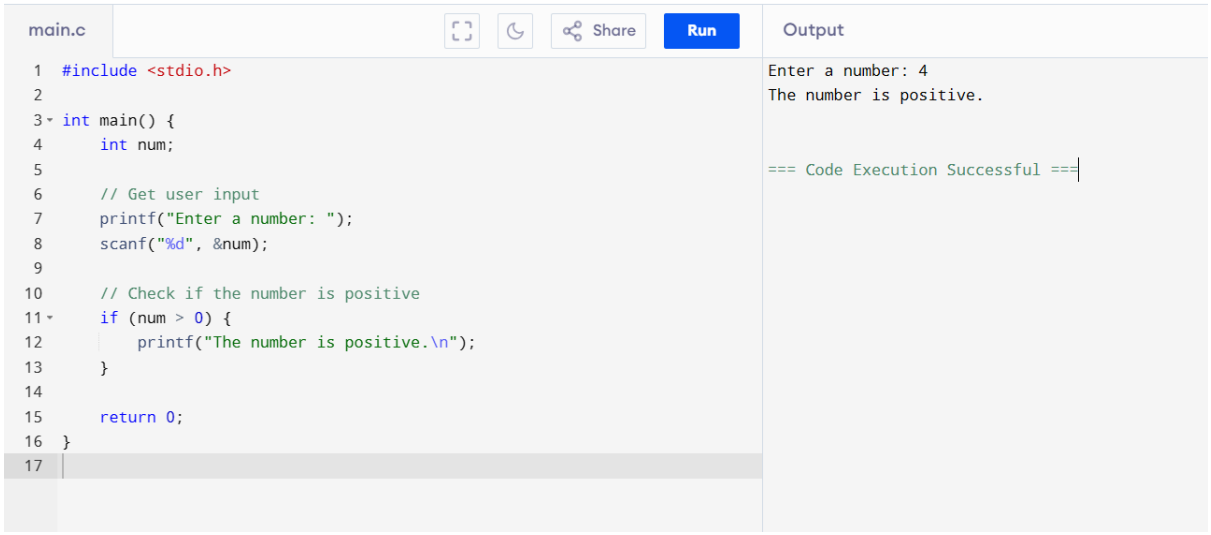
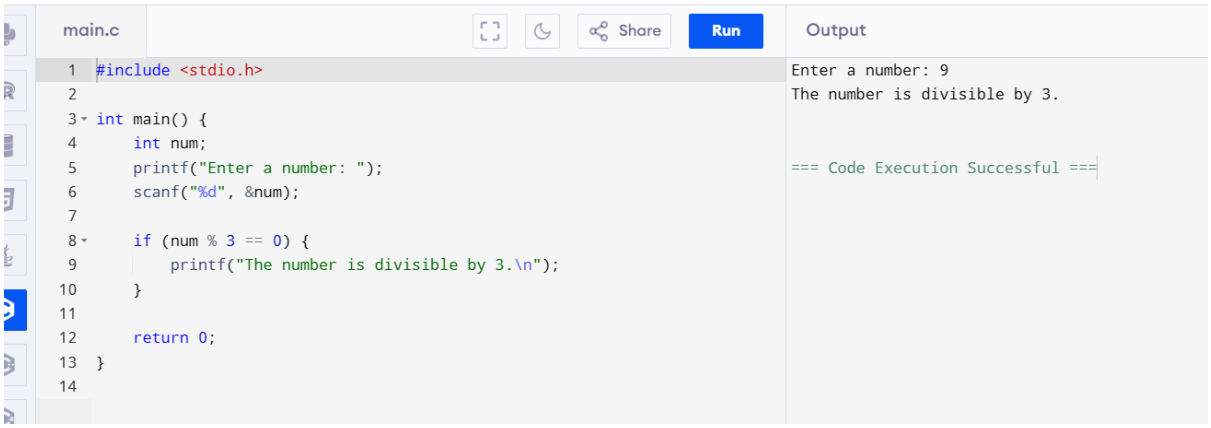
If Statements Check for Positivity: Write a program to check if a number entered by the user is positive using an if statement. Divisibility Check: Write a program to check if a number is divisible by 3 using an if statement.





If-Else Statements

3. **Odd or Even:**
   Write a program to determine if a number is odd or even using an **if-else** statement.
4. **Passing Criteria:**
   Write a program to check if a student has passed an exam based on their marks (pass marks are 40). If the marks are below 40, display "Fail."

main.c

Share Run Output

```c
#include <stdio.h>

int main() {
    int num;

    // Get user input
    printf("Enter a number: ");
    scanf("%d", &num);

    // Check if the number is odd or even
    if (num % 2 == 0) {
        printf("The number is even.\n");
    } else {
        printf("The number is odd.\n");
    }

    return 0;
}
```

```
Enter a number: 4
The number is even.


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

main.c

Share Run Output

```c
#include <stdio.h>

int main() {
    int marks;

    // Get user input
    printf("Enter marks: ");
    scanf("%d", &marks);

    // Check if the student has passed or failed
    if (marks >= 40) {
        printf("Pass\n");
    } else {
        printf("Fail\n");
    }

    return 0;
}
```

```
Enter marks: 35
Fail


=== Code Execution Succes
```

Nested If-Else Statements Triangle Type Checker: Given the lengths of three sides, write a program to determine if the triangle is valid using nested if-else. If valid, check if it is an equilateral triangle. Eligibility for Admission: Write a program to check if a student is eligible for admission based on the following criteria: Marks in mathematics >= 50 Marks in physics >= 50 Total marks (math + physics) >= 120 Use nested if-else statements

```c
#include <stdio.h>

int main() {
    int side1, side2, side3;

    // Get user input
    printf("Enter the lengths of three sides of the triangle: ");
    scanf("%d %d %d", &side1, &side2, &side3);

    // Check if it is a valid triangle
    if (side1 + side2 > side3 && side1 + side3 > side2 && side2 + side3 > side1) {
        // Valid triangle
        if (side1 == side2 && side2 == side3) {
            printf("The triangle is equilateral.\n");
        } else {
            printf("The triangle is valid but not equilateral.\n");
        }
    } else {
        // Invalid triangle
        printf("The given lengths do not form a valid triangle.\n");
    }

    return 0;
}
```

```
Enter the lengths of three sides of the triangle: 5 5 5
The triangle is equilateral.


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

main.c Share Run Output

```c
#include <stdio.h>

int main() {
    int math, physics;

    // Get user input
    printf("Enter marks in Mathematics: ");
    scanf("%d", &math);

    printf("Enter marks in Physics: ");
    scanf("%d", &physics);

    // Check eligibility
    if (math >= 50) {
        if (physics >= 50) {
            if (math + physics >= 120) {
                printf("The student is eligible for admission.\n");
            } else {
                printf("The total marks are insufficient for admission.\n");
            }
        } else {
            printf("Marks in Physics are insufficient for admission.\n");
        }
    } else {
        printf("Marks in Mathematics are insufficient for admission.\n");
    }

    return 0;
```

```
Enter marks in Mathematics: 70
Enter marks in Physics: 78
The student is eligible for admission.


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

Use nested if-else statements.

If-Else-If Ladder

7. **Grade Calculator:**
   Write a program to calculate and print the grade of a student based on their percentage using an **if-else-if ladder**:
   - = 90: Grade A
   - = 75: Grade B
   - = 50: Grade C
   - < 50: Fail
8. **Number Classification:**
   Write a program to classify an integer as positive, negative, or zero using an **if-else-if ladder**.

9. **Electricity Bill Calculation:**
   Write a program to calculate the electricity bill based on the number of units consumed using the following criteria:
   - Units <= 100: ₹5 per unit
   - Units > 100 and <= 200: ₹7 per unit
   - Units > 200: ₹10 per unit
     Use an **if-else-if ladder** to implement this.
10. **Day of the Week:**
    Write a program to print the name of the day of the week based on a number entered by the user (1 for Monday, 2 for Tuesday, ..., 7 for Sunday) using an **if-else-if ladder**.

main.c Share Run Output

```c
#include <stdio.h>

int main() {
    int percentage;
    printf("Enter the percentage: ");
    scanf("%d", &percentage);

    if (percentage >= 90) {
        printf("Grade A\n");
    } else if (percentage >= 75) {
        printf("Grade B\n");
    } else if (percentage >= 50) {
        printf("Grade C\n");
    } else {
        printf("Fail\n");
    }
    return 0;
}
```

```
Enter the percentage: 85
Grade B


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

main.c Share Run Output

```c
#include <stdio.h>

int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    if (num > 0) {
        printf("The number is positive.\n");
    } else if (num < 0) {
        printf("The number is negative.\n");
    } else {
        printf("The number is zero.\n");
    }
    return 0;
}
```

```
Enter a number: 10
The number is positive.


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

main.c

Share Run Output

```c
#include <stdio.h>

int main() {
    int units;
    float bill;
    printf("Enter the number of units consumed: ");
    scanf("%d", &units);

    if (units <= 100) {
        bill = units * 5.0;
    } else if (units <= 200) {
        bill = 100 * 5.0 + (units - 100) * 7.0;
    } else {
        bill = 100 * 5.0 + 100 * 7.0 + (units - 200) * 10.0;
    }

    printf("The electricity bill is: ₹%.2f\n", bill);
    return 0;
}
```

```
Enter the number of units consumed: 105
The electricity bill is: ₹535.00


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

main.c

Share Run Output

```c
#include <stdio.h>

int main() {
    int day;
    printf("Enter a number (1-7) for the day of the week: ");
    scanf("%d", &day);

    if (day == 1) {
        printf("Monday\n");
    } else if (day == 2) {
        printf("Tuesday\n");
    } else if (day == 3) {
        printf("Wednesday\n");
    } else if (day == 4) {
        printf("Thursday\n");
    } else if (day == 5) {
        printf("Friday\n");
    } else if (day == 6) {
        printf("Saturday\n");
    } else if (day == 7) {
        printf("Sunday\n");
    } else {
        printf("Invalid input! Please enter a number between 1 and 7.\n");
    }
    return 0;
}
```

```
Enter a number (1-7) for the day of the week: 3
Wednesday


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

Switch Case

Write a program that takes an integer (1-7) as input and uses a switch-case to print the corresponding day of the week (e.g., 1 for Monday, 2 for Tuesday, etc.).

Write a program to perform basic arithmetic operations (addition, subtraction, multiplication, division) based on the operator input (+, -, *, /) using a switch-case statement.

Write a program that takes a single character as input and uses a switch-case to determine if it is a vowel or a consonant.

Write a program to convert a single-digit number (0-9) into its word representation (e.g., 1 to "One", 2 to "Two") using a switch-case statement.

Write a program that takes an integer (1-12) as input and uses a switch-case to print the name of the corresponding month (e.g., 1 for January, 2 for February, etc.).

Write a program that takes a grade (A, B, C, D, F) as input and uses a switch-case to print the description of the grade (e.g., A: "Excellent", B: "Good", etc.).

Write a menu-driven program that offers the user options for basic mathematical operations (addition, subtraction, etc.). Based on the user's choice, perform the corresponding operation using a switch-case.

Write a program to simulate a traffic light system. Take input as R, Y, or G (Red, Yellow, Green) and use a switch-case to display the corresponding action (e.g., R for Stop, Y for Get Ready, G for Go).

Write a program that takes the year as input and uses a switch-case to check and print whether it is a leap year or not (use logical division by 4 and additional logic in cases).

Write a program to calculate the area of different shapes based on user input: 1 for Circle 2 for Rectangle 3 for Triangle
Use a switch-case to perform the respective area calculations.

main.c

Share Run Output

```c
#include <stdio.h>

int main() {
    int day;
    printf("Enter a number (1-7): ");
    scanf("%d", &day);

    switch (day) {
        case 1:
        printf("Monday\n");
        break;
        case 2:
        printf("Tuesday\n");
        break;
        case 3:
        printf("Wednesday\n");
        break;
        case 4:
        printf("Thursday\n");
        break;
        case 5:
        printf("Friday\n");
        break;
        case 6:
        printf("Saturday\n");
        break;
        case 7:
        printf("Sunday\n");
        break;
        default: printf("Invalid input! Please enter a number between 1 and 7.\n");
    }
    return 0;
}
```

```
Enter a number (1-7): 6
Saturday


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

main.c

Share | Run | Output

```c
#include <stdio.h>

int main() {
    int num1, num2, result;
    char operator;

    printf("Enter an operator (+, -, *, /): ");
    scanf(" %c", &operator);
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);

    switch (operator) {
        case '+':
            result = num1 + num2;
            printf("Result: %d\n", result);
            break;
        case '-':
            result = num1 - num2;
            printf("Result: %d\n", result);
            break;
        case '*':
            result = num1 * num2;
            printf("Result: %d\n", result);
            break;
        case '/':
            result = num1 / num2;
            printf("Result: %d\n", result);
            break;
        default: printf("Invalid operator.\n");
    }
    return 0;
}
```

```
Enter an operator (+, -, *, /): /
Enter two numbers: 2 6
Result: 0


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

```c
#include <stdio.h>

int main() {
    char ch;
    printf("Enter a single character: ");
    scanf(" %c", &ch);

    switch (ch) {
        case 'a': case 'e': case 'i': case 'o': case 'u':
        case 'A': case 'E': case 'I': case 'O': case 'U':
            printf("Vowel\n");
            break;
        default:
            printf("Consonant\n");
    }
    return 0;
}
```

```
Enter a single character: a
Vowel


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

```c
//     }
//     return 0;
// }
#include <stdio.h>

int main() {
    int num;
    printf("Enter a single-digit number (0-9): ");
    scanf("%d", &num);

    switch (num) {
        case 0:
            printf("Zero\n");
            break;
        case 1:
            printf("One\n");
            break;
        case 2:
            printf("Two\n");
            break;
        case 3:
            printf("Three\n");
            break;
        case 4:
            printf("Four\n");
            break;
        case 5:
            printf("Five\n");
            break;
        case 6:
            printf("Six\n");
            break;
        case 7:
            printf("Seven\n");
            break;
        case 8:
            printf("Eight\n");
            break;
        case 9:
            printf("Nine\n");
            break;
        default:
        printf("Invalid input! Enter a single-digit number.\n");
    }
    return 0;
}
```

```
Enter a single character: A
Vowel


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

main.c

Share Run Output

```c

int main() {
    int month;
    printf("Enter a number (1-12): ");
    scanf("%d", &month);

    switch (month) {
        case 1:
            printf("January\n");
            break;
        case 2:
            printf("February\n");
            break;
        case 3:
            printf("March\n");
            break;
        case 4:
            printf("April\n");
            break;
        case 5:
            printf("May\n");
            break;
        case 6:
            printf("June\n");
            break;
        case 7:
            printf("July\n");
            break;
        case 8:
            printf("August\n");
            break;
        case 9:
            printf("September\n");
            break;
        case 10:
            printf("October\n");
            break;
        case 11:
            printf("November\n");
            break;
        case 12:
            printf("December\n");
            break;
        default:
            printf("Invalid input! Please enter a number between 1 and 12.\n");
    }
    return 0;
```

```
Enter a number (1-12): 12
December


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

main.c

Share Run Output

```c
#include <stdio.h>

int main() {
    char grade;
    printf("Enter a grade (A, B, C, D, F): ");
    scanf(" %c", &grade);

    switch (grade) {
        case 'A':
            printf("Excellent\n");
            break;
        case 'B':
            printf("Good\n");
            break;
        case 'C':
            printf("Average\n");
            break;
        case 'D':
            printf("Poor\n");
            break;
        case 'F':
            printf("Fail\n");
            sbreak;
        default: printf("Invalid grade.\n");
    }
    return 0;
}
```

main.c

Share Run

```c
int main() {
    int num1, num2, result;
    int choice;

    printf("Choose an operation:\n1. Addition\n2. Subtraction\n3. Multiplication\n4.
        Division\n");
    scanf(" %d", &choice);
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);

    switch (choice) {
        case 1:
            result = num1 + num2;
            printf("Result: %d\n", result);
            break;
        case 2:
            result = num1 - num2;
            printf("Result: %d\n", result);
            break;
        case 3:
            result = num1 * num2;
            printf("Result: %d\n", result);
            break;
        case 4:
            result = num1 / num2;
            printf("Result: %d\n", result);
            break;
        default:
            printf("Invalid choice.\n");
    }
    return 0;
}
```

Output

```
Choose an operation:
1. Addition
2. Subtraction
3. Multiplication
4. Division
1
Enter two numbers: 2 3
Result: 5


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

main.c

Share Run

```c
#include <stdio.h>

int main() {
    char light;
    printf("Enter the traffic light (R, Y, G): ");
    scanf(" %c", &light);

    switch (light) {
        case 'R':
            printf("Stop\n");
            break;
        case 'Y':
            printf("Get Ready\n");
            break;
        case 'G':
            printf("Go\n");
            break;
        default:
            printf("Invalid input.\n");
    }
    return 0;
}
```

Output

```
Enter the traffic light (R, Y, G): G
Go


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

```c
#include <stdio.h>

int main() {
    int year;
    printf("Enter a year: ");
    scanf("%d", &year);

    switch (year % 4 == 0 && (year % 100 != 0 || year % 400 == 0)) {
        case 1:
            printf("Leap Year\n");
            break;
        case 0:
            printf("Not a Leap Year\n");
            break;
    }
    return 0;
}
```

```
Enter a year: 2002
Not a Leap Year


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

main.c

Share Run

```c
    int choice;
    double radius,base, height,area;
    int length, breadth;

    printf("Choose a shape to calculate the area:\n1. Circle\n2. Rectangle\n3.
        Triangle\n");
    scanf("%d", &choice);

    switch (choice) {
        case 1:
            printf("Enter the radius: ");
            scanf("%lf", &radius);
            area = 3.14159 * radius * radius;
            printf("Area of Circle: %.2lf\n", area);
            break;
        case 2:
            printf("Enter the length and breadth: ");
            scanf("%d %d", &length, &breadth);
            area = length * breadth;
            printf("Area of Rectangle: %.2lf\n", area);
            break;
        case 3:
            printf("Enter the base and height: ");
            scanf("%lf %lf", &base, &height);
            area = 0.5 * base * height;
            printf("Area of Triangle: %.2lf\n", area);
            break;
        default:
            printf("Invalid choice.\n");
    }
    return 0;
}
```

Output

```
Choose a shape to calculate the area:
1. Circle
2. Rectangle
3. Triangle
2
Enter the length and breadth: 5 6
Area of Rectangle: 30.00


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