EXERCISE 1.5

INPUT

```
#include<stdio.h>
#include<math.h>
int main()
{
   int x,y;
   printf("Enter temperature in celsius : ");
   scanf("%d",&x);
   y=(9*x/5)+32;
   printf("temperature in fahrenheit : %d",y);
    int a,b;
   printf("\n\nEnter temperature in fahrenheit : ");
   scanf("%d",&a);
   b=5*(a-32)/9;
   printf("temperature in celsius : %d",b);
}
```

OUTPUT

Enter temperature in celsius : 54

temperature in fahrenheit : 129

Enter temperature in fahrenheit : 16

temperature in celsius : -8

EXERCISE 1.6

INPUT

```
#include<stdio.h>
#include<math.h>
#define pi 3.1416
int main()
{
   float rad,area;
   printf("Enter the radius : ");
   scanf("%f",&rad);
   area=4*pi*rad*rad;
   printf("Area is : %.2f",area);
}
```

OUTPUT

Enter the radius : 5.31

Area is : 354.32

EXERCISE 1.7

INPUT

```
#include<stdio.h>
#include<math.h>
int main()
{
   float x,y,a,b;
   printf("Enter two number(using a space) : ");
   scanf("%f %f",&x,&y);
   a=x+y;
   b=x-y;
   printf("\n%.2f+%.2f=%.2f",x,y,a);
   printf("\n%.2f-%.2f=%.2f",x,y,b);
}
```

OUTPUT

```
Enter two number(using a space) : 5.14 3.2

5.14+3.20=8.34

5.14-3.20=1.94
```

EXERCISE 1.9

INPUT

```
#include<stdio.h>
int main()
{
   printf("*");
   printf("\n*\t*");
   printf("\n*\t*\t*");
   printf("\n*\t*\t*\t*");
}
```

OUTPUT

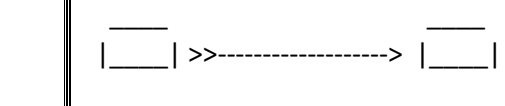
```
*

*      *

*      *      *

*      *      *      *
```

EXERCISE 1.10

INPUT

```
#include<stdio.h>
int main()
{
   printf(" ____                    ____");
   printf("\n|____| >>----------------->  |____|");
}
```

OUTPUT



EXERCISE 1.12

INPUT

```
#include<stdio.h>
int main()
{
   float x,y,z,a,b,c;
   printf("Enter two number(using a space) : ");
   scanf("%f %f",&x,&y);
   z=x+y;
   a=x-y;
   b=x*y;
   c=x/y;
   printf("\nx=%.2f\t\ty=%.2f",x,y);
   printf("\nSum=%.2f\tDifference=%.2f",z,a);
   printf("\nProduct=%.2f\tDivision=%.2f",b,c);
}
```

OUTPUT

```
Enter two number(using a space) : 10.21 5.35


x=10.21        y=5.35

Sum=15.56      Difference=4.86

Product=54.62   Division=1.91
```

EXERCISE 2.1

INPUT

```
#include<stdio.h>
int main()
{
   int i,n;
   printf("Enter the value of n : ");
   scanf("%d",&n);
   printf("1");
   for(i=2;i<=n;i++)
   {
      printf("+1/%d",i);
   }
}
```

OUTPUT

```
Enter the value of n : 10
1+1/2+1/3+1/4+1/5+1/6+1/7+1/8+1/9+1/10
```

EXERCISE 2.3

INPUT

```
#include<stdio.h>
int main()
{
   int i;
   for(i=1; i<=100; i++)
   {
      if(i%2==0)
      {
         printf("%d ",i);
      }
   }
}
```

OUTPUT

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100

EXERCISE 2.6

INPUT

```
#include<stdio.h>
int main()
{
   int i,x=0,y=0,n,a;
   printf("Enter any integer RANGE & Difference(Using a Space) : ");
   scanf("%d %d",&n,&a);
   if(a==0)
   {
      printf("Incorrect the value of Difference");
   }
   else
   {
   for(i=-n;i<=n;i=i+a)
   {
      if(i>0)
      {
         printf("%d ",i);
         x++;
      }
   }
   printf("\nNumber of positive numbers= %d \n",x);
   for(i=-n;i<=n;i=i+a)
   {
      if(i<0)
      {
         printf("%d ",i);
         y++;
      }
   }
```

```
   printf("\nNumber of negative numbers= %d ",y);
   }

}
```

OUTPUT

Enter any integer RANGE & Difference(Using a Space) : 25 1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Number of positive numbers= 25

-25 -24 -23 -22 -21 -20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1

Number of negative numbers= 25

EXERCISE 3.5

INPUT

```
#include<stdio.h>
int main ()
{
   int a=123456789,i,b;
   for(i=1000000000;i>=10;i=i/10)
   {
      b=a%i;
      printf("%d\n",b);
   }
}
```

OUTPUT

123456789

23456789

3456789

456789

56789

6789

789

89

9

EXERCISE 3.14

INPUT

```
#include<stdio.h>
int main ()
{
   int m,n;
   printf("Enter the values of m & n (using a space) : ");
   scanf("%d %d",&m,&n);
   if(m%n==0)
   {
      printf("m is multiple of n ");
   }
   else
   {
       printf("m is not multiple of n ");
   }
}
```

OUTPUT

Enter the values of m & n (using a space) : 25 5

25 is multiple of 5

Or

Enter the values of m & n (using a space) : 25 3

25 is not multiple of 3

EXERCISE 3.15

INPUT

```
#include<stdio.h>
int main()
{
   int a,b,c,sum;
   float avg;
   printf("Enter three number(using a space) : ");
   scanf("%d %d %d",&a,&b,&c);
   sum=a+b+c;
   avg=sum/3;
   printf("sum is %d\naverage is %.2f\n",sum,avg);
   if(a>b && a>c)
   {
      printf("Largest number is %d",a);
   }
   else if(b>a && b>c)
   {       printf("Largest number is %d",b);
   }
   else if(c>b && c>a)
   {
      printf("Largest number is %d",c);
   }
   printf("\n");
```

```
   if(a<b && a<c)
   {
      printf("Smallest number is %d",a);
   }
   else if(b<c && b<c)
   {
      printf("Smallest number is %d",b);
   }
   else if(c<b && c<a)
   {
      printf("Smallest number is %d",c);
   }
   return 0;
}
```

OUTPUT

Enter three number(using a space) : 45 65 25

sum is 135

average is 45.00

Largest number is 65

Smallest number is 25

EXERCISE 3.16

INPUT

```
#include<stdio.h>
#define minvalue 250
int main()
{
   int i,code,calls;
   float bill;
   for(i=0; i<100; i++)
   {
      printf("Enter the customer code & number of calls(using a space) : ");
      scanf("%d %d",&code,&calls);
      if(calls<100)
      {
         bill=minvalue;
      }
      else
      {
         bill=minvalue+1.25*(calls-100);
      }
      printf("\nBill for customer %d is %.2f tk\nNext.....\n",code,bill);
   }
}
```

OUTPUT

Enter the customer code & number of calls(using a space) : 1709008 65

Bill for customer 1709008 is 250.00 tk

Next.....

Enter the customer code & number of calls(using a space) : 1709009 125

Bill for customer 1709009 is 281.25 tk

Next.....

Enter the customer code & number of calls(using a space) : 1709010 222

Bill for customer 1709010 is 402.50 tk

EXERCISE 5.1

INPUT

```
#include<stdio.h>
int main()
{
   int a;
   printf("Enter the number : ");
   scanf("%d",&a);
   if(a%2==0)
   {
      printf("Number is Even\n");
   }
   if(a%2!=0)
   {
      printf("Number is Odd\n");
   }

}
```

OUTPUT

```
Enter the number : 8
Number is Even
Or
Enter the number : 7
Number is Odd
```

EXERCISE 5.7

INPUT

```
#include<stdio.h>
int main()
{
   int i,j,a=0;
    printf("(A)\n");
```

```
   for(i=1; i<=13; i++)
   {
      for(j=1; j<=i; j++)
      {
         a=a+1;
         printf("%d ",a);


      }
      printf("\n");
   }
   printf("\n\n(B)\n");
   for(i=1; i<=5; i++)
   {
      for(j=1; j<=i; j++)
      {
         if(i==2 && j==1 || i==3 && j==2 || i==4 && j==1 || i==4 && j==3 || i==5 && j==2 || i==5 && j==4)
         {
            printf("0 ");
         }
         else
         {
            printf("1 ");
         }
      }
      printf("\n");
   }
}
```

OUTPUT

(A)

1

2 3

4 5 6

7 8 9 10

11 12 13 14 15

16 17 18 19 20 21

22 23 24 25 26 27 28

29 30 31 32 33 34 35 36

37 38 39 40 41 42 43 44 45

46 47 48 49 50 51 52 53 54 55

56 57 58 59 60 61 62 63 64 65 66

67 68 69 70 71 72 73 74 75 76 77 78

79 80 81 82 83 84 85 86 87 88 89 90 91

(B)

1

0 1

1 0 1

0 1 0 1

1 0 1 0 1

EXERCISE 5.9

INPUT

```
#include<stdio.h>
int main()
{
   int x,y;
   printf("(A)\n");
   printf("Enter the value of X : ");
   scanf("%d",&x);
   if(x<=0)
   {
      if(x<0)
      {
         y=-1;
         printf("y=%d",y);
      }
      else
      {
         y=0;
         printf("y=%d",y);
      }
   }
   else
   {
      y=1;
      printf("y=%d",y);
   }



    printf("\n(B)\n");
   int a,b;
   printf("Enter the value of X : ");
   scanf("%d",&a);
   if(a>0)
   {
      b=1;
      printf("y=%d",b);
   }
   else if(a==0)
   {
```

```
    b=a;
    printf("y=%d",b);
  }
  else if (a<0)
  {
    b=-1;
    printf("y=%d",b);
  }


  printf("\n(C)\n");
  int z,c;
  printf("Enter the value of X : ");
  scanf("%d",&z);
  c=z<=0?(z==0?0:-1):1;
  printf("y=%d",c);


  return 0;

}
```

OUTPUT

(A)

Enter the value of X : 56

y=1

(B)

Enter the value of X : -61

y=-1

(C)

Enter the value of X : 0

y=0

EXERCISE 5.12

INPUT

```
#include<stdio.h>
int main()
{
  float a,b,c;
  char x[20];
  printf("Enter the user name(The first name only) :  ");
  scanf("%s",x);
  printf("Enter the units :");
  scanf("%f",&a);
```

```
   if(a<0)
   {
      printf("\n%s",x);
      printf("\nyou press the incorrect unit");

   }
   else if(a<=200)
   {
      b=a*0.8;
      if(b<=100)
      {
         printf("\n%s",x);
          printf("\nthe bill is 100 tk");
      }
      else
       {

         printf("\n%s",x);
      printf("\nthe bill is %f tk",b);
   }}
   else if(a<=300)
   {
      b=200*0.8+(a-200)*0.9;
      printf("\n%s",x);
      printf("\nthe bill is %f tk",b);
   }
   else if(a>300)
   {
      b=200*0.8+100*0.9+(a-300)*1;
      if(b>400)
      {
         c=b+b*15/100;
         printf("\n%s",x);
         printf("\nthe bill is %f tk",c);
      }
      else
     {
      printf("\n%s",x);
      printf("\nthe bill is %f tk",b);
      }
   }

   return 0;


}
```

OUTPUT

Enter the user name(The first name only) : ANIK

Enter the units :155

ANIK

the bill is 124.000000 tk

Or

Enter the user name(The first name only) : ANIK

Enter the units :345

ANIK

the bill is 295.000000 tk

Or

Enter the user name(The first name only) : ANIK

Enter the units :550

ANIK

the bill is 575.000000 tk

EXERCISE 5.13

INPUT

```
#include<stdio.h>
int main ()
{
   int i,sum=0,count=0;
   for(i=0; i<=100; i++)
   {
      if(i%6==0 && i%4!=0)
      {
         sum=sum+i;
         count++;
      }
   }
   printf("Number of those values is %d & sum is %d",count,sum);
}
```

OUTPUT

Number of those values is 8 & sum is 384

EXERCISE 5.14

INPUT

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

```
   int a,b,i,flag=0;
   printf("Enter any positive number : ");
   scanf("%d",&a);
   if(a>0)
   {
    for(i=2;i<a;i++)

    {
       if(a%i==0)
       {
          flag=1;
          break;
       }
    }
    if(flag==1)
    {
       printf("%d is not Prime",a);
    }
    else
    {
       printf("%d is a Prime number",a);
    }
   }
   else
   {
     printf("Enter POSITIVE number\n\n");
   }


   return 0;
}
```

OUTPUT

Enter any positive number : 98

98 is not Prime

Or

Enter any positive number : 97

97 is a Prime number

EXERCISE 5.14 modified

INPUT

```
#include<stdio.h>
int main()
{
   int i,b,m=0;
```

```
   for(i=100; i<=200; i++)
   {
      m=0;
      for(b=2; b<i; b++)
      {

         if(i%b==0)
         {
            m=1;

         }
      }
      if(m==0)
      {
         printf("%d  ",i);
      }


   }
}
```

OUTPUT

101 103 107 109 113 127 131 137 139 149 151 157 163 167 173 179 181 191 193 197 199

EXERCISE 6.1

INPUT

```
#include<stdio.h>
int main ()
{
   int a,b;
   printf("Enter any Number : ");
   scanf("%d",&a);
   while(a)
   {
      b=a%10;
      a=a/10;
      printf("%d",b);
   }
}
```

OUTPUT

Enter any Number : 145697

796541

EXERCISE 6.3

INPUT

```
#include<stdio.h>
int main ()
{
   int a,i,sum=0;
   printf("Enter the Number Range : ");
   scanf("%d",&a);
   for(i=0; i<=a; i++)
   {
      sum=sum+i;
   }
   printf("Sum of those number is %d",sum);
   return 0;
}
```

OUTPUT

```
Enter the Number Range: 10

Sum of those number is 55
```

EXERCISE 6.7

INPUT

```
#include<stdio.h>

int main()
{
   int i,j,k;
   printf("(A)\n");
   for(i=1; i<=5; i++)
   {
      for(j=1; j<=i; j++)
      {
         printf("%d ",i);

      }
      printf("\n");
   }
   printf("\n(B)\n");

   for(i=1; i<=5; i++)
   {
      for(k=1; k<=i; k++)
      {
         printf("  ");
      }

      for(j=5; j>=i; j--)
```

```
    {
       printf("* ");

    }
    printf("\n");
  }
}
```

OUTPUT

(A)

1

2 2

3 3 3

4 4 4 4

5 5 5 5 5

(B)

```
 * * * * *
  * * * *
   * * *
    * *
     *
```

EXERCISE 6.16

INPUT

```
#include<stdio.h>
int main()
{
  int i,j;
  printf("(A)\n");
  for(i=1; i<=5; i++)
  {
    for(j=1; j<=5; j++)
    {
       printf("S ");

    }
    printf("\n");
  }

  printf("\n\n(B)\n");
   for(i=1; i<=5; i++)
```

```
  {
     for(j=1; j<=5; j++)
     {
        if(i==1 || i==5 || j==1 || j==5)
        {
          printf("S ");
        }
        else

        {
          printf("  ");
        }


     }
     printf("\n");
  }

}
```

OUTPUT

(A)

```
S  S  S  S  S
S  S  S  S  S
S  S  S  S  S
S  S  S  S  S
S  S  S  S  S
```

(B)

```
S  S  S  S  S
S           S
S           S
S           S
S  S  S  S  S
```

EXERCISE 7.5

INPUT

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

   for(i=0; i<100; i++)
```

```
  {
        printf("Enter Roll Sub1 Sub2 Sub3 (using a space) : ");
        scanf("%d %d %d %d",&a[i],&b[i],&c[i],&d[i]);
  }
  printf("\n\nRoll no\t\tSub1\tSub2\tSub3\t\n\n\n");
  for(i=0; i<100; i++)
  {
     printf("%d\t\t%d\t%d\t%d\n",a[i],b[i],c[i],d[i]);
  }

}
```

OUTPUT

```
Enter Roll Sub1 Sub2 Sub3 (using a space) : 1 98 94 96

Enter Roll Sub1 Sub2 Sub3 (using a space) : 2 100 89 94

…………………………………………………………………………………….

Enter Roll Sub1 Sub2 Sub3 (using a space) : 100 98 89 80


Roll no     Sub1   Sub2   Sub3

1            98     94     96

2            100    89     94

…………………………………………

100          98     89     94
```

EXERCISE 7.7

INPUT

```
#include<stdio.h>
int main ()
{
  int i,j,k;
  int a[3][3],b[3][3];
  int pro[3][3];
  printf("Enter 3 X 3 matrix A: \n");
  for(i=0;i<3;i++)
  {
     for(j=0;j<3;j++)
     {
        printf("a[%d][%d]=",i,j);
        scanf("%d",&a[i][j]);
     }
  }
   printf("Enter 3 X 3 matrix B: \n");
  for(i=0;i<3;i++)
```

```
    {
       for(j=0;j<3;j++)
       {
          printf("b[%d][%d]=",i,j);
          scanf("%d",&b[i][j]);
       }
    }
     printf("\n\nMatrix A is \n");
    for(i=0;i<3;i++)
    {
       for(j=0;j<3;j++)
       {
          printf("%d\t",a[i][j]);
       }
       printf("\n");
    }
     printf("\n\nMatrix B is \n");
    for(i=0;i<3;i++)
    {
       for(j=0;j<3;j++)
       {
          printf("%d\t",b[i][j]);
       }
       printf("\n");
    }


    printf("\n\nProduct of Matrix A & B is : \n");


     for(i=0;i<3;i++)
    {
       for(j=0;j<3;j++)
       {
         pro[i][j]=0;
         for(k=0;k<3;k++)
         {
            pro[i][j]=pro[i][j]+a[i][k]*b[k][j];
         }
       }
    }


      for(i=0;i<3;i++)
    {
       for(j=0;j<3;j++)
       {
          printf("%d\t",pro[i][j]);
       }
       printf("\n");
    }
}
```

OUTPUT

Enter 3 X 3 matrix A:

a[0][0]=1

a[0][1]=2

a[0][2]=3

a[1][0]=4

a[1][1]=5

a[1][2]=6

a[2][0]=7

a[2][1]=8

a[2][2]=9

Enter 3 X 3 matrix B:

b[0][0]=9

b[0][1]=8

b[0][2]=7

b[1][0]=4

b[1][1]=5

b[1][2]=6

b[2][0]=3

b[2][1]=2

b[2][2]=1

Matrix A is

1 2 3

4 5 6

7 8 9

Matrix B is

9 8 7

4 5 6

3 2 1

Product of Matrix A & B is :

26 24 22

74 69 64

122 114 106

EXERCISE 7.11

INPUT

```
#include<stdio.h>
int main()
{
   char a[100];
   int i,c=0;
   printf("Enter any String : ");
   scanf("%s",a);
   for(i=0;a[i]!='\0';i++)
   {
      c++;
   }
   printf("Length of this String is %d",c);
}
```

OUTPUT

```
Enter any String : KUETIAN
Length of this String is 7
```

EXERCISE 7.13

INPUT

```
#include<stdio.h>
int main ()
{
   int i,j;
   int a[3][3],b[3][3];
   printf("Enter 3 X 3 matrix : \n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         printf("a[%d][%d]=",i,j);
         scanf("%d",&a[i][j]);
      }
   }
    printf("\n\nMatrix is \n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         printf("%d  ",a[i][j]);
      }
      printf("\n");
   }
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         b[i][j]=a[j][i];
      }
   }
```

```
   printf("\n\nTranspose Matrix is \n");

   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         printf("%d  ",b[i][j]);
      }
      printf("\n");
   }


}
```

OUTPUT

Enter 3 X 3 matrix :

a[0][0]=1

a[0][1]=2

a[0][2]=3

a[1][0]=4

a[1][1]=5

a[1][2]=6

a[2][0]=7

a[2][1]=8

a[2][2]=9

Matrix is

1 2 3

4 5 6

7 8 9

Transpose Matrix is

1 4 7

2 5 8

3 6 9

EXERCISE 7.15

INPUT

```
#include<stdio.h>
int main ()
{
   int i,j;
   int a[3][3],b[3][3];
   int sum[3][3],dif[3][3];
   printf("Enter 3 X 3 matrix A: \n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         printf("a[%d][%d]=",i,j);
         scanf("%d",&a[i][j]);
      }
   }
    printf("Enter 3 X 3 matrix B: \n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         printf("b[%d][%d]=",i,j);
         scanf("%d",&b[i][j]);
      }
   }
    printf("\n\nMatrix A is \n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         printf("%d\t",a[i][j]);
      }
      printf("\n");
   }
    printf("\n\nMatrix B is \n");
   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         printf("%d\t",b[i][j]);
      }
      printf("\n");
   }

   for(i=0;i<3;i++)
   {
      for(j=0;j<3;j++)
      {
         sum[i][j]=a[i][j]+b[i][j];
         dif[i][j]=a[i][j]-b[i][j];
      }
```

```
    }

    printf("\n\nA+B\n\n");

    for(i=0;i<3;i++)
    {
        for(j=0;j<3;j++)
        {
            printf("%d\t",sum[i][j]);
        }
        printf("\n");
    }
    printf("\n\nA-B\n\n");

    for(i=0;i<3;i++)
    {
        for(j=0;j<3;j++)
        {
            printf("%d\t",dif[i][j]);
        }
        printf("\n");
    }


}
```

OUTPUT

Enter 3 X 3 matrix A:

a[0][0]=1

a[0][1]=2

a[0][2]=3

a[1][0]=4

a[1][1]=5

a[1][2]=6

a[2][0]=7

a[2][1]=8

a[2][2]=9

Enter 3 X 3 matrix B:

b[0][0]=7

b[0][1]=8

b[0][2]=9

b[1][0]=4

b[1][1]=5

b[1][2]=6

b[2][0]=1

b[2][1]=2

b[2][2]=3

Matrix A is

1 2 3

4 5 6

7 8 9

Matrix B is

7 8 9

4 5 6

1 2 3

A+B

8 10 12

8 10 12

8 10 12

A-B

-6 -6 -6

0 0 0

6 6 6

EXERCISE 8.4

INPUT

```
#include<stdio.h>
int main ()
{
   char a[100];
   int i,c=0;
   printf("Enter any String where 'E' wiil be counted : ");
   scanf("%s",a);
   for(i=0; a[i]!='\0'; i++)
   {
      if(a[i]=='e' || a[i]=='E')
      {
         c++;
      }
```

```
   }
   printf("Number of E is %d",c);
}
```

OUTPUT

Enter any String where 'E' wiil be counted : Engineer

Number of E is 3

EXERCISE 8.6

INPUT

```
#include<stdio.h>

int main ()
{
   char a[100]="It is good to program in PASCAL language";
   int i;
   printf("It is good to program in PASCAL language WILL BE : ");
   for(i=0; a[i]!='\0'; i++)
   {
      if(a[i]=='C')
      {
         a[i-3]=' ';
         a[i-2]=' ';
         a[i-1]=' ';
         a[i]='C';
         a[i+1]=' ';
         a[i+2]=' ';
      }

   }
   printf("\n%s",a);
}
```

OUTPUT

It is good to program in PASCAL language WILL BE :

It is good to program in C language

EXERCISE 8.8

INPUT

```
#include<stdio.h>
#include<string.h>
int main()
{
   char x[100];
    printf("Enter any String (**in small or capital letter**) : ");
```

```
   scanf("%s",x);
   char tmp[100];
   int i,l,a=0,b=0;
   for(i=0; x[i]!='\0'; i++)
   {
      a++;
   }
   l=a-1;

   for(i=0; x[i]!='\0'; i++)
   {
      tmp[i]=x[i];
   }
   tmp[i]='\0';
   for(i=0; tmp[i]!='\0'; i++)
   {
      x[i]=tmp[l-i];
   }
   for(i=0; x[i]!='\0'; i++)
   {
      if(x[i]!=tmp[i])
      {
        b=1;
      }
   }
   if(b==0)
   {
     printf("\t\tPALINDROME\n");
   }
   else
   {
      printf("\t\tNOT PALINDROME\n");
   }
}
```

OUTPUT

Enter any String (**in small or capital letter**) : ANIK

NOT PALINDROME

Or

Enter any String (**in small or capital letter**) :MADAM

PALINDROME

EXERCISE 9.7

INPUT

```
#include<stdio.h>
int prime_num(int a);
int main()
{
   int x;
   int prime;
```

```
   printf("Enter the number : ");
   scanf("%d",&x);
   prime=prime_num(x);
   printf("%d",prime);

}

int prime_num(int a)
{
   int temp,flag=0,i;
   for(i=2;i<a;i++)

    {
       if(a%i==0)
       {
          flag=1;
          break;
       }
    }
    if(flag==1)
    {
       temp=0;
    }
    else
    {
      temp=1;
    }
   return temp;
}
```

OUTPUT

Enter the number : 24

0

Or

Enter the number : 23

1

EXERCISE 9.8

INPUT

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

```
   printf("Enter the String : ");
   scanf("%s",x);
   converter(x);
   printf("After convert %s",x);
}
int converter(char a[])
{
   int i,j;
   for(i=0; a[i]!='\0'; i++)
   {
      j=a[i]-32;
      a[i]=j;
   }
   return j;
}
```

OUTPUT

Enter the String : anik

After convert ANIK

EXERCISE 9.9

INPUT

```
#include<stdio.h>
float caculator(float a,float b,float *p1,float *p2,float *p3);
int main()
{
   float x,y;
   printf("Enter two numbers(using a space) : ");
   scanf("%f %f",&x,&y);
   float sum,diff,pro,div;
   sum=caculator(x,y,&diff,&pro,&div);
   printf("Sum of %.2f & %.2f is %.2f\n",x,y,sum);
   printf("Difference of %.2f & %.2f is %.2f\n",x,y,diff);
   printf("Product of %.2f & %.2f is %.2f\n",x,y,pro);
   printf("Division of %.2f & %.2f is %.2f\n",x,y,div);
}
float caculator(float a,float b,float *p1,float *p2,float *p3)
{
   float s;
   s=a+b;
   *p1=a-b;
   *p2=a*b;
   *p3=a/b;
   return s;
}
```

OUTPUT

Enter two numbers(using a space) : 5.68 2.93

Sum of 5.68 & 2.93 is 8.61

Difference of 5.68 & 2.93 is 2.75

Product of 5.68 & 2.93 is 16.64

Division of 5.68 & 2.93 is 1.94

EXERCISE 11.1

INPUT

```
#include<stdio.h>
int main()
{
   int a[5],i,*p,b;
   for(i=0; i<5; i++)
   {
      printf("Enter Element %d: ",i+1);
      scanf("%d",&a[i]);
      p=&a[i];
      p++;
      b=p;
   }
   for(i=b; i>b-5; i--)
   {
      p--;
      printf("%d ",*p);
   }
}
```

OUTPUT

Enter Element 1: 9

Enter Element 2: 8

Enter Element 3: 5

Enter Element 4: 6

Enter Element 5: 3

3 6 5 8 9

QUESTION 1

INPUT

```
#include<stdio.h>
int main ()
{
   int a;
   printf("Enter any Year : ");
   scanf("%d",&a);
   if(a%400==0)
```

```
   {
      printf("Year %d is a Leap year",a);
   }
   else if(a%4==0 && a%100!=0)
   {
      printf("Year %d is a Leap year",a);
   }
   else
   {
      printf("Year %d is not a Leap year",a);
   }
}
```

OUTPUT

Enter any Year : 2400

Year 2400 is a Leap year

Or

Enter any Year : 2028

Year 2028 is a Leap year

Or

Enter any Year : 2100

Year 2100 is not a Leap year

QUESTION 2

INPUT

```
#include<stdio.h>
int main()
{
   int i,j,k,n=5;
   printf("(A)\n");
   for(i=1; i<=n; i++)
   {

      for(j=n; j>=i; j--)
      {
         printf(" ");

      }
      for(k=1; k<=i; k++)
      {
         if(i==3 && k==2 || i==4 && k==2 || i==4 && k==3)
         {
            printf("  ");
         }
         else
         {
```

```
            printf("* ");
          }

       }
       printf("\n");
   }
   printf("\n\n(B)\n");

   for(i=1; i<=n; i++)
   {
      for(j=1; j<=i; j++)
      {
         printf(" ");

      }
      for(k=i;k<=n;k++)
      {
         printf("%d ",k);
      }
      printf("\n");
   }

}
```

OUTPUT

(A)

```
    *
   * *
  *   *
 *     *
* * * * *
```

(B)

```
1 2 3 4 5
 2 3 4 5
  3 4 5
   4 5
    5
```

QUESTION 3

INPUT

```
#include<stdio.h>
int main()
{
   int a[10]= {1,2,3,4,5,6,7,8,9,10};
   int x,i,m,z;
   printf("Enter the number : ");
   scanf("%d",&x);
   printf("\nArray is \n");
```

```
    for(i=0; i<10; i++)
      {
         printf("%d ",a[i]);
      }

   for(i=0; i<10; i++)
   {
      if(a[i]==x)
      {
         a[i]=0;
         m=1;
         break;
      }

   }

   if(m==1)
   {
      z=i;
      printf("\nMatch found & deleted\n");
      for(i=z; i<10; i++)
      {
         a[i]=a[i+1];
      }
      a[i-1]=0;
      for(i=0; i<9; i++)
      {
         printf("%d ",a[i]);
      }

   }
   else
   {
      printf("\nNo match found & array remain unchanged\n");

      for(i=0; i<10; i++)
      {
         printf("%d ",a[i]);
      }
   }
}
```

OUTPUT

Enter the number : 3

Array is

1 2 3 4 5 6 7 8 9 10

Match found & deleted

1 2 4 5 6 7 8 9 10

Or

Enter the number : 12

Array is

1 2 3 4 5 6 7 8 9 10

No match found & array remain unchanged

1 2 3 4 5 6 7 8 9 10

QUESTION 4

INPUT

```
#include<stdio.h>
int main()
{
   int a[10]= {1,2,3,4,5,6,7,8,9,10};
   int x,i,z,m=0;
   printf("Enter the numbers first the new value (using a space) : ");
   scanf("%d %d",&x,&z);
   printf("Insert %d before %d\n",x,z);
   printf("\nBefore inserting \n");
    for(i=0; i<10; i++)
      {
         printf("%d ",a[i]);
      }
   for(i=0; i<10; i++)
   {
      if(a[i]==z)
      {
         m=1;
         break;
      }
   }

   if(m==1)
   {
      a[i-1]=x;
   printf("\n\nAfter inserting \n");
    for(i=0; i<10; i++)
      {
         printf("%d ",a[i]);
      }
   }
   else
   {
      printf("\n\nNo match found for inserting & array remain unchanged \n");
       for(i=0; i<10; i++)
       {
          printf("%d ",a[i]);
       }
   }
```

}

OUTPUT

Enter the numbers first the new value (using a space) : 45 6

Insert 45 before 6

Before inserting

1 2 3 4 5 6 7 8 9 10

After inserting

1 2 3 4 45 6 7 8 9 10

Or

Enter the numbers first the new value (using a space) : 13 32

Insert 13 before 32

Before inserting

1 2 3 4 5 6 7 8 9 10

No match found for inserting & array remain unchanged

1 2 3 4 5 6 7 8 9 10