
}
}
//for printing result
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
printf("%d\t",mul[i][j]);
}
printf("\n");
}
return 0;
}
```

OUTPUT

```
enter the number of row=3
enter the number of column=3
enter the first matrix element=
3 4 5 6 7 3 1 5 7
enter the second matrix element=
```

```
5 7 2 0 8 4 2 1 6

multiply of the matrix=

25      58      52

36      101     58

19      54      64
```

QUESTION 12

```
#include <stdio.h>
int main() {
    int a[3][3], transpose[3][3], r, c, i, j;
    printf("Enter rows and columns: ");
    scanf("%d %d", &r, &c);

    printf("\nEnter matrix elements:\n");
    for (i = 0; i < r; ++i)
        for (j = 0; j < c; ++j) {
            printf("Enter element a%d%d: ", i + 1, j + 1);
            scanf("%d", &a[i][j]);
        }
    printf("\nEntered matrix: \n");
    for (i = 0; i < r; ++i)
        for (j = 0; j < c; ++j) {
            printf("%d  ", a[i][j]);
            if (j == c - 1)
                printf("\n");
        }
    for (i = 0; i < r; ++i)
        for (j = 0; j < c; ++j) {
            transpose[j][i] = a[i][j];
        }
```

```
    printf("\nTranspose of the matrix:\n");
    for (i = 0; i < c; ++i)
        for (j = 0; j < r; ++j) {
            printf("%d  ", transpose[i][j]);
            if (j == r - 1)
                printf("\n");
        }
    return 0;
}
```

OUTPUT

```
Enter rows and columns: 3 3


Enter matrix elements:
Enter element a11: 2 5 6 3 4 7 1 5 64
Entered matrix:
2  5  6
3  4  7
1  5  64

Transpose of the matrix:
2  3  1
5  4  5
6  7  64
```

QUESTION 13

```
#include <stdio.h>
void main()
```

```
{
  int i,j,arr1[50][50],sum=0,n,m=0;


          printf("Input the size of the square matrix : ");
  scanf("%d", &n);
     m=n;
          printf("Input elements in the first matrix :\n");
   for(i=0;i<n;i++)
    {
       for(j=0;j<n;j++)
       {
                printf("element - [%d],[%d] : ",i,j);
                scanf("%d",&arr1[i][j]);
       }
    }
          printf("The matrix is :\n");
          for(i=0;i<n;i++)
          {
            for(j=0;j<n ;j++)
              printf("% 4d",arr1[i][j]);
             printf("\n");
          }


          for(i=0;i<n;i++)
          {
       m=m-1;
            for(j=0;j<n ;j++)
       {
         if (j==m)
          {
            sum= sum+arr1[i][j];
```

```
        }


      }
        }
    printf("Addition of the  left Diagonal elements is :%d\n",sum);
  }
```

OUTPUT

```
Input the size of the square matrix : 3 3

Input elements in the first matrix :

element - [0],[0] : element -
 [0],[1] : 3 5

element - [0],[2] : element -
 [1],[0] : 5 7

element - [1],[1] : element -
 [1],[2] : 33 5

element - [2],[0] : element - [2],[1] : 8 5

element -
 [2],[2] : The matrix is :

   3   3   5

   5   7  33

   5   8   5

Addition of the  left Diagonal elements is :17
```

QUESTION 14

```
#include <stdio.h>


int main (void)

{
        int a[3][3];

        int i = 0, j = 0, row = 0, col = 0;
```

```
printf ("Enter the order of the matrix (mxn): ");
scanf ("%d %d", &row, &col);

int flag = 0;

printf ("Enter the elements of the matrix\n");
for (i = 0; i < row; i++)
{
        for (j = 0; j < col; j++)
        {
                scanf ("%d", &a[i][j]);
        }
}

for (i = 0; i < row; i++)
{
        for (j = 0; j < col; j++)
        {
                if (i == j && a[i][j] != 1)
                {
                        flag = -1;
                        break;
                }
                else if (i != j && a[i][j] != 0)
                {
                        flag = -1;
                        break;
                }
        }
}
```

```
        if (flag == 0)
        {
                printf ("It is a IDENTITY MATRIX\n");
        }
        else
        {
                printf ("It is NOT an identity matrix\n");
        }

        return 0;
}
```

OUTPUT

```
Enter the order of the matrix (mxn): 3 3

Enter the elements of the matrix

5 3 57 8 2 8 3 0 9

It is NOT an identity matrix
```

QUESTION 15

```
#include<stdio.h>

void main(){

int mat[5][5]={{10,20,30,40,50},
          {11,22,33,44,55},
          {12,23,34,45,56},
          {13,24,35,46,57},
          {14,25,36,47,58}};

int x,y=0,i,j;
printf("The matrix is : \n");

for(i=0;i<5;i++)
{
        for(j=0;j<5;j++){
        printf("%d\t",mat[i][j]);
        }
```

```
        printf("\n");
}
printf("Enter the element to be searched : ");
scanf("%d",&x);
for(i=0;i<5;i++){
          for(j=0;j<5;j++){
                  if(x==mat[i][j]){
                   printf("%d is found at position [%d][%d]\n",x,i,j);
                    }
  }
}
if(y==0){
   printf("%d is not found in the matrix",x);
}
}
```

OUTPUT

```
The matrix is :

10      20      30      40      50

11      22      33      44      55

12      23      34      45      56

13      24      35      46      57

14      25      36      47      58

Enter the element to be searched : 56

56 is found at position [2][4]

56 is not found in the matrix
```

ASSIGNMENT 8

QUESTION-1

```
#include  <stdio.h>

  int main( )

  {

     char  wd[100], chtr;
```

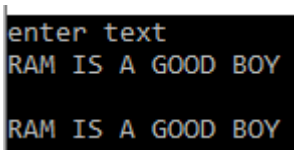
```
    int   i=0;
    printf("enter text \n");
    while(chtr != '\n')
    {
       chtr = getchar();
       wd[i]   = chtr;
       i++;
    }
    printf("\n%s\n", wd);
  }
```

QUESTION-2

PROGRAM:

```
#include  <stdio.h>
  int main( )
  {
     char  wd[100], chtr;
     int   i=0;
     char st[50];
     printf("enter text \n");
     fgets(st, 50 , stdin);
     puts( st);
  }
```

OUTPUT:-

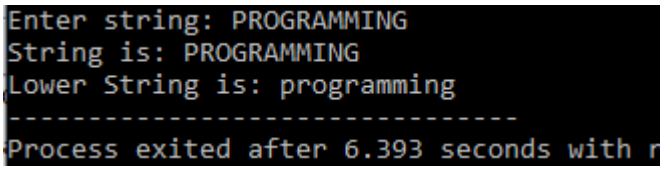


QUESTION-3

(A)

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

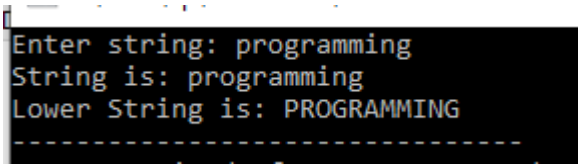
OUTPUT:-



(B)

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

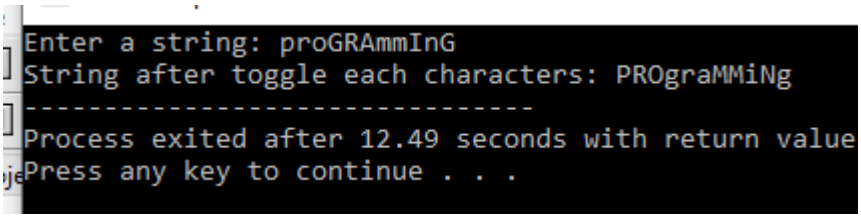
OUTPUT:-



(C)

```
#include <stdio.h>
 int main()
{
   char    str[100];
   int     counter;

   printf("Enter a string: ");
   gets(str);
  for(counter=0;str[counter]!=NULL;counter++)
   {
      if(str[counter]>='A' && str[counter]<='Z')
         str[counter]=str[counter]+32;
      else if(str[counter]>='a' && str[counter]<='z')
         str[counter]=str[counter]-32;
   }
  printf("String after toggle each characters: %s",str);
   return 0;
}
```

OUTPUT:-



(D)

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

```
char s[100];int i=0;
printf("Enter a sentence :\n");
gets(s);
for(i=0;s[i]!='.' && i<100;i++)
{
   if(i==0){
      if(s[i]>=97&&s[i]<=122){
         s[i]-=32;
      }
   }
   else{
      if(s[i]>=65&&s[i]<=90)
                  {
         s[i]+=32;
      }
   }
}
printf("\n%s",s);
return 0;
}
```

OUTPUT:-

```
Enter a sentence :
ram is a boy

Ram is a boy
------------------------
```

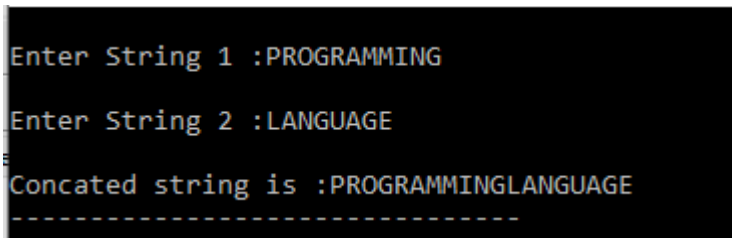
QUESTION:4

(Without String Handling Functions)

```
#include<stdio.h>
#include<string.h>
void concat(char[], char[]);
```

```
int main() {
        char s1[50], s2[30];
        printf("\nEnter String 1 :");
        gets(s1);
        printf("\nEnter String 2 :");
        gets(s2);
        concat(s1, s2);
        printf("\nConcated string is :%s", s1);
        return (0);
}
void concat(char s1[], char s2[]) {
        int i, j;
        i = strlen(s1);
        for (j = 0; s2[j] != '\0'; i++, j++) {
                s1[i] = s2[j];
        }
        s1[i] = '\0';
}
```

OUTPUT:-



(With String Handling Functions)

PROGRAM:-

```
#include<stdio.h>
#include <string.h>
int main(){
char ch[10]={'P','R','O','G','R','A',’M’,’I’, ‘N’,’G’,'\0'};
```

```
char ch2[10]={'L','A','N','G','U','A','G','E', '\0'};
strcat(ch,ch2);
printf("Value of first string is: %s",ch);
return 0;
}
```

OUTPUT:-

```
Enter String 1 :PROGRAMMING

Enter String 2 :LANGUAGE

Concated string is :PROGRAMMINGLANGUAGE
--------------------------------
```

QUESTION:5

(With String Handling Functions)

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

OUTPUT:-

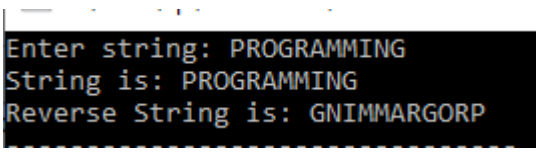
```
Enter string: PROGRAMMING
String is: PROGRAMMING
Reverse String is: GNIMMARGORP
--------------------------------
```

(Without String Handling Functions)

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

```
{
  char s[1000], r[1000];
  int begin, end, count = 0;

  printf("Input a string\n");
  gets(s);

  while (s[count] != '\0')
    count++;

  end = count - 1;

  for (begin = 0; begin < count; begin++) {
    r[begin] = s[end];
    end--;
  }

  r[begin] = '\0';

  printf("%s\n", r);

  return 0;
}
```

OUTPUT:-



QUESTION-6

Without String Handling Functions

```
#include <stdio.h>

int main()
```

```
{
  char str1[100], str2[100];
  int m,n, i = 0;
     printf("Input the string : ");
     fgets(str1, 100, stdin);

  printf("Input  start position :");
  scanf("%d", &m);

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

  while (i < n)
  {
    str2[i] = str1[m+i-1];
    i++;
  }
  str2[i] = '\0';
  printf("substring is %s", str2);

}
```

With String Handling Functions

```
#include <stdio.h>
void main()
{
charstr[100], sstr[100];
intpos, l, c = 0;

printf("\n\nExtract a substring from a given string:\n");
```

```
printf("Input the string : ");
fgets(str, sizeofstr, 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", sstr);

}
```

OUTPUT:-

```
Input the string : PROGRAMMINGLANGUAGE
Input  start position :4
Input the length of substring :4
substring is GRAM
--------------------------------
```

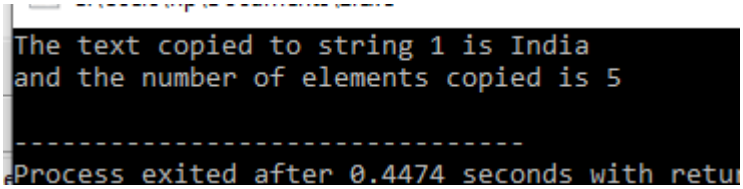
QUESTION:7

With String Handling Functions

```
#include<stdio.h>
#include<string.h>
int main(){
char str1[10]="Hello",str2[10]="India",j;
strcpy(str1,str2);
j=strlen(str1);
```

```
printf("The text copied to string 1 is %s \nand the number of elements copied is %d\n",str1,j);
}
```

OUTPUT:-

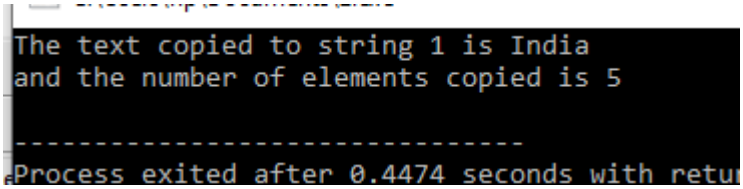


Without String Handling Functions

```
#include <stdio.h>
int copy_string(char *target, char *source)
{
int len=0;
        while(source[len] != '\0')
        {
                target[len] = source [len];
                len++;
        }
        target[len] = '\0';
        return len;
}
int main()
{ char str1[]="programming language";

        char str2[30];
        int count;
count = copy_string(str2,str1);
        printf("Source string (str1): %s\n",str1);
        printf("Target string (str2): %s\n",str2);
        printf("Copied characters are: %d\n",count);
```

```
        return 0;
}
```

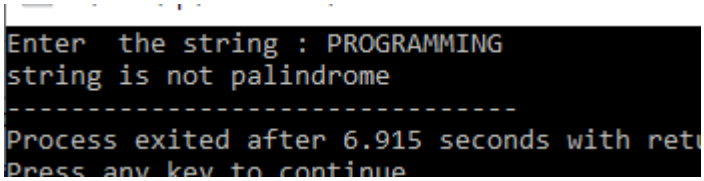
OUTPUT:-



QUESTION-8

```
#include <stdio.h>
#include <string.h>
int main()
{
   char s[1000];
   int i,n,c=0;
printf("Enter  the string : ");
   gets(s);
   n=strlen(s);
   for(i=0;i<n/2;i++)
   {
        if(s[i]==s[n-i-1])
        c++;
}
        if(c==i)
        printf("string is palindrome");
   else
printf("string is not palindrome");
   return 0;
}
```

OUTPUT:-

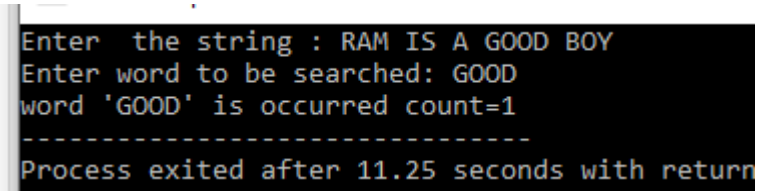


QUESTION-9

```
 #include<stdio.h>
#include <string.h>
int main()
{
   char s[1000],wrd[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(wrd);
   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(wrd))
               {
                     t=0;
```

```
                    for(l=0;wrd[l];l++)
                    {
                    if(s[l+j]==wrd[l])
                            {
                                    t++;
}
                    }
                    if(t==strlen(wrd))
                  {
                    found++;
                  }
                }
                j=a[i]+1;
          }
          printf("word '%s' is occurred count=%d ",wrd,found);
}
```

OUTPUT:-

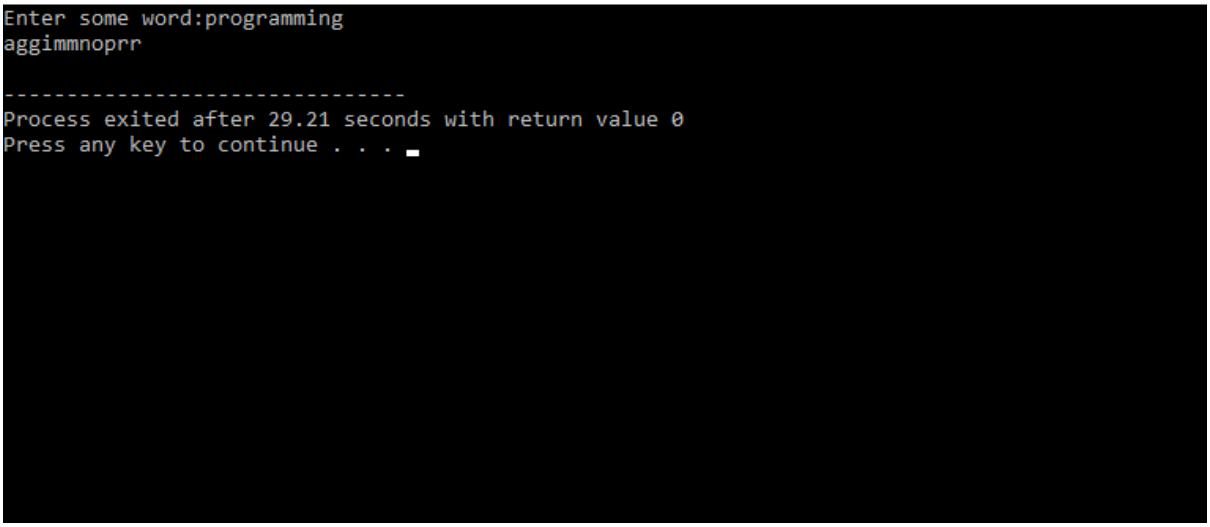


QUESTION-10

```
#include<stdio.h>
#include <stdlib.h>
#include <string.h>
int main()
{
  char ch, input[100], output[100];
  int no[26] = {0}, n, c, t, x;
printf("Enter some word:");
```

```
scanf("%s", input);
  n = strlen(input);
  for (c = 0; c < n; c++)
  {
ch = input[c] - 'a';
    no[ch]++;
  }
  t = 0;
  for (ch = 'a'; ch<= 'z'; ch++)
  {
    x = ch - 'a';
    for (c = 0; c < no[x]; c++)
    {
      output[t] = ch;
      t++;
    }
  }
  output[t] = '\0';
printf("%s\n", output);
  return 0;
}
```

OUTPUT:-

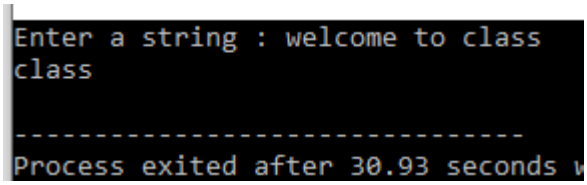


QUESTION-11

```
 #include <stdio.h>
#include <string.h>
char str[100];
int main()
{
   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:-

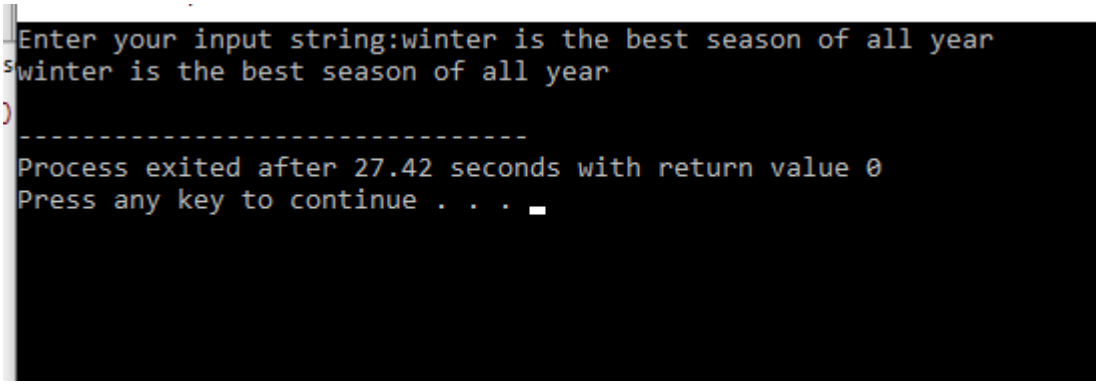


QUESTION-12

```
    #include <stdio.h>
 #include <string.h>
 int main() {
      char string[256], text[256], words[100][256];
      int i, j, k, n;
i = j = k = n = 0;
printf("Enter your input string:");
fgets(string, 256, stdin);
      string[strlen(string) - 1] = '\0';
      while (string[i] != '\0') {
            if (string[i] == ' ') {
                  words[j][k] = '\0';
                  k = 0;
j++;
```

```
            } else {
                words[j][k++] = string[i];
            }
i++;
        }

        words[j][k] = '\0';
        n = j;
        for (i = 0; i< n; i++) {
            for (j = i + 1; j <= n; j++) {
                if (strcmp(words[i], words[j]) == 0) {
                    for (k = j; k < n; k++) {
strcpy(words[k], words[k + 1]);
                    }
                    n--, j--;
                }
            }
        }
        for (i = 0; i<= n; i++) {
printf("%s ", words[i]);
        }
printf("\n");
        return 0;
  }
```

OUTPUT:-


Enter your input string:winter is the best season of all year
winter is the best season of all year

Process exited after 27.42 seconds with return value 0
Press any key to continue . . .