

**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
    becomes 4
22
23     // Prefix in an expression
24     a = 3;
25     printf("Using prefix in expression: a = %d, (++a + 2) = %d, now a = %d\n",
26           a, ++a + 2, a);
27     // (++a + 2) increments a to 4 then 4+2 = 6
28
29     return 0;
30 }
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 }
```

**ifelse.c**

```
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     }
```