

Input and Output

Interfacing with the outside world

Input

```
// ask user for input (string)
prompt('what is your name?');
// => 'morty'

// ask user for input (boolean);
confirm('are you sure?')
// => true

// read from document
document.getElementById('myForm').value;
// => 'buy milk'
```

We're sampling the outside world!

Output

```
// print to console
console.log('sleepy gary');

// alert to browser
alert('virus detected!');

// write to document
document.getElementById('myForm').innerHTML = 'hi there';
```

We're influencing the outside world!

Program Structure

Guess The Number

- User has to guess a number between 1 and 100
- User either guesses correct, or has to try again

Math

Mathematical constants and functions

```
Math.round(5.3);
```

```
// => 5
```

```
Math.floor(5.7);
```

```
// => 5
```

```
Math.ceil(5.3);
```

```
// => 6
```

```
Math.PI;
```

```
// => 3.141592653589793
```

```
Math.sqrt(9);
```

```
// => 3
```

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math

Random numbers

```
Math.random( );  
// => 0.2576823248285418
```

```
Math.random( );  
// => 0.36462286009086364
```

```
Math.random( );  
// => 0.9404074868898948
```

```
Math.random( );  
// => 0.9941247924998635
```

```
Math.random( );  
// => 0.7496859097128277
```

Random numbers

```
(Math.random() * 100) + 1  
// => 69.12020362076477
```

```
(Math.random() * 100) + 1  
// => 48.23951336423961
```

```
(Math.random() * 100) + 1  
// => 63.47171780389582
```

```
(Math.random() * 100) + 1  
// => 2.5045917636961503
```

```
(Math.random() * 100) + 1  
// => 60.04676542471321
```


Random numbers

```
Math.floor(Math.random() * 100) + 1)  
// => 76
```

```
Math.floor(Math.random() * 100) + 1)  
// => 54
```

```
Math.floor(Math.random() * 100) + 1)  
// => 2
```

```
Math.floor(Math.random() * 100) + 1)  
// => 1
```

```
Math.floor(Math.random() * 100) + 1)  
// => 22
```

Guess The Number

```
var numberToGuess = Math.floor(Math.random() * 100) + 1;
var lastGuessed = -1;

while (numberToGuess !== lastGuessed) {
  lastGuessed = prompt('Guess the number between 1 and 100');

  if (lastGuessed === numberToGuess) {
    console.log('You guessed the number!');
    break;
  }
}
```

Guess The Number

```
function playGuessTheNumber() {  
  var numberToGuess = Math.floor(Math.random() * 100) + 1;  
  var lastGuessed = -1;  
  
  while (numberToGuess !== lastGuessed) {  
    lastGuessed = prompt('Guess the number between 1 and 100');  
  
    if (lastGuessed === numberToGuess) {  
      console.log('You guessed the number!');  
      break;  
    }  
  }  
}  
  
playGuessTheNumber();
```