**If else**

Before moving to nested if-else statements. Let’s revise what if else statements are. An if-else statement is a conditional statement that decides the execution path based on whether the condition is true or false. In other words, an if-else statement is used to carry out a particular task (job) based on whether or not a defined condition is true.

*if* ( condition )

{

statement1; *// For true case.*

}

*else*

{

statement2; *// For false case.*

}

Code language: Java (java)

Each case in this example contains either a single statement or many statements enclosed in curly braces indicating an action to be performed. Any boolean expression that produces a boolean value qualifies as the condition.

The else clause is optional, i.e it’s not necessary, we can omit the else clause. This convention can be used in all Java control statements. Let’s take a look at some examples.

**Example 1: Check whether the number is divisible by 5.**

*public* *class* *codedamn* {

*public* *static* *void* *main*(String[] args) {

*int* a=10;

*if*(a%5==0)

{

*//Divisible by 5*

System.out.println("Divisibe by 5");

}

*else*

{

*//Not divisible by 5*

System.out.println("Not dividible by 5");

}

}

}

Code language: Java (java)

Output

In the above example, if the if-condition is satisfied, the statement inside it is executed otherwise it moves to the else part. The number a=10 is divisible by 5, so it prints “Divisible by 5” and the else statement is skipped.

**Nested if else statements**

We saw how helpful if and else statements are, but what if we need to check for more conditions even when one condition is satisfied? In such cases, we use nested if-else statement. Nesting is the practice of enclosing several if-else statements within an if-and-else statement.

**Example: Check number divisibility**

Let’s take the example of odd and even. If a number is even, we also need to check whether the number is divisible by 6. And if the number is odd, we need to check whether the number is divisible by 3. Here, a single if-else statement won’t be able to solve the problem. Therefore, we need to use nested if-else statements.

*public* *class* *code*{

*public* *static* *void* *main*(String[] args) {

*int* n=24;

*//if else condition to check whether the number is even or odd*

*if* (n % 2 == 0){

*//the number is even*

System.out.print("Even ");

*//nested if else condition to check if n is divisible by 6 or not*

*if* (n % 6 == 0) {

*//the number is divisible by 6*

System.out.println("and divisible by 6");

} *else* {

*//the number is not divisible by 6*

System.out.println("and not divisible by 6");

}

}

*else* {

*//the number is odd*

System.out.println("Odd ");

*//nested if else condition to check if n is divisible by 3 or not*

*if*(n % 3 == 0) {

*//the number is divisible by 3*

System.out.println("and divisible by 3");

} *else* {

*//the number is not divisible by 3*

System.out.println("and not divisible by 3");

}

}

}

}

Code language: Java (java)

Output

First, we’ll use an if statement to determine whether the number is even or odd. Then, if the number were even, we would need to put another if and else statement. In the if block we again check whether the number is divisible by 6 or not. Likewise, in the else block, we would need to determine if the number is divisible by 3 or not.

**Example: Find the tallest student among 3 students**

*public* *class* *code* {

*public* *static* *void* *main*(String[] args) {

*int* n1 = 150, n2 = 180, n3 = 170;

*if* (n1 >= n2) {

*if* (n1 >= n3)

System.out.println("Student with height: " + n1 + " is the tallest.");

*else*

System.out.println("Student with height: " + n3 + " is the tallest.");

} *else* {

*if* (n2 >= n3)

System.out.println("Student with height: " + n2 + " is the tallest.");

*else*

System.out.println("Student with height: " + n3 + " is the tallest.");

}

System.out.println("\n");

}

}

Code language: Java (java)

In the above program, instead of checking for two conditions in a single if statement, we use nested if to find the tallest student’s height. We use the following conditions:

* If n1 is greater or equal to n2:

if: n1 is greater or equal to n3, n1 is the greatest.

else: n3 is the greatest.

* Else (i.e n2>n1):

if: n2 is greater or equal to both n3, n2 is the greatest.

else: n3 is the greatest.

**Example: Check if three numbers are equal or not**

*public* *class* *code* {

*public* *static* *void* *main*(String[] args) {

*int* a = 2;

*int* b = 2;

*int* c = 2;

*if* (a == b) {

*// nested if else condition to check if c is equal to a and b*

*if* (a == c) {

*// all are equal*

System.out.println("Equal");

} *else* {

*// a!=c*

System.out.println("Not equal");

}

} *else* {

*// a!=b*

System.out.println("Not equal");

}

}

}