

basic_inc_operator.c

```
1 #include <stdio.h>
2
3 int main(void) {
4     int x = 5;
5
6     // Increment
7     printf("Initial x = %d\n", x);    // prints 5
8     x++;                         // x becomes 6
9     printf("After x++ : x = %d\n", x); // prints 6
10
11    ++x;                         // x becomes 7
12    printf("After ++x : x = %d\n", x); // prints 7
13
14    // Decrement
15    x--;                         // x becomes 6
16    printf("After x-- : x = %d\n", x); // prints 6
17
18    --x;                         // x becomes 5
19    printf("After --x : x = %d\n", x); // prints 5
20
21    return 0;
22 }
23
24 ****
25 * Output:
26 Initial x = 5
27 After x++ : x = 6
28 After ++x : x = 7
29 After x-- : x = 6
30 After --x : x = 5
31 ****
```

prefix_postfix.c

```

1 #include <stdio.h>
2
3 int main(void) {
4     int a = 5, b;
5
6     // Postfix: value of a is used first (5), then a becomes 6
7     b = a++;
8     // after this: a == 6, b == 5
9     printf("After b = a++ -> a = %d, b = %d\n", a, b);
10
11    a = 5; // reset
12    // Prefix: a becomes 6 first, then value 6 is assigned to b
13    b = ++a;
14    // after this: a == 6, b == 6
15    printf("After b = ++a -> a = %d, b = %d\n", a, b);
16
17    // Postfix in an expression
18    a = 3;
19    printf("Using postfix in expression: a = %d, (a++ + 2) = %d, now a = %d\n",
20           a, a++ + 2, a);
21    // Evaluation: (a++ + 2) uses a's old value 3 -> 3+2 = 5; after expression a
22    // becomes 4
23
24    // Prefix in an expression
25    a = 3;
26    printf("Using prefix in expression: a = %d, (++a + 2) = %d, now a = %d\n",
27           a, ++a + 2, a);
28    // (++a + 2) increments a to 4 then 4+2 = 6
29
30    return 0;
31
32
33 ****
34 * Output:
35 ****
36 After b = a++ -> a = 6, b = 5
37 After b = ++a -> a = 6, b = 6
38 Using postfix in expression: a = 3, (a++ + 2) = 5, now a = 4
39 Using prefix in expression: a = 3, (++a + 2) = 6, now a = 4
40 ****
41

```

odd_even.c

```
1 #include <stdio.h>
2
3 // write a program to check whether a number is odd or even using ternary operator
4
5 // process: 1
6
7 int main() {
8     int number;
9     char* result; // to store the result string
10
11    printf("Enter an integer: ");
12    scanf("%d", &number);
13
14    // Using ternary operator to check odd or even
15    result = (number % 2 == 0) ? "Even" : "Odd";
16
17    printf("The number is: %s\n", result);
18
19    return 0;
20 }
```

ternary_operator.c

```
1 #include <stdio.h>
2
3 int main() {
4     int a = 10, b = 20;
5     int max;
6
7     // Use ternary operator to find the maximum value
8     max = (a > b) ? a : b;
9
10    printf("The maximum value is: %d\n", max); // Output: The maximum value is: 20
11
12    return 0;
13 }
```

odd_even_2.c

```
1 #include <stdio.h>
2
3 // write a program to check whether a number is odd or even using ternary operator
4
5 int main() {
6     int number;
7     printf("Enter an integer: ");
8     scanf("%d", &number);
9
10    // Using ternary operator to check odd or even
11    (number % 2 == 0) ?
12        printf("%d is even.\n", number) :
13        printf("%d is odd.\n", number);
14
15    // Using ternary operator to check odd or even and print the result
16    //printf("%d is %s.\n", number, (number % 2 == 0) ? "even" : "odd");
17
18    return 0;
19 }
```

odd_even_3.c

```
1 #include <stdio.h>
2
3 // write a c program to check whether a number is odd or even
4
5 int main() {
6     int number;
7
8     printf("Enter an integer: ");
9     scanf("%d", &number);
10
11    if (number % 2 == 0) {
12        printf("%d is even.\n", number);
13    } else {
14        printf("%d is odd.\n", number);
15    }
16
17    return 0;
18}
19
20
```

if.c

```
1 #include <stdio.h>
2
3 // example of if statement in C
4
5 int main() {
6
7     int age = 14;
8
9     // If statement
10    if (age >= 18) {
11        printf("Eligible for vote\n");
12    }
13
14    return 0;
15 }
```

```
1 #include <stdio.h>
2
3 // example of if-else statement in C
4
5 int main() {
6
7     int age = 14;
8
9     // If-Else statement
10    if (age >= 18) {
11        printf("Eligible for vote\n");
12    } else {
13        printf("Not eligible for vote\n");
14    }
15
16    // pass and fail example
17    int marks = 75;
18    if (marks >= 50) {
19        printf("Pass\n");
20    } else {
21        printf("Fail\n");
22    }
23
24    return 0;
25 }
```

nested-ifelse.c

```
1 #include <stdio.h>
2
3 // example of nested if-else statement in C
4
5 int main() {
6
7     int number;
8     printf("Enter a number: ");
9     scanf("%d", &number);
10
11    if (number > 0) { // Outer condition
12        printf("The number is positive.\n");
13    } else { // Outer else
14        if (number == 0) { // Inner condition
15            printf("The number is zero.\n");
16        } else {
17            printf("The number is negative.\n");
18        }
19    }
20
21    return 0;
22 }
```

nested_ifelse_2.c

```
1 #include <stdio.h>
2 int main() {
3     int marks;
4     printf("Enter your marks: ");
5     scanf("%d", &marks);
6
7     if (marks >= 50) { // Outer condition
8         if (marks >= 90) { // Inner condition
9             printf("Grade: A\n");
10        } else {
11            printf("Grade: B\n");
12        }
13    } else {
14        printf("Grade: F\n");
15    }
16
17    return 0;
18 }
```