```
x=4
let otp="";
for(i=0;i<4;i++){
   otp+=Math.floor(Math.random()*10)
}
console.log(otp)
```

output:-0934

```
function generateotp(){
   let otp=Math.floor(100+Math.random()*9)
   for(i=0;i<=6;i++)
   return otp;
}
let otp=generateotp()
console.log(otp)
```

output:-101

1. How `isNaN` Works in Different Scenarios

The `isNaN` function in JavaScript is used to determine whether a value is NaN (Not a Number) or can be converted to a number. Here are the key scenarios to consider:

Basic Usage: `isNaN(value)` returns `true` if the `value` is NaN or cannot be converted to a number; otherwise, it returns `false`.

javascript

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```
isNaN(NaN);         // true
isNaN(123);         // false
isNaN('hello');     // true (cannot be converted to a number)
isNaN('123');       // false (can be converted to the number 123)
isNaN(true);        // false (true is coerced to 1)
isNaN(undefined);   // true (cannot be converted to a number)
isNaN(null);      // false (0, not NaN)
isNaN('');        // false (0, not NaN)
isNaN([]);        // false (0, not NaN)
isNaN({});        // true (object cannot be converted to a number)
```

- **Caveat**: `isNaN` can be misleading with non-numeric strings. For strict numeric checking, use `Number.isNaN` introduced in ES6.

javascript

Copy code

```
isNaN('123abc');    // true (string with non-numeric characters)
Number.isNaN('123abc');  // false (strictly checks if the value is NaN)
```

2. Types of Coercion

Coercion in JavaScript refers to the automatic or implicit conversion of values from one data type to another. There are two main types of coercion:

- **Implicit Coercion**: This happens when JavaScript automatically converts data types during operations.

javascript

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```
1 + '2';      // '12' (number 1 is coerced into string '1')
true + 1;     // 2 (true is coerced to 1)
'5' * '2';    // 10 (both strings are coerced to numbers)
```

- **Explicit Coercion**: This occurs when you manually convert a value from one type to another using functions or operators like Number(), String(), parseInt(), parseFloat(), etc.

javascript

Copy code

```
Number('123');       // 123 (string to number)
String(456);         // '456' (number to string)
+'42';               // 42 (unary plus operator for number coercion)
parseInt('10px');    // 10 (string to integer)
```

Coercion can lead to unexpected results if not understood properly, especially when mixing different data types in operations.

Understanding these concepts helps in writing JavaScript code that behaves predictably and efficiently based on the types of data being used.