TITLE: BASIC PROGRAMS

1.WRITE A C PROGRAM TO FIND WHETHER A GIVEN YEAR IS LEAP YEAR OR NOT A LEAP YEAR

```c
#include<stdio.h>
int main()
{
int year;
printf("enter the value of year:");
scanf("%d",&year);
if(year%4==0){
printf("%d is a leap year",year);}
else{
    printf("%d is not a leap year");
}
}
```

```
enter the value of year:2024
2024 is a leap year

=== Code Execution Successful ===
```

Result :leap year or non leap year code executed successfully.

2.WRITE A C PROGRAM TO FIND OUT WETHER A GIVEN NUMBER IS EVEN OR ODD

```c
#include<stdio.h>
int main()
{
int a;
printf("enter the value of a:");
scanf("%d",&a);
if(a%2==0){
printf("%d is a even number",a);}
else{
    printf("%d is a odd number",a);
}
}
```

```
enter the value of a:85
85 is a odd number

=== Code Execution Successful ===
```

Result :even or odd number code executed successfully.

3.WRITE A C PROGRAM FOR THE SWAPPING OF TWO NUMBERS

```c
#include<stdio.h>

int main()
{
    int a, b, temp;
    printf("Enter the values of a and b:\n");
    scanf("%d %d", &a, &b);
    temp = a;
    a = b;
    b = temp;
    printf("After swapping, values of a and b: %d %d", a, b);
    return 0;
}
```

```
Enter the values of a and b:
78
90
After swapping, values of a and b: 90 78

=== Code Execution Successful ===
```

Result:swapping of two numbers code executed successfully.

4.WRITE A C PROGRAM TO FIND THE MAXIMUM OF THE 3 NUMBERS

```c
#include <stdio.h>
int main() {
    int a, b, c, max;
    printf("Enter three numbers: ");
    scanf("%d %d %d", &a, &b, &c);
    if (a >= b && a >= c)
        max = a;
    else if (b >= a && b >= c)
        max = b;
    else
        max = c;
    printf("The maximum number is: %d\n", max);
}
```

```
Enter three numbers: 20 45 50
The maximum number is: 50


=== Code Execution Successful ===
```

RESULT:greatest among three numbers code executed successfully.

5.WRITE A C PROGRAM TO FIND THE MAXIMUM AND MINIMUM OF THE GIVEN NUMBERS.

```c
#include <stdio.h>
int main() {
    int a, b, max, min;
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    if (a > b) {
        max = a;
        min = b;
    } else {
        max = b;
        min = a;
    }
    printf("Maximum: %d\n", max);
    printf("Minimum: %d\n", min);
}
```

```
Enter two numbers: 45 60
Maximum: 60
Minimum: 45


=== Code Execution Successful ===
```

RESULT:the maximum and minimum of the numbers code executed successfully

6.WRITE A C PROGRAM TO FIND THE SUM OF THE NUMBERS IN ARRAY

```c
#include <stdio.h>
int main() {
    int n, sum = 0;
    printf("Enter the number of elements: ");
    scanf("%d", &n);
    int arr[n];
    printf("Enter %d numbers:\n", n);
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }
    for (int i = 0; i < n; i++) {
        sum += arr[i];
    }

    printf("Sum of the numbers = %d\n", sum);

}
```

```
Enter the number of elements: 4
Enter 4 numbers:
90 87 79 67
Sum of the numbers = 323


=== Code Execution Successful ===
```

RESULT:the sum of the arrays of numbers code executed successfully

7.write a c program to find the Fibonacci series

```c
#include <stdio.h>
int main() {
    int n, first = 0, second = 1, next;
    printf("Enter the number of terms: ");
    scanf("%d", &n);
    printf("Fibonacci Series: ");
    for (int i = 0; i < n; i++) {
        if (i <= 1)
            next = i;  // first two terms are 0 and 1
        else {
            next = first + second;
            first = second;
            second = next;
        }
        printf("%d ", next);
    }
    printf("\n");
}
```

```
Enter the number of terms: 6
Fibonacci Series: 0 1 1 2 3 5


=== Code Execution Successful ===
```

Result:the Fibonacci series of the numbers code executed successfully

8.write a c program to find the factorial of the given number

```c
#include <stdio.h>
int main() {
    int n;
    unsigned long long factorial = 1;
    printf("Enter a positive integer: ");
    scanf("%d", &n);
    if (n < 0) {
        printf("Factorial is not defined for negative numbers.\n");
    } else {
        for (int i = 1; i <= n; ++i) {
            factorial *= i;
        }
        printf("Factorial of %d = %llu\n", n, factorial);
    }
}
```

```
Enter a positive integer: 9
Factorial of 9 = 362880


=== Code Execution Successful ===
```

Result:the factorial of the number code executed successfully.

9.WRITE THE C PROGRAM TO FIND THE PRIME NUMBER

```c
#include<stdio.h>
int main()
{
    int n,i,count=0;
    printf("enter the value of n:");
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        if(n%i==0){
            count++;
        }
    }
    if(count==2){
printf("it is a prime");
    }
    else{
        printf("it is not a prime");
    }
}
```

```
enter the value of n:8
it is not a prime

=== Code Execution Successful ===
```

Result:the prime number code it is executed successfully.

10.write a c program to find out the arithmetic operations

```c
#include <stdio.h>
int main() {
    double num1, num2, result;
    char operator;
    printf("Enter two numbers: ");
    scanf("%lf %lf", &num1, &num2);
    printf("Enter an operator (+ or -): ");
    scanf(" %c", &operator);
    if (operator == '+') {
        result = num1 + num2;
        printf("Result: %.2lf\n", result);
    } else if (operator == '-') {
        result = num1 - num2;
        printf("Result: %.2lf\n", result);
    } else {
        printf("Invalid operator. Please enter + or - only.\n");
    }
}
```

```
Enter two numbers: 45 67
Enter an operator (+ or -): +
Result: 112.00


=== Code Execution Successful ===
```

Result:the arithmetic operations code executed succesfully