

```
//Practical 1
/*
Write a program that works as a calculator (addition, multiplication, division,
subtraction).
*/
#include<stdio.h>
int main()
{
    int a,b,addition,subtraction,multiplication;
    float division;
    printf("Enter value of a: ");
    scanf("%d",&a);
    printf("Enter value of b: ");
    scanf("%d",&b);
    addition=a+b;
    subtraction=a-b;
    multiplication=a*b;
    division=a/b;
    printf("\nAddition :%d",addition);
    printf("\nSubtraction :%d",subtraction);
    printf("\nMultiplication :%d",multiplication);
    printf("\nDivision :%.2f",division);
    return 0;
}
/*
Output :
    Enter value of a: 5
    Enter value of b: 8
    Addition :13
    Subtraction :-3
    Multiplication :40
    Division :0.00
*/
```



```
//Practical 2
/*
Write a program to find area of triangle
*/
#include<stdio.h>
int main()
{
    float a,h,b;
    printf("Enter height : ");
    scanf("%f",&h);
    printf("Enter base : ");
    scanf("%f",&b);
    a=b*h*0.5;
    printf("Area of Triangle = %.2f",a);
    return 0;
}
```

Output :

```
        Enter height : 5
        Enter base : 9
        Area of Triangle = 22.50
```

*/



```
//Practical 3
/*
Write a program to calculate simple interest (i = (p*r*n)/100)
*/
#include <stdio.h>
int main()
{
    float p, r, n, i;
    printf("Enter Principle : ");
    scanf("%f", &p);
    printf("Enter number of years : ");
    scanf("%f", &n);
    printf("Enter rate : ");
    scanf("%f", &r);
    i = (p * r * n) / 100;
    printf("Your interest is : %f", i);
    return 0;
}
```

Output :

```
        Enter Principle : 48616
        Enter number of years : 15
        Enter rate : 16
        Your interest is : 116678.398438
```

*/



```
//Practical 4  
/*  
Write a C program to interchange two numbers with and without using third variable.
```

```
*/  
#include<stdio.h>  
int main()  
{  
    int a,b;  
    printf("Enter value of A : ");  
    scanf("%d",&a);  
    printf("Enter the value of B : ");  
    scanf("%d",&b);  
    a=a+b;  
    b=a-b;  
    a=a-b;  
    printf("Value of A after swapping : %d",a);  
    printf("\nValue of B after swapping : %d",b);  
    return 0;  
}
```

```
/*  
Output :
```

```
    Enter value of A : 1  
    Enter the value of B : 2  
    Value of A after swapping : 2  
    Value of B after swapping : 1
```

```
*/
```



```
//Practical 5
/*
Write a program to display the size of every data type using "sizeof" operator.
*/
#include<stdio.h>
int main()
{
    int a;
    float b;
    char c;
    printf("Size of Int : %d bytes", sizeof(a));
    printf("\nSize of Float : %d bytes", sizeof(b));
    printf("\nSize of Character : %d bytes", sizeof(c));
    return 0;
}
/*
Output :
    Size of Int : 2 bytes
    Size of Float : 4 bytes
    Size of Character : 1 bytes
*/
```



```
//Practical 6
/*
Write a C program to enter a distance in to kilometre and convert it in to meter, feet,
inches and centimetre
*/
#include<stdio.h>
int main()
{
    int a;
    float m,f,i,c;
    printf("Enter distance (in KM) : ");
    scanf("%d",&a);
    m=a*1000;
    f=a*3280.84;
    i=a*39370.1;
    c=a*100000;
    printf("Meter : %.2f",m);
    printf("\nFeet : %.2f",f);
    printf("\nInch : %.2f",i);
    printf("\nCentimeter : %.2f",c);
    return 0;
}
/*
Output :
    Enter distance (in KM) : 534
    Meter : 534000.00
    Feet : 1751968.50
    Inch : 21023634.00
    Centimeter : 53400000.00
*/
```



```
//Practical 7
/*
Write a program to compute Fahrenheit from centigrade (f=1.8*c +32)
*/
#include<stdio.h>
int main()
{
    float f,c;
    printf("Enter temperature in Celsius : ");
    scanf("%f",&c);
    f=(1.8*c)+32;
    printf("%.2f Celcius = %.2f Fahrenheit",c,f);
    return 0;
}
/*
Output :
    Enter temperature in Celsius : 278
    278.00 Celcius = 532.40 Fahrenheit
*/
```



```
//Practical 8
/*
Write a program to illustrate the use of unary prefix and postfix increment and decrement
operators.
*/
#include<stdio.h>
int main()
{
    int a,b,c,d;
    a=1;
    b=1;
    c=1;
    d=1;
    printf("%d",++a);
    printf("\n%d",b++);
    printf("\n%d",++c);
    printf("\n%d",d++);
    return 0;
}
/*
Output :
    2
    1
    2
    1
*/
```

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```
//Practical 9  
/*  
Write a C program to find that the accepted number is Negative or Positive or Zero.
```

```
*/  
#include<stdio.h>  
int main()  
{  
    int n;  
    printf("Enter : ");  
    scanf("%d",&n);  
    if (n<0)  
    {  
        printf("%d is Negative",n);  
    }  
    else if (n>0)  
    {  
        printf("%d is Positive",n);  
    }  
    else  
    {  
        printf("%d is Zero");  
    }  
    return 0;  
}
```

```
/*  
Output :
```

```
    Enter : 24  
    24 is Positive
```

```
*/
```



```
//Practical 10
/*
Write a program to read marks of a student from keyboard whether the student is pass or
fail( using if else)
*/
#include<stdio.h>
int main()
{
    int n;
    printf("Enter : ");
    scanf("%d",&n);
    if (n>=33)
    {
        printf("Pass");
    }
    else
    {
        printf("Fail");
    }
    return 0;
}
/*
Output :
    Enter : 33
    Pass
*/
```



```
//Practical 11_1
/*
Write a program to read three numbers from the
keyboard and find out the maximum out of these three.
(Nested if else).
*/
#include<stdio.h>
int main()
{
    int a,b,c;
    printf("Enter three numbers : ");
    scanf("%d %d %d",&a,&b,&c);
    if (a>b && a>c)
    {
        printf("%d is the largest number",a);
    }
    else if (b>a && b>c)
    {
        printf("%d is the largest number",b);
    }
    else if (c>a && c>b)
    {
        printf("%d is the largest number",c);
    }
    else
    {
        printf("All are equal");
    }
    return 0;
}
/*
```

Output :

```
Enter three numbers : 56 789 12
789 is the largest number
```

*/



```
//Practical 11_2
/*
Write a C program to check whether the
entered character is capital, small letter, digit or any special
character.
*/
#include<stdio.h>
int main()
{
    char ch;
    printf("Enter Any Character : ");
    scanf("%c", & ch);
    if (ch >= '0' && ch <= '9')
    {
        printf("Entered Character is Digit");
    }
    else if (ch >= 'A' && ch <= 'Z')
    {
        printf("Entered Character is Capital Letter");
    }
    else if (ch >= 'a' && ch <= 'z')
    {
        printf("Entered Character is Small Letter");
    }
    else
    {
        printf("Entered Character is Special Character");
    }
    return 0;
}
/*
Output :
    Enter Any Character : @
    Entered Character is Special Character
*/
```



```
//Practical 12
/*
Write a program to read marks from keyboard and
your program should display equivalent grade according to
following table(if else ladder)
Marks Grade
100 - 80 Distinction
79 - 60 First Class
59 - 40 Second Class
< 40 Fail
*/
#include<stdio.h>
int main()
{
    int m;
    printf("Enter Marks :");
    scanf("%d",&m);
    if(m<=100 && m>=80)
    {
        printf("Distinction");
    }
    else if(m<=79 && m>=60)
    {
        printf("First Class");
    }
    else if(m<=59 && m>=40)
    {
        printf("Second Class");
    }
    else
    {
        printf("Fail");
    }
    return 0;
}
/*
Output :
    Enter Marks :86
    Distinction
*/
```



```
//Practical 13
/*
Write a C program to prepare payslips using the
following data. Da = 10% of basic, Hra = 7.50% of basic, Ma =
300,
Pf = 12.50% of basic, Gross = basic + Da + Hra + Ma, Nt =
Gross - Pf.
*/
#include<stdio.h>
int main()
{
    float basic,da,hra,ma,pf,gross,net;
    printf("Enter value of basic : ");
    scanf("%f",&basic);
    da=0.10*basic;
    hra=0.075*basic;
    ma=300;
    pf=0.125*basic;
    printf("da = %f \nhra = %f \nma = %f \nnpf = %f"
           ,da,hra,ma,pf);
    gross=basic+da+hra+ma;
    net=gross-pf;
    printf("\ngross = %f \nnet = %f",gross,net);
    return 0;
}
/*
Output :
    Enter value of basic : 6847
    da = 684.700012
    hra = 513.525024
    ma = 300.000000
    pf = 855.875000
    gross = 8345.224609
    net = 7489.349609
*/
```

```
//Practical 14
/*
Write a C program to read no 1 to 7 and print
relatively day Sunday to Saturday.
*/
#include<stdio.h>
int main()
{
    int a;
    printf("Enter any number from 1 to 7 : ");
    scanf("%d",&a);
    switch (a)
    {
        case 1: printf("Monday");
            break;
        case 2: printf("Tuesday");
            break;
        case 3: printf("wednesday");
            break;
        case 4: printf("Thrusday");
            break;
        case 5: printf("Friday");
            break;
        case 6: printf("Satday");
            break;
        case 7: printf("Sunday");
            break;
        default:printf("Invalid");
            break;
    }
    return 0;
}
/*
Output :
    Enter any number from 1 to 7 : 8
    Invalid
*/
```

```
//Practical 15
/*
Write a C program to find out the Maximum and
Minimum number from given 10 numbers
*/
#include <stdio.h>
int main()
{
    int a[10], i, min, max;
    printf("Enter 10 Numbers : ");
    for(i=0; i<10; i++)
    {
        scanf("%d", &a[i]);
        if(i==0)
        {
            min=max=a[i];
        }
        else
        {
            if(min>a[i])
            {
                min=a[i];
            }
            if(max<a[i])
            {
                max=a[i];
            }
        }
    }
    printf("Minimum : %d", min);
    printf("\nMaximum : %d", max);
    return 0;
}
/*
Output :
    Enter 10 Numbers : 132 546 3184 864 846 89 123 315 789 123
    Minimum : 89
    Maximum : 3184
*/
```



```
//Practical 16
/*
Write a C program to input an integer number and
check if the last digit of the number is even or odd.
*/
#include<stdio.h>
int main()
{
    int a;
    printf("Enter any value : ");
    scanf("%d",&a);
    if (a%2==0)
    {
        printf("The last digit is even");
    }
    else
    {
        printf("The last digit is odd");
    }
    return 0;
}
/*
Output :
    Enter any value : 8623
    The last digit is odd
*/
```



```
//Practical 17
/*
Write a C program to find the factorial of a given
number.

*/
#include<stdio.h>
int main()
{
    int i,f,n;
    f=1;
    printf("Enter : ");
    scanf("%d",&n);
    for ( i = 1; i <=n; i++)
    {
        f=f*i;
    }
    printf("Factorial of %d is : %d",n,f);
    return 0;
}
/*
Output :
    Enter : 9
    Factorial of 9 is : 362880
*/
```



```
//Practical 18
/*
Write a program to reverse a number.
*/
#include<stdio.h>
int main()
{
    int n,re,rem;
    re=0;
    printf("Enter : ");
    scanf("%d",&n);
    while (n!=0)
    {
        rem=n%10;
        re=re*10+rem;
        n/=10;
    }
    printf("Reversed : %d",re);
    return 0;
}
/*
Output :
    Enter : 7585
    Reversed : 5857
*/
```



```
//Practical 19
/*
Write a program to generate first n number of
Fibonacci series
*/
#include<stdio.h>
int main()
{
    int no, i=0, j=1, next, a;
    printf("Enter : ");
    scanf("%d", &no);

    printf("First %d Fibonacci terms are: ", no);
    for(a=1;a<=no;a++)
    {
        printf("%d ", i);
        next = i + j;
        i = j;
        j = next;
    }
    return 0;
}
/*
Output :
    Enter : 10
    First 10 Fibonacci terms are: 0 1 1 2 3 5 8 13 21 34
*/
```

```
//Practical 20
/*
Write a program to find out the sum of the first and
last digit of a given number.
*/
#include <stdio.h>
int main()
{
    int no,sum=0;
    printf("Enter : ");
    scanf("%d",&no);
    if(no<10)
    {
        sum = sum + (no*2);
    }
    else
    {
        sum = sum + (no%10);
        while(no>9)
        {
            no = no /10;
        }
        sum = sum + no;
    }
    printf("Sum of First & Last Digit is : %d",sum);
    return 0;
}
/*
Output :
    Enter : 543114
    Sum of First & Last Digit is : 9
*/
```

```
//Practical 21
/*
Write a C program to find the sum and average of
different numbers which are accepted by user as many as
user wants
*/
#include <stdio.h>
int main()
{
    int no,sum=0,i=0,val;
    printf("How Many Number You Want to Enter : ");
    scanf("%d",&no);
    while(i<no)
    {
        printf("Enter No [ %d ] : ",i+1);
        scanf("%d",&val);
        sum=sum+val;
        i++;
    }
    printf("Sum = %d",sum);
    printf("\nAverage = %.2f",((float)sum)/no);
    return 0;
}
```

Output :

```
How Many Number You Want to Enter : 5
Enter No [1]:2435
Enter No [2]:12
Enter No [3]:54
Enter No [4]:354
Enter No [5]:1233
Sum = 4088
Average = 817.60
```

*/



```
//Practical 22
/*
Write a program to check whether the given
number is prime or not
*/
#include <stdio.h>
int main()
{
    int n, i, c = 0;
    printf("Enter : ");
    scanf("%d", &n);
    for (i = 1; i <= n; i++)
    {
        if (n % i == 0)
        {
            c++;
        }
    }
    if (c == 2)
    {
        printf("%d is a Prime number", n);
    }
    else
    {
        printf("%d is not a Prime number", n);
    }
    return 0;
}
/*
Output :
    Enter : 13
    13 is a Prime number
*/
```



```
//Practical 23
/*
Write a program to evaluate the series
1^2+2^2+3^2+.....+n^2
*/
#include<stdio.h>
int main()
{
    int n, i,sum = 0;
    printf("Enter : ");
    scanf("%d", & n);
    for (i = 1; i <= n; i++)
    {
        sum = sum + (i*i);
    }
    printf("Sum of Series = %d", sum);
    return 0;
}
/*
Output :
    Enter : 18
    Sum of Series = 2109
*/
```



```
//Practical 24
/*
Write a C program to find 1+1/2+1/3+1/4+1/n.
*/
#include<stdio.h>
int main()
{
    int n, i;
    float sum = 0;
    printf("Enter : ");
    scanf("%d", &n);
    for (i = 1; i <= n; i++)
    {
        sum = sum + (1.0 / i);
    }
    printf("Sum of Series = %.4f", sum);
    return 0;
}
/*
Output :
    Enter : 9
    Sum of Series = 2.8290
*/
```

```
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//Practical 25_1
/*Write a program to print
*
* *
* * *
* * * *
* * * * *
*/
#include <stdio.h>
int main()
{
    int i, j;
    for (i = 1; i <= 5; ++i)
    {
        for (j = 1; j <= i; ++j)
        {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```



```
//Practical 25_2
/*
Write a program to print
*
* * *
* * * * *
*/
#include <stdio.h>
int main()
{
    int i, space, k = 0;
    for (i = 1; i < 5; ++i, k = 0)
    {
        for (space = 1; space < 5 - i; ++space)
        {
            printf("  ");
        }
        while (k != 2 * i - 1)
        {
            printf("* ");
            ++k;
        }
        printf("\n");
    }
    return 0;
}
```



```
//Practical 25_3
/*
Write a program to print
* * * *
* * * *
* *
*
*/
#include <stdio.h>
int main()
{
    int i, j;
    for (i = 5; i >= 1; --i)
    {
        for (j = 1; j <= i; ++j)
        {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```



```
//Practical 26_1
/*
Write a program to print

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
*/
#include <stdio.h>
int main()
{
    int i, j;
    for (i = 1; i <= 5; ++i)
    {
        for (j = 1; j <= i; ++j)
        {

            printf("%d ", j);
        }
        printf("\n");
    }
    return 0;
}
```



```
//Practical 26_2
/*
Write a program to print
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
*/
#include <stdio.h>
int main()
{
    int i, j;
    for (i = 5; i >= 1; --i)
    {
        for (j = 1; j <= i; ++j)
        {
            printf("%d ", j);
        }
        printf("\n");
    }
    return 0;
}
```



```
//Practical 26_3
/*
Write a program to print
55555
4444
333
22
1
*/
#include <stdio.h>
int main()
{
    int i, j;
    for (i = 0; i < 5; i++)
    {
        for (j = 0; j < 5 - i; j++)
        {
            printf("%d ", 5 - i);
        }
        printf("\n");
    }
    return 0;
}
```



```
//Practical 26_4
/*
Write a program to print
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
*/
#include <stdio.h>
int main()
{
    int i, j;
    for (i = 0; i < 5; i++)
    {
        for (j = 0; j < i+1; j++)
        {
            printf("%d ",i+1);
        }
        printf("\n");
    }
    return 0;
}
```

```
//Practical 27
/*
Write a C program to read and
store the roll no and marks of 20 students using an array.
*/
#include <stdio.h>
int main()
{
    int r[20], m[20], i;
    for (i = 0; i < 20; i++)
    {
        printf("Enter Roll No & Marks : ");
        scanf("%d", &r[i]);
        scanf("%d", &m[i]);
    }
    for (i = 0; i < 20; i++)
    {
        printf("\nStudent : [%d]    Roll No : %d    Marks : %d", i+1, r[i], m[i]);
    }
    return 0;
}
/*
Output :
    Enter Roll No & Marks : 1      1
    Enter Roll No & Marks : 2      2
    Enter Roll No & Marks : 3      3
    Enter Roll No & Marks : 4      4
    Enter Roll No & Marks : 5      5
    Enter Roll No & Marks : 6      6
    Enter Roll No & Marks : 7      7
    Enter Roll No & Marks : 8      8
    Enter Roll No & Marks : 9      9
    Enter Roll No & Marks : 10     10
    Enter Roll No & Marks : 11     11
    Enter Roll No & Marks : 12     12
    Enter Roll No & Marks : 13     13
    Enter Roll No & Marks : 14     14
    Enter Roll No & Marks : 15     15
    Enter Roll No & Marks : 16     16
    Enter Roll No & Marks : 17     17
    Enter Roll No & Marks : 18     18
    Enter Roll No & Marks : 19     19
    Enter Roll No & Marks : 20     20

    Student : [1]    Roll No : 1    Marks : 1
    Student : [2]    Roll No : 2    Marks : 2
    Student : [3]    Roll No : 3    Marks : 3
    Student : [4]    Roll No : 4    Marks : 4
    Student : [5]    Roll No : 5    Marks : 5
    Student : [6]    Roll No : 6    Marks : 6
    Student : [7]    Roll No : 7    Marks : 7
    Student : [8]    Roll No : 8    Marks : 8
    Student : [9]    Roll No : 9    Marks : 9
    Student : [10]   Roll No : 10   Marks : 10
    Student : [11]   Roll No : 11   Marks : 11
    Student : [12]   Roll No : 12   Marks : 12
    Student : [13]   Roll No : 13   Marks : 13
    Student : [14]   Roll No : 14   Marks : 14
    Student : [15]   Roll No : 15   Marks : 15
    Student : [16]   Roll No : 16   Marks : 16
    Student : [17]   Roll No : 17   Marks : 17
    Student : [18]   Roll No : 18   Marks : 18
    Student : [19]   Roll No : 19   Marks : 19
    Student : [20]   Roll No : 20   Marks : 20
*/
```

```
//Practical 28
/*
Write a program to find out which number is even
or odd from list of 10 numbers using array.
*/
#include<stdio.h>
int main()
{
    int i,a[10];
    printf("Enter : ");
    for ( i = 0; i < 10; i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Even : ");
    for ( i = 0; i < 10; i++)
    {
        if (a[i]%2==0)
        {
            printf("%d ",a[i]);
        }
    }
    printf("\nOdd : ");
    for ( i = 0; i < 10; i++)
    {
        if (a[i]%2==1)
        {
            printf("%d ",a[i]);
        }
    }
    return 0;
}
/*
Output :
    Enter : 1 2 3 4 5 6 7 8 9 10
    Even : 2 4 6 8 10
    Odd : 1 3 5 7 9
*/
```



```
//Practical 29
/*
Write a program to find the maximum element
from a one-Dimensional array.
*/
#include<stdio.h>
int main()
{
    int i,a[5],max=0;
    printf("Enter : ");
    for ( i = 0; i < 5; i++)
    {
        scanf("%d",&a[i]);
    }
    for ( i = 0; i < 5; i++)
    {
        if (max<a[i])
        {
            max=a[i];
        }
    }
    printf("Maximum : %d",max);
    return 0;
}
```

Output :

Enter : 132 486 123 78 96

Maximum : 486



```
//Practical 30
/*
Write a Program to Search an element in array.
*/
#include<stdio.h>
int main()
{
    int a[5],i,x,n=0;
    printf("Enter : ");
    for ( i = 0; i < 5; i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Serach : ");
    scanf("%d",&x);
    for ( i = 0; i < 5; i++)
    {
        if (a[i]==x)
        {
            printf("Found %d at %d\n",x,i);
            n++;
        }
    }
    if (n==0)
    {
        printf("Unsuccesfull Search");
    }
    return 0;
}
/*
Output :
    Enter : 123 486 486 231 48
    Serach : 486
    Found 486 at 1
    Found 486 at 2
*/
```



```
//Practical 31
/*
Write a Program to perform addition of all
elements in Array.
*/
#include<stdio.h>
int main()
{
    int a[5],sum=0;
    printf("Enter : ");
    for (int i = 0; i < 5; i++)
    {
        scanf("%d",&a[i]);
    }
    for (int i = 0; i < 5; i++)
    {
        sum=sum+a[i];
    }
    printf("Sum : %d",sum);
    return 0;
}
/*
Output :
    Enter : 135 456 32186 87 16864
    Sum : 49728
*/
```

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```
//Practical 32
/*
Write a Program to reverse the array elements in C
Programming.
```

```
*/
#include<stdio.h>
int main()
{
    int a[5],i;
    printf("Enter : ");
    for ( i = 0; i < 5; i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Reversed : ");
    for ( i = 4; i>=0; i--)
    {
        printf(" %d ",a[i]);
    }
    return 0;
}
```

```
/*
Output :
    Enter : 46 456 345 8674 231
    Reversed : 231 8674 345 456 46
*/
```



```
//Practical 33
/*
Write a Program for deletion of an element from
the specified location from Array.
*/
#include<stdio.h>
int main ()
{
    int a[5],s,i;
    printf("Enter : ");
    for ( i = 0; i < 5; i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Delete : ");
    scanf("%d",&s);
    for ( i = s; i < 5; i++)
    {
        a[i]=a[i+1];
        a[i+1]=a[i];
    }
    printf("New : ");
    for ( i = 0; i < 4; i++)
    {
        printf("%d ",a[i]);
    }
    return 0;
}
```

Output :

```
Enter : 54 86 132 78 5341
Delete : 2
New : 54 86 78 5341
```

*/

```
//Practical 34
/*
Write a program to find a character from a given
string.
*/
#include<stdio.h>
int main()
{
    char a[20],s;
    int n=0;
    printf("Enter : ");
    gets(a);
    printf("Search : ");
    scanf("%c",&s);
    for (int i = 0; a[i]!='\0'; i++)
    {
        if (a[i]==s)
        {
            printf("Found %c at %d\n",s,i);
            n++;
        }
    }
    if (n==0)
    {
        printf("%c is not present",s);
    }
    return 0;
}
/*
Output :
    Enter : hello world
    Search : l
    Found l at 2
    Found l at 3
    Found l at 9
*/
```



```
//Practical 35
/*
Write a program to replace a character in a given
string.
*/
#include <string.h>
#include<stdio.h>
int main()
{
    char s[20],c1,c2;
    printf("Enter : ");
    gets(s);
    printf("Find : ");
    c1=getchar();
    getchar();
    printf("Replace : ");
    c2=getchar();
    for(int i=0;s[i];i++)
    {
        if(s[i]==c1)
        {
            s[i]=c2;
        }
    }
    printf("New : %s ",s);
    return 0;
}
/*
Output :
    Enter : hello world
    Find : o
    Replace : l
    New : helll wlrlld
*/
```



```
//Practical 36
/*
Write a program to delete a character in a given
string.
*/
#include<stdio.h>
#include<string.h>
int main()
{
char a[100],ch;
int i,j;
printf("Enter :");
gets(a);
printf("Delete :");
scanf("%c",&ch);
for(i=0;i<strlen(a);i++)
{
if(ch==a[i])
{
for(j=i;j<strlen(a);j++)
a[j]=a[j+1];
}
}
printf("New : ");
puts(a);
return 0;
}
/*
Output :
    Enter :hello world
    Delete :o
    New : hell wrld
*/
```



```
//Practical 37
/*
Write a program to reverse string.
*/
#include<stdio.h>
#include<string.h>
int main()
{
    char s[60];
    int l, g;
    printf("Enter : ");
    scanf( "%s", s );
    l = strlen(s);
    printf("Reverse : ");
    for(g = l - 1; g >= 0; g--)
    {
        printf("%c", s[g]);
    }
    return 0;
}
/*
Output :
    Enter : hello
    Reverse : olleh
*/
```



```
//Practical 38
/*
Write a program to convert string into upper case
*/
#include<stdio.h>
#include <string.h>
int main()
{
    char s[100];
    int i;
    printf("Enter : ");
    gets(s);
    for (i = 0; s[i]!='\0'; i++)
    {
        if(s[i] >= 'a' && s[i] <= 'z')
        {
            s[i] = s[i] -32;
        }
    }
    printf("Upper Case = %s", s);
    return 0;
}
/*
Output :
    Enter : hElLo
    Upper Case = HELLO
*/
```



```
//Practical 39
/*
Write a program that defines a
function to add first n numbers.
*/
#include<stdio.h>
int sum(int x);
int main()
{
    int x;
    printf("Enter : ");
    scanf("%d",&x);
    printf("Sum of first %d Numbers = %d",x,sum(x));
    return 0;
}
int sum(int n)
{
    int i,sum=0;
    for(i=1;i<=n;i++)
    {
        sum+=i;
    }
    return sum;
}
/*
Output :
    Enter : 5
    Sum of first 5 Numbers = 15
*/
```



```
//Practical 40
/*
Write a function in the program to return 1 if
number is prime otherwise return 0
*/
#include <stdio.h>
int f1(int);
int main()
{
    int n;
    printf("Enter : ");
    scanf("%d", &n);
    printf("%d", f1(n));
    return 0;
}
int f1(int n)
{
    int i;
    for (i = 2; i < n; i++)
    {
        if (n % i == 0)
        {
            return 0;
        }
    }
    return 1;
}
/*
Output :
    Enter : 13
    1
*/
```

```
//Practical 41
/*
Write a function Exchange to interchange the
values of two variables, say x and y illustrates the use of this
function in a calling function.
*/
#include<stdio.h>
void f1(int,int);
int main()
{
    int a,b;
    printf("A : ");
    scanf("%d",&a);
    printf("B : ");
    scanf("%d",&b);
    f1(a,b);
    return 0;
}
void f1(int x,int y)
{
    int temp=0;
    temp=x;
    x=y;
    y=temp;
    printf("After Swapping : ");
    printf("\nA : %d ",x);
    printf("\nB : %d",y);
}
/*
Output :
    A : 20
    B : 23
    After Swapping :
    A : 23
    B : 20
*/
```

```

//Practical 42
/*
Write a C program to check whether a number is
prime, Armstrong or perfect number using functions.
*/
#include<stdio.h>
void f1(int);
void f2(int);
void f3(int);
int main()
{
    int a;
    printf("Enter : ");
    scanf("%d",&a);
    f1(a);
    f2(a);
    f3(a);
    return 0;
}
void f1(int n)
{
    int i, c = 0;
    for (i = 1; i <= n; i++)
    {
        if (n % i == 0)
        {
            c++;
        }
    }
    if (c == 2)
    {
        printf("%d is a Prime Number.",n);
    }
    else
    {
        printf("%d is not a Prime Number.",n);
    }
}
void f2(int x)
{
    int temp, rem, re = 0;
    temp = x;
    while (temp != 0)
    {
        rem = temp % 10;
        re += rem * rem * rem;
        temp /= 10;
    }
    if (re == x)
    {
        printf("\n%d is an Armstrong Number.", x);
    }
    else
    {
        printf("\n%d is not an Armstrong Number.", x);
    }
}
void f3(int y)
{
    int rem, sum = 0, i;
    for(i = 1; i < y; i++)
    {
        rem = y % i;
        if (rem == 0)
        {
            sum = sum + i;
        }
    }
    if (sum == y)
    {
        printf("\n%d is a Perfect Number.",y);
    }
    else
    {
        printf("\n%d is not a Perfect Number.",y);
    }
}
/*
Output :
    Enter : 13
    13 is a Prime Number.
    13 is not an Armstrong Number.
    13 is not a Perfect Number.
*/

```



```
//Practical 43
/*
Write a program to find the factorial of a number
using recursion.
*/
#include<stdio.h>
long int f1(int n);
int main()
{
    int n;
    printf("Enter : ");
    scanf("%d", &n);
    printf("Factorial of %d = %ld", n, f1(n));
    return 0;
}
long int f1(int n)
{
    if (n>=1)
        return n*f1(n-1);
    else
        return 1;
}
/*
Output :
    Enter : 13
    Factorial of 13 = 1932053504
*/
```



```
//Practical 44
/*
Write a program to calculate sum of first 20 natural
numbers using recursive function
*/
#include <stdio.h>
int f1(int n);
int main()
{
    int a=20;
    printf("Sum = %d", f1(a));
    return 0;
}
int f1(int n)
{
    if (n != 0)
        return n + f1(n - 1);
    else
        return n;
}
/*
Output :
    Sum = 210
*/
```

```
//Practical 45
/*
Write a program to generate Fibonacci series using
recursive function.
*/
#include<stdio.h>
int f1(int);
int main()
{
    int n, i = 0, c;
    printf("Enter : ");
    scanf("%d",&n);
    printf("First %d Fibonacci Numbers are : ",n);
    for ( c = 1 ; c <= n ; c++ )
    {
        printf("%d ", f1(i));
        i++;
    }
    return 0;
}
int f1(int n)
{
    if ( n == 0 )
        return 0;
    else if ( n == 1 )
        return 1;
    else
        return ( f1(n-1) + f1(n-2) );
}
/*
Output :
    Enter : 10
    First 10 Fibonacci Numbers are : 0 1 1 2 3 5 8 13 21 34
*/
```



```
//Practical 46
/*
Write a program to find sum of digits of the number
using Recursive Function.
*/
#include <stdio.h>
int f1(int a);
int main()
{
    int n;
    printf("Enter : ");
    scanf("%d", &n);
    printf("Sum of %d is %d", n, f1(n));
    return 0;
}
int f1(int n)
{
    if (n != 0)
        return (n % 10 + f1(n / 10));
    else
        return 0;
}
/*
Output :
    Enter : 7585
    Sum of 7585 is 25
*/
```



```
//Practical 47
/*
Write a function that will scan a character string
passed as an argument and convert all lowercase character
into their uppercase equivalents
*/
#include<stdio.h>
#include<string.h>
void f1(char s[100]);
int main()
{
    char s[100];
    printf("\nEnter : ");
    gets(s);
    printf("Uppercase :");
    f1(s);
    return 0;
}
void f1(char s[100])
{
    puts(strupr(s));
}
/*
Output :
    Enter :hello
    Uppercase :HELLO
*/
```



```
//Practical 48
/*
Write a program to print the address of a variable using a
pointer.
*/
#include<stdio.h>
int main()
{
    int a=0,*p;
    p=&a;
    printf("Address of %d is %p",a,p);
    return 0;
}
/*
Output :
    Address of 0 is 0061FF18
*/
```



```
//Practical 49  
/*  
Write a C program to swap the two values using
```

```
pointers.*/  
#include<stdio.h>  
int main()  
{  
    int a,b,c,*p1,*p2;  
    printf("A : ");  
    scanf("%d",&a);  
    printf("B : ");  
    scanf("%d",&b);  
    p1=&a;  
    p2=&b;  
    printf("After Swapping ");  
    c=*p1;  
    *p1=*p2;  
    *p2=c;  
    printf("\nA : %d",a);  
    printf("\nB : %d",b);  
    return 0;  
}  
/*  
Output :  
A : 12  
B : 24  
After Swapping  
A : 24  
B : 12  
*/
```



```
//Practical 50
/*
Write a C program to print the address of a
character and the character of string using a pointer.
*/
#include<stdio.h>
#include<string.h>
int main()
{
    char a[20],s,*p1[20];
    int n=0,i;
    printf("Enter : ");
    gets(a);
    printf("Search : ");
    scanf("%c",&s);
    for( i = 0; i < strlen(a); i++)
    {
        p1[i]=&a[i];
    }
    for ( i = 0; a[i]!='\0'; i++)
    {
        if (a[i]==s)
        {
            printf("Address of %c is %p\n",*p1[i],p1[i]);
            n++;
        }
    }
    if (n==0)
    {
        printf("%c is not present",s);
    }
    return 0;
}
/*
Output :
    Enter : hello
    Search : l
    Address of l is 0061FF06
    Address of l is 0061FF07
*/
```



```
//Practical 51
/*
Write a program to add two numbers using
pointers.
*/
#include<stdio.h>
int main()
{
    int a,b,*p1,*p2;
    p1=&a;
    p2=&b;
    printf("A : ");
    scanf("%d",&a);
    printf("B : ");
    scanf("%d",&b);
    printf("%d + %d = %d",a,b,*p1+*p2);
    return 0;
}
/*
Output :
    A : 2004
    B : 2023
    2004 + 2023 = 4027
*/
```

```
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```

```
//Practical 52
/*
Write a program to input and print array elements
using pointer.
*/
#include<stdio.h>
int main()
{
    int a[5],*p1=a,i;
    printf("Enter : ");
    for ( i = 0; i < 5; i++)
    {
        scanf("%d",&p1[i]);
    }
    printf("Array : ");
    for ( i = 0; i < 5; i++)
    {
        printf("%d ",p1[i]);
    }
    return 0;
}
/*
Output :
    Enter : 123 465 8 132 456
    Array : 123 465 8 132 456
*/
```

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```
//Practical 53
/*
Write a program to copy one array to another using
pointer.
*/
#include<stdio.h>
int main()
{
    int a[5], b[5], i, *p[5];
    printf("Enter : ");
    for(i = 0; i < 5; i++)
    {
        scanf("%d", &a[i]);
    }
    printf("Copied to b : ");
    for(i = 0; i < 5 ; i++)
    {
        p[i] = &a[i];
        b[i] = *p[i];
        printf("%d ", b[i]);
    }
    return 0;
}
/*
Output :
    Enter : 1 2 3 4 5
    Copied to b : 1 2 3 4 5
*/
```




```
//Practical 55
/*
Write a program to access elements using a pointer
*/
#include<stdio.h>
int main()
{
    int a[5],*p[5],i;
    printf("Enter : ");
    for ( i = 0; i < 5; i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Accessing using pointers : ");
    for ( i = 0; i < 5; i++)
    {
        p[i]=&a[i];
        printf("%d ",*p[i]);
    }
    return 0;
}
/*
Output :
    Enter : 1 2 3 4 5
    Accessing using pointers : 1 2 3 4 5
*/
```

```
//Practical 56
/*
Write a program for sorting using a pointer.
*/
#include <stdio.h>
int main()
{
    int a[5],*p[5],i,j,temp;
    printf("Enter : ");
    for ( i = 0; i < 5; i++)
    {
        scanf("%d",&a[i]);
    }
    for ( i = 0; i < 5; i++)
    {
        p[i]=&a[i];
    }
    for(i=0;i<5;i++)
    {
        for(j=0;j<5;j++)
        {
            if(*p[i]<*p[j])
            {
                temp=*p[i];
                *p[i]=*p[j];
                *p[j]=temp;
            }
        }
    }
    printf("Sorted : ");
    for(i=0;i<5;i++)
    {
        printf("%d ",*p[i]);
    }
    return 0;
}
/*
Output :
    Enter : 53 13 46 123 564
    Sorted : 13 46 53 123 564
*/
```



```
//Practical 57
/*
Write a program to read structure elements from the keyboard.
*/
#include<stdio.h>
struct s
{
    int r;
    char n[20];
};
int main()
{
    struct s s1;
    printf("Roll No. : ");
    scanf("%d",&s1.r);
    printf("Name : ");
    scanf("%s",s1.n);
    return 0;
}
/*
Output :
    Roll No. : 22
    Name : KPGU
*/
```

```

//Practical 58
/*
Design a structure
student_record to contain name, branch and total marks
obtained. Develop a program to read data for 10 students in
a class and print them.
*/
#include<stdio.h>
struct student_record
{
    char n[20];
    char b[20];
    int m;
};
int main()
{
    struct student_record s[10];
    int i;
    printf("Enter : \n");
    for ( i = 0; i < 1; i++)
    {
        printf("\t");
        scanf("%s %s %d",&s[i].n,&s[i].b,&s[i].m);
    }
    for ( i = 0; i < 1; i++)
    {
        printf("\t");
        printf("Name : %s\n\tBranch : %s\n\tMarks : %d\n",s[i].n,s[i].b,s[i].m);
    }
    return 0;
}
/*
Output :
Enter :
A EC 100
B IT 100
C CSE 100
D ME 100
E EE 100
F CV 100
G EC 100
H IT 100
I CSE 100
J ME 100
Name : A
Branch : EC
Marks : 100
Name : B
Branch : IT
Marks : 100
Name : C
Branch : CSE
Marks : 100
Name : D
Branch : ME
Marks : 100
Name : E
Branch : EE
Marks : 100
Name : F
Branch : CV
Marks : 100
Name : G
Branch : EC
Marks : 100Name : H
Branch : IT
Marks : 100
Name : I
Branch : CSE
Marks : 100
Name : J
Branch : ME
Marks : 100
*/

```



```
//Practical 59
/*
Write a program to add two
distances in feet and inches using structure
*/
#include<stdio.h>
struct distance
{
    int f;
    int i;
};
int main()
{
    struct distance d1, d2, s;
    printf("Enter : ");
    scanf("%d%d", &d1.f, &d1.i);
    printf("Enter : ");
    scanf("%d%d", &d2.f, &d2.i);
    s.i = d1.i + d2.i;
    s.f = d1.f + d2.f;
    if(s.i>=12)
    {
        s.f += s.i/12;
        s.i %= 12;
    }
    printf("Sum is %d' %d''", s.f, s.i);
    return 0;
}
/*
Output :
    Enter : 5 11
    Enter : 6 10
    Sum is 12' 9''
*/
```

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```
//Practical 60
/*
Write a program to read and print
an Employee's Details using Structure.
*/
#include <stdio.h>
struct emp
{
    char n[20];
    int id;
    float s;
};
int main()
{
    struct emp e;
    printf("Enter : ");
    scanf("%s %d %f",&e.n,&e.id,&e.s);
    printf("Name : %s\n",e.n);
    printf("Id : %d\n",e.id);
    printf("Salary : %f\n",e.s);
    return 0;
}
/*
Output :
    Enter : A 22 9999999
    Name : A
    Id : 22
    Salary : 9999999.000000
*/
```



```
//Practical 61  
/*  
Write a program to declare,  
initialize an UNION.
```

```
*/  
#include <stdio.h>  
union u
```

```
{  
    int r;  
    char n[20];  
};
```

```
int main()  
{  
    union u u1;  
    printf("Roll No. : ");  
    scanf("%d",&u1.r);  
    printf("Name : ");  
    scanf("%s",u1.n);  
    return 0;
```

```
}
```

```
/*
```

Ouput :

Roll No. : 22

Name : KPGU

```
*/
```



```
//Practical 62
/*
Write a program to write a string in file
*/
#include <stdio.h>
#include <stdlib.h>
int main()
{
    char s[20];
    FILE *fptr;
    fptr = fopen("f1.txt", "w");
    if (fptr == NULL)
    {
        printf("Error!");
        exit(1);
    }
    printf("Enter : ");
    fgets(s, sizeof(s), stdin);
    fprintf(fptr, "%s", s);
    fclose(fptr);
    return 0;
}
/*
Output :
    Enter : Hello World
*/
```

```

//Practical 63
/*
A file named data contains a series of integer
numbers. Write a c program to read all numbers from a file
and then write all odd numbers into a file named "odd" and
write all even numbers into a file named "even". Display all
the contents of these file on screen
*/
#include<stdio.h>
int main()
{
    FILE *f1,*f2,*f3;
    int num,i,n=10;
    printf("Data : ");
    f1 = fopen("data.txt","w");
    for(i=0;i<n;i++)
    {
        scanf("%d",&num);
        if(num== -1)
        {
            break;
        }
        putw(num,f1);
    }
    fclose(f1);
    f1 = fopen("data.txt","r");
    f2 = fopen("Odd.txt","w");
    f3 = fopen("Even.txt","w");
    while((num = getw(f1)) != EOF)
    {
        if(num%2==0)
        {
            putw(num,f3);
        }
        else
        {
            putw(num,f2);
        }
    }
    fclose(f1);
    fclose(f2);
    fclose(f3);
    f2 = fopen("Odd.txt","r");
    f3 = fopen("Even.txt","r");
    printf("Odd : ");
    while((num = getw(f2)) != EOF)
    {
        printf("%d ",num);
    }
    printf("\nEven : ");
    while((num = getw(f3)) != EOF)
    {
        printf("%d ",num);
    }
    fclose(f2);
    fclose(f3);
    return 0;
}
/*
Output :
    Data : 0 1 2 3 4 5 6 7 8 9
    Odd : 1 3 5 7 9
    Even : 0 2 4 6 8
*/

```



```
//Practical 64
/*
C Program to count number of lines in a file
*/
#include <stdio.h>
int main()
{
    FILE *fptr;
    int ctr = 0;
    char fname[20];
    char c;
    printf("Enter : ");
    scanf("%s", fname);
    fptr = fopen(fname, "r");
    if (fptr == NULL)
    {
        printf("%s not found", fname);
        return 0;
    }
    for (c = getc(fptr); c != EOF; c = getc(fptr))
    {
        if (c == '\n')
        {
            ctr = ctr + 1;
        }
    }
    fclose(fptr);
    printf("%s has %d lines", fname, ctr-1);
    return 0;
}
/*
Output :
    Enter : p63.c
    p63.c has 59 lines
*/
```



```
//Practical 65
/*
C Program to print contents of file
*/
#include <stdio.h>
#include <stdlib.h>
int main()
{
    FILE *fptr;
    char f[20], c;
    printf("Enter : ");
    scanf("%s", &f);
    fptr = fopen(f, "r");
    if (fptr == NULL)
    {
        printf("Cannot open file \n");
        exit(0);
    }
    c = fgetc(fptr);
    while (c != EOF)
    {
        printf ("%c", c);
        c = fgetc(fptr);
    }
    fclose(fptr);
    return 0;
}
```



```
//Practical 66
/*
C Program to copy contents of one file to another file
*/
#include <stdio.h>
#include <stdlib.h>
int main()
{
    FILE *fptr1, *fptr2;
    char f[20], c;
    printf("Read : ");
    scanf("%s", &f);
    fptr1 = fopen(f, "r");
    if (fptr1 == NULL)
    {
        printf("Cannot open file %s \n", f);
        exit(0);
    }
    printf("Write : ");
    scanf("%s", f);
    fptr2 = fopen(f, "w");
    if (fptr2 == NULL)
    {
        printf("Cannot open file %s \n", f);
        exit(0);
    }
    c = fgetc(fptr1);
    while (c != EOF)
    {
        fputc(c, fptr2);
        c = fgetc(fptr1);
    }
    printf("Contents copied to %s", f);
    fclose(fptr1);
    fclose(fptr2);
    return 0;
}
/*
Output :
    Read : f1.txt
    Write : f2.txt
    Contents copied to f2.txt
*/
```

```
//Practical 67
/*
C Program to merge contents of two files into a third file
*/
#include <stdio.h>
#include <stdlib.h>
int main()
{
    FILE *fp1 = fopen("f1.txt", "r"),
          *fp2 = fopen("f2.txt", "r"),
          *fp3 = fopen("f3.txt", "w");
    char c;
    if (fp1 == NULL || fp2 == NULL || fp3 == NULL)
    {
        puts("Could not open files");
        exit(0);
    }
    while ((c = fgetc(fp1)) != EOF)
    {
        fputc(c, fp3);
    }
    while ((c = fgetc(fp2)) != EOF)
    {
        fputc(c, fp3);
    }
    printf("Merged f1.txt and f2.txt into f3.txt");
    fclose(fp1);
    fclose(fp2);
    fclose(fp3);
    return 0;
}
/*
Output :
    Merged f1.txt and f2.txt into f3.txt
*/
```



```
//Practical 68_1
/*
Write a Program to draw a point
*/
#include <graphics.h>
#include <stdio.h>
int main()
{
    int gd = DETECT, gm, color;
    initgraph(&gd, &gm, "");
    putpixel(100, 100, WHITE);
    getch();
    return 0;
}
```



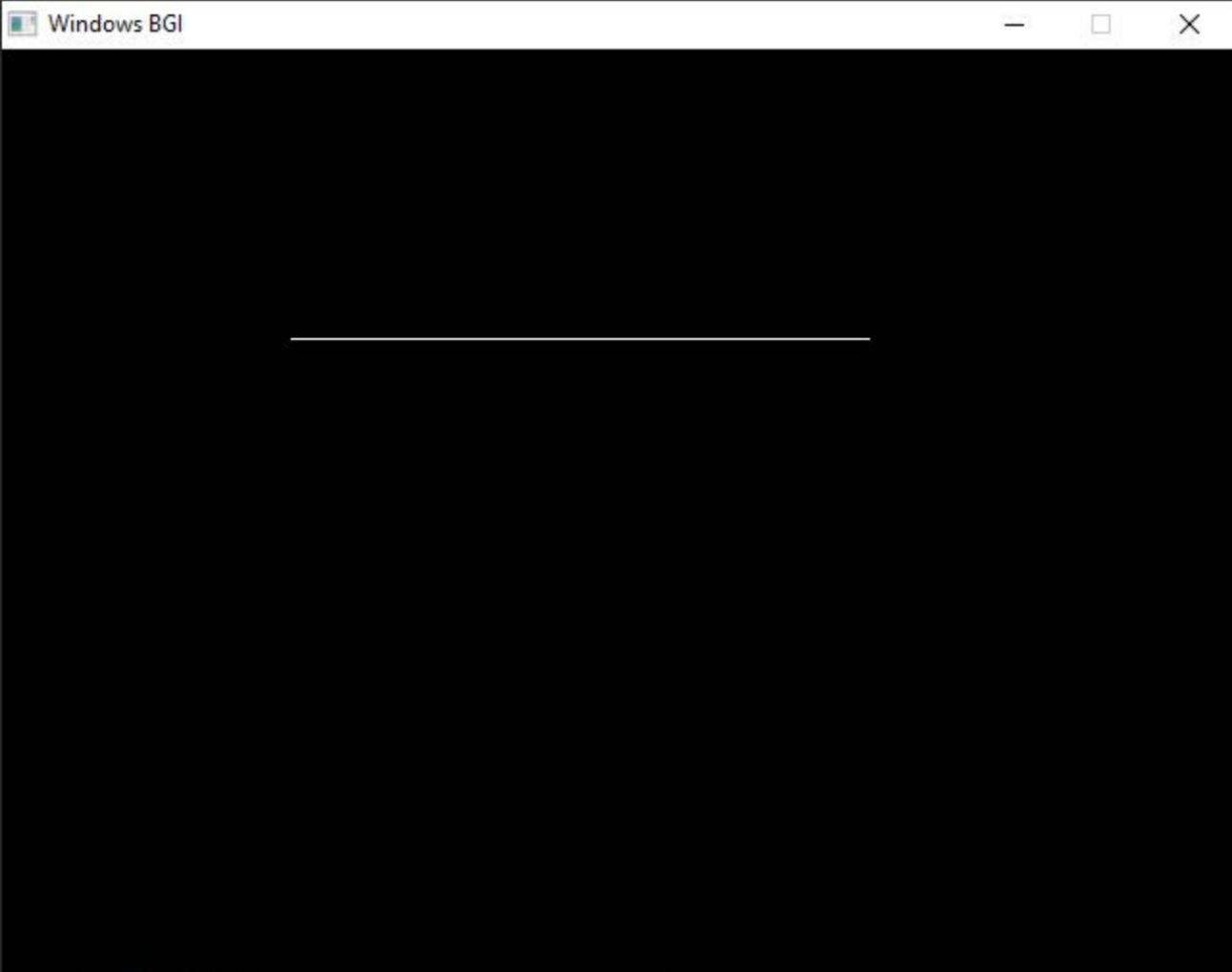


```
//Practical 68_2
/*
Write a Program to draw an arc
*/
#include <graphics.h>
int main()
{
    int gd = DETECT, gm;
    int x = 250;
    int y = 250;
    int start_angle = 0;
    int end_angle = 90;
    int radius = 100;
    initgraph(&gd, &gm, "");
    arc(x, y, start_angle, end_angle, radius);
    getch();
    closegraph();
    return 0;
}
```



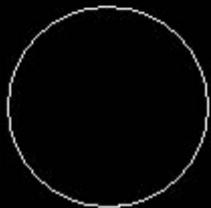


```
//Practical 68_3
/*
Write a Program to draw a line
*/
#include <graphics.h>
int main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "");
    line(150, 150, 450, 150);
    getch();
    closegraph();
}
```



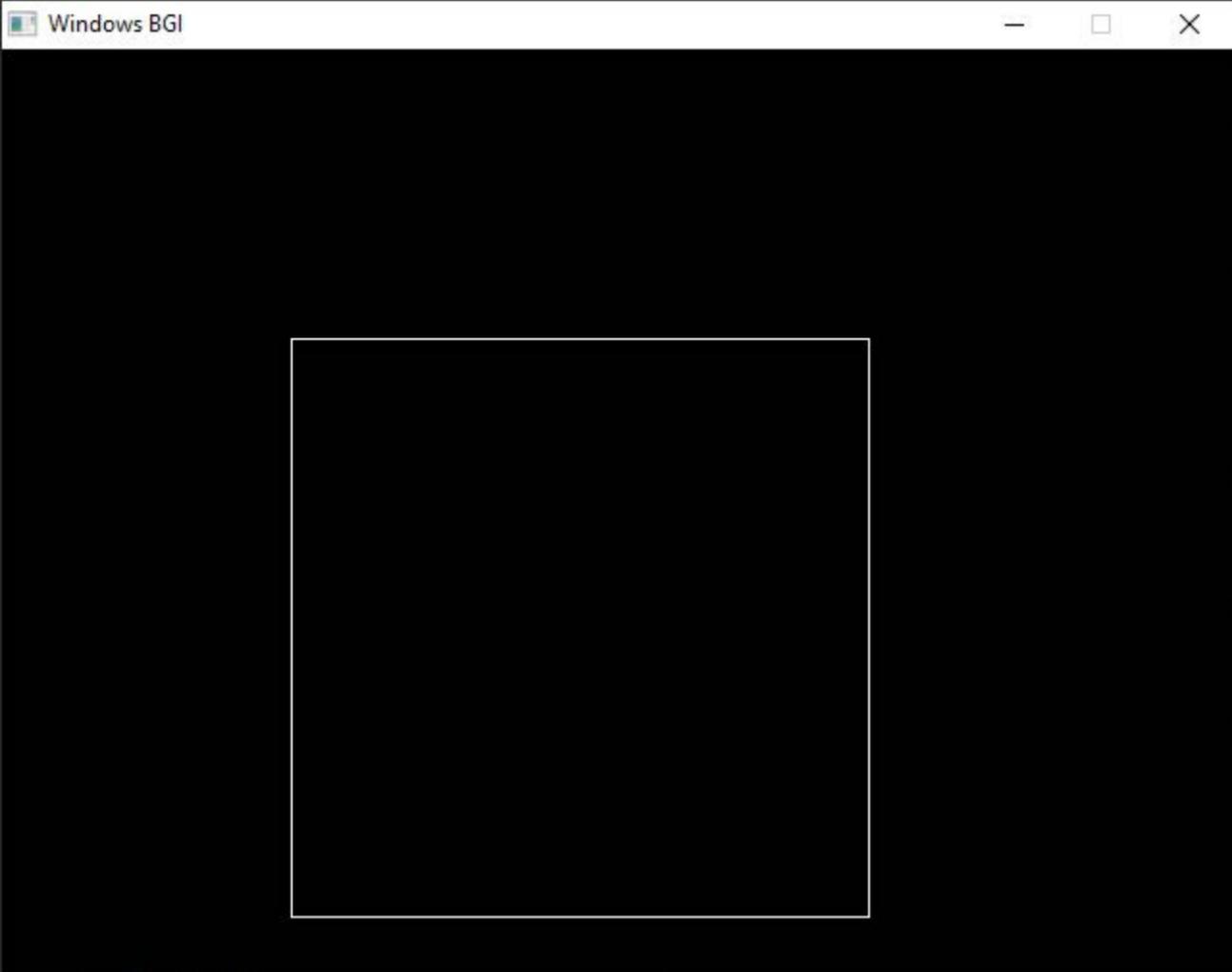


```
//Practical 68_4
/*
Write a Program to draw a circle
*/
#include <graphics.h>
int main()
{
    int gd = DETECT, gm;
    initgraph(&gd, &gm, "");
    circle(250, 200, 50);
    getch();
    return 0;
}
```



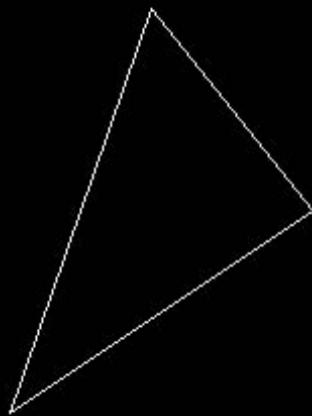


```
//Practical 69_1
/*
Write a Program to draw a rectangle
*/
#include <graphics.h>
int main()
{
    int gd = DETECT, gm;
    int left = 150, top = 150;
    int right = 450, bottom = 450;
    initgraph(&gd, &gm, "");
    rectangle(left, top, right, bottom);
    getch();
    closegraph();
    return 0;
}
```





```
//Practical 69_2
/*
Write a Program to draw a polygon
*/
#include <graphics.h>
int main()
{
    int gd = DETECT, gm;
    int arr[] = {320, 150, 400, 250,
                250, 350, 320, 150};
    initgraph(&gd, &gm, "");
    drawpoly(4, arr);
    getch();
    closegraph();
    return 0;
}
```





```
//Practical 70
/*
Write a Program to fill polygons.
*/
#include <graphics.h>
int main()
{
    int gd = DETECT, gm;
    int arr[] = {320, 150, 400, 250,
                250, 350, 320, 150};
    initgraph(&gd, &gm, "");
    fillpoly(4, arr);
    getch();
    closegraph();
    return 0;
}
```

