**What is Type Coercion in JavaScript ?**

**Type Coercion** refers to the process of automatic or implicit conversion of values from one data type to another.

This includes conversion from Number to String, String to Number, Boolean to Number etc. when different types of operators are applied to the values.

In case the behavior of the implicit conversion is not sure,the constructors of a data type can be used to convert any value to that datatype, like the **Number()**, **String()**or **Boolean()** constructor.

1. **String to Number Conversion:** When any string or non-string value is added to a string, it always converts the non-string value to a string implicitly. When the string ‘Rahul’ is added to the number 10 then JavaScript does not give an error. It converts the number 10 to string ’10’ using coercion and then concatenates both the strings.

Example

<script>

        // The Number 10 is converted to

        // string '10' and then '+'

        // concatenates both strings

        var x = 10 + '20';

        var y = '20' + 10;

        // The Boolean value true is converted

        // to string 'true' and then '+'

        // concatenates both the strings

        var z = true + '10';

        document.write(x);

        document.write("<br>");

        document.write(y);

        document.write("<br>");

        document.write(z);

    </script>

output

1020

2010

True10

**2. String to Number Conversion:** When an operation like subtraction (-), multiplication (\*), division (/) or modulus (%) is performed, all the values that are not number are converted into the number data type, as these operations can be performed between numbers only. Some examples of this are shown below.

**Example:**

 <script>

        // The string '5' is converted

        // to number 5 in all cases

        // implicitly

        var w = 10 - '5';

        var x = 10 \* '5';

        var y = 10 / '5';

        var z = 10 % '5';

        document.write(w);

        document.write("<br>")

        document.write(x);

        document.write("<br>")

        document.write(y);

        document.write("<br>")

        document.write(z);

    </script>

Output

5

50

2

0

**3. Boolean to Number:** When a Boolean is added to a Number, the Boolean value is converted to a number as it is safer and easier to convert Boolean values to Number values. A Boolean value can be represented as 0 for ‘false’ or 1 for ‘true’. Some examples of this are shown below.

**Example:**

<script>

        // The Boolean value true is

        // converted to number 1 and

        // then operation is performed

        var x = true + 2;

        // The Boolean value false is

        // converted to number 0 and

        // then operation is performed

        var y = false + 2;

        document.write(x);

        document.write("<br>")

        document.write(y);

    </script>

Output

3

2

**4. The Equality Operator:** The equality operator (==) can be used to compare values irrespective of their type. This is done by coercing a non-number data type to a number. Some examples of this are shown below:

**Example:**

 <script>

        // Should output 'true' as string '10'

        // is coerced to number 10

        var x = (10 == '10');

        // Should output 'true', as boolean true

        // is coerced to number 1

        var y = (true == 1);

        // Should output 'false' as string 'true'

        // is coerced to NaN which is not equal to

        // 1 of Boolean true

        var z = (true == 'true');

        document.write(x);

        document.write("<br>");

        document.write(y);

        document.write("<br>");

        document.write(z);

    </script>

Output

True

True

False