

# Javascript ES6

## Lesson 3: Working with Predefined Core Objects



# Lesson Objectives

Data Types in JavaScript

String Object

Math Object

Date Object





### 3.1: Data Types in JavaScript

## Data Types in JavaScript

JavaScript has predefined objects and uses standard browser objects. Some of them are discussed here

Predefined objects in JavaScript are:

- String
- Math
- Date



## 3.2: String Object

# String Object

Properties of a string object:

- Length: The length property returns the number of characters in a string.
- Syntax : `stringObject.length`
- `"Lincoln".length // result = 7`



### 3.2: String Object

## String Object(Parsing Methods )

`charAt(index)`: The `charAt()` method returns the character at a specified position.

- Syntax: `String charAt(index)`
- `"HelloWorld".charAt(5)// result "W"`

`concat()`

- The `concat()` method is used to join two or more strings
- One or more string objects to be joined to a string
- Syntax: `stringObject.concat(stringX,stringX,...,stringX)`



### 3.2: String Object

## String Object(Parsing Methods Contd)

### match(regExpression)

- Searches for a specified value in a string
- Syntax: `string.match(regExpression)`

### replace(regExpression, replaceString)

- Replaces some characters with some other characters in a string.
- Syntax: `string.replace( regExpression, replaceString)`

### substr(start [, length])

- Extracts a specified number of characters in a string, from a start index .
- Syntax: `string.substr(start [, length])`



### 3.2: String Object

## String Object(Converting Methods )

### toLowerCase()

- Displays a string in lowercase letters
- `string.toLowerCase()`

### toUpperCase()

- Displays a string in uppercase letters
- `string.toUpperCase()`



### 3.2: String Object

## String Object (Formatting Methods)

### Formatting Methods:

- `string.bold()` : Displays a string in bold
- `string italics()` : Displays a string in italic
- `string.fontcolor (colorValue)` : Displays a string in a specified color
- `string.fontsize(integer1to7)` : Displays a string in a specified size
- `string.big()` : Displays a string in a big font
- `string.small()` : Displays a string in a small font





### 3.2: String Object

## URL String Encoding and Decoding

JavaScript includes two functions for encoding & decoding

- `escape()`
- encodes the string that is contained in the string argument to make it portable.
- So it can be transmitted across any network to any computer that supports ASCII characters.

`unescape()`

- Use the `unescape` function to decode an encoded sequence that was created using `escape`.

# Demo



string\_len.html  
string\_method.html  
string\_style.html





### 3.3: Math Object

## Math Object - Properties & Methods

Property/ Method	Description
Math.PI	PI (3.141592653589793116)
Math.SQRT2	Square root of 2 (1.4142)
Math.random()	Random number between 0 and 1
Math.round(val)	$N+1$ when $val \geq n.5$ ; otherwise $N$
Math.max(val1, val2)	The greater of <i>val1</i> or <i>val2</i>
Math.min(val1, val2)	The lesser of <i>val1</i> or <i>val2</i>

# Demo



Rand\_fun.html





Properties and Methods:

```
var dateObject = new Date([parameters])
```

Properties	Description
dateObj.getTime()	Milliseconds since 1/1/70 00:00:00 GMT
dateObj.getYear()	Specified year minus 1900
dateObj.getMonth()	Month within the year (January = 0)
dateObj.getDate()	Date within the month



## Date and Time Arithmetic

To simplify the tasks of formatting and manipulating dates, JavaScript provides a Date object along with some extra functions that help you work with dates.

```
var oneMinute = 60 * 1000
var oneHour = oneMinute * 60
var oneDay = oneHour * 24
var oneWeek = oneDay * 7
targetDate = new Date()
dateInMs = targetDate.getTime()
dateInMs += oneWeek
targetDate.setTime(dateInMs)
```

# Demo



Date\_info.html  
DateDifference.html  
Utc\_ex.html



# Lab



## Lab 3:

- Working with Predefined Core Objects





# Summary



Predefined objects of JavaScript like String, Math and Date  
How to use predefined objects  
How to manipulate their properties and invoke methods





## Review Question

Question 1: Which is the method to extract a single character from a string when you know the position of that character.

- Option 1: `string.charAt()`
- Option 2: `string.charAtIndex()`

Question 2: `getDate()` returns the day within the month.

- True/False

Question 3: To convert a plain string to one with these escape codes, use the \_\_\_\_\_ function

