# Javascript
## Cheat Sheet

PART - 01

# Basics

On page script

```
<script type="text/javascript">
  ...
</script>
```

Include external JS file

```
<script src="filename.js"></script>
```

Functions

```
function addNumbers(a, b) {
  return a + b;
}
```

Comments

```
/* Multi line
  comment */
// One line
```

Logging/Print

```
console.log(a);
document.write(a);
alert(a);
confirm("Really?");
prompt("Your age?","0");
```

## Data Types

```
var age = 18;                                // number
var name = "Jane";                           // string
var name = {first:"Jane", last:"Doe"};       // object
var truth = false;                           // boolean
var sheets = ["HTML","CSS","JS"];            // array
var a; typeof a;                             // undefined
var a = null;                                // value null
```

## If - Else Statement

```
if ((age >= 14) && (age < 19)) { // logical condition
  status = "Eligible.";          // executed if condition is true
} else {                         // else block is optional
  status = "Not eligible.";      // executed if condition is false
}
```

# Javascript Loops

For Loop

```
for (var i = 0; i < 10; i++) {
  document.write(i + "<br />");
}
```

While Loop

```
var i = 1;
while (i < 100) {
 i *= 2;
 document.write(i + ", ");
}
```

Do-While Loop

```
var i = 1;
do {
 i *= 2;
 document.write(i + ", ");
} while (i < 100)
```

# Javascript Strings

```
var abc = "abcdefghijklmnopqrstuvwxyz";
var esc = 'I don\'t \n know';   // \n new line
var len = abc.length;           // string length
abc.indexOf("lmno");            // find substring
abc.lastIndexOf("lmno");        // last occurance
abc.slice(3, 6);                // cuts out "def",
abc.replace("abc","123");       // find and replace
abc.toUpperCase();              // convert to upper case
abc.toLowerCase();              // convert to lower case
abc.concat(" ", str2);          // abc + " " + str2
abc.charAt(2);          // character at index: "c"
abc[2];                 // unsafe, abc[2] = "C" doesn't work
abc.charCodeAt(2);      // character code at index: "c" -> 99
abc.split(",");         // splitting a string on commas
abc.split("");          // splitting on characters
128.toString(16);       // number to hex(16), octal or binary
```

# Javascript Math

```
var pi = Math.PI;    // 3.141592653589793
Math.round(4.4);     // = 4 - rounded
Math.round(4.5);     // = 5
Math.pow(2,8);       // = 256 - 2 to the power of 8
Math.sqrt(49);       // = 7 - square root
Math.abs(-3.14);     // = 3.14 - absolute, positive value
Math.ceil(3.14);     // = 4 - rounded up
Math.floor(3.99);    // = 3 - rounded down
Math.sin(0);         // = 0 - sine
Math.cos(Math.PI);       // OTHERS: tan,atan,asin,acos,
Math.min(0, 3, -2, 2);   // = -2 - the lowest value
Math.max(0, 3, -2, 2);   // = 3 - the highest value
Math.log(1);             // = 0 natural logarithm
Math.exp(1);             // = 2.7182pow(E,x)
Math.random();           // random number between 0 and 1
Math.floor(Math.random() * 5) + 1;
// random integer, from 1 to 5
```

# Javascript Numbers

```
var pi = 3.141;
pi.toFixed(0);           // returns 3
pi.toFixed(2);           // returns 3.14
pi.toPrecision(2)        // returns 3.1
pi.valueOf();            // returns number
Number(true);            // converts to number
Number(new Date())       // number of milliseconds since 1970
parseInt("3 months");    // returns the first number: 3
parseFloat("3.5 days"); // returns 3.5
Number.MAX_VALUE         // largest possible JS number
Number.MIN_VALUE         // smallest possible JS number
Number.NEGATIVE_INFINITY// -Infinity
Number.POSITIVE_INFINITY// Infinity
```