

Internet Applications

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JavaScript

Reading:

„JavaScript Guide“

<https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide>

- ▶ Cross-platform, object-oriented, very free-form scripting language
- ▶ Originally developed in 1995 by Brendan Eich, while at Netscape Communications (recently at Mozilla)
- ▶ Industry standard known as ECMAScript (ECMA-262), also ISO/IEC-16262
- ▶ Latest version: JavaScript 1.8.5

JavaScript Features

Reading:

„JavaScript Tutorial“

<http://www.w3schools.com/js/default.asp>

- Dynamic typing
- Object-based
- Run-time evaluation
- Functions are objects
- Prototype-based objects
- Regular expressions
- Client-side or server-side
- Interpreted
- DOM API
- Web browser event handling

Example: event handling

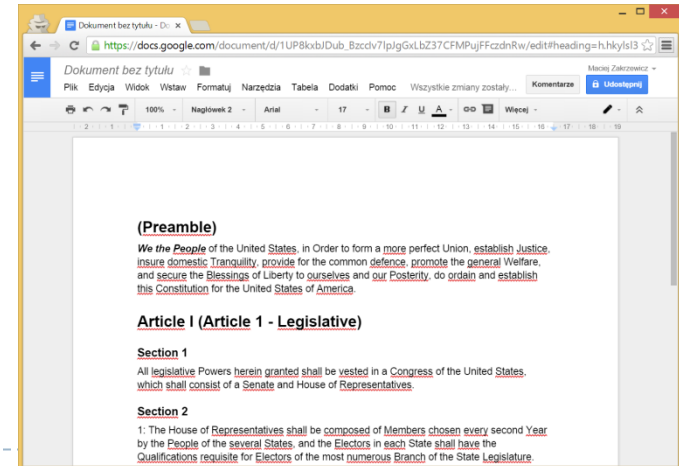
```
<!DOCTYPE html>
<html>
<head>
  <script>
    function showDate() {
      document.getElementById('par1').innerHTML=Date();
    }
  </script>
</head>
<body>
  <button onclick="showDate()">What time?</button>
  <p id="par1"></p>
</body>
</html>
```

What time?

Tue Mar 10 2015 19:20:26 GMT+0100

JavaScript Application Areas

- ▶ Add client-side behavior to HTML pages (known as Dynamic HTML, DHTML)
 - ▶ load new page content without page reloading (AJAX)
 - ▶ animation of page elements
 - ▶ interactive content, eg. games
 - ▶ form validation
 - ▶ web analytics
 - ▶ Rich Internet Applications (RIA)
 - ▶ Single Page Web Applications



JavaScript Libraries and Frameworks

- jQuery
 - popular JavaScript library
 - simplifies programming
 - selectors, events, effects, AJAX, HTML/CSS, traversing

Reading:

„jQuery Tutorial“

<http://www.w3schools.com/jquery/default.asp>

- Server-side JavaScript
 - Node.js

- Client-side JavaScript
 - Bootstrap
- Single Page Web Applications (MVC-like)
 - AngularJS
 - Backbone.js
 - Ember.js
- Features
 - templating
 - data binding
 - routing
 - testing

Angular.js Example: Client Code (JS)

```
<div ng-app="" ng-controller="customersController">
  <table>
    <tr ng-repeat="x in names">
      <td>{{ x.Name }}</td>
      <td>{{ x.Country }}</td>
    </tr>
  </table>
</div>
<script>
function customersController($scope,$http) {
    $http.get("http://www.w3schools.com/website/customers_mysql.php")
    .success(function(response) {$scope.names = response;});
}
</script>
```

Alfreds Futterkiste	Germany
Berglunds snabbköp	Sweden
Centro comercial Moctezuma	Mexico
Ernst Handel	Austria
FISSA Fabrica Inter. Salchichas S.A.	Spain
Galería del gastrónomo	Spain
Island Trading	UK
Königlich Essen	Germany
Laughing Bacchus Wine Cellars	Canada
Mazzini Alimentari Riuniti	Italy

source: w3schools.com

Angular.js Example: Server Code (PHP)

```
<?php
header("Access-Control-Allow-Origin: *");
header("Content-Type: application/json; charset=UTF-8");

$conn = new mysqli("myServer", "myUser", "myPassword", "Northwind");

$result = $conn->query("SELECT CompanyName, City, Country FROM Customers");

$outp = "[";
while($rs = $result->fetch_array(MYSQLI_ASSOC)) {
    if ($outp != "[") {$outp .= ",";}
    $outp .= '{"Name":"' . $rs["CompanyName"] . '",' . '
    $outp .= '"City":"' . $rs["City"] . '",' . '
    $outp .= '"Country":"' . $rs["Country"] . '"}';
}
$outp .= "]";

$conn->close();

echo($outp);
?>
```

```
[{"Name": "Alfreds Futterkiste", "City": "Berlin", "Country": "Germany"}, {
  "Name": "Berglunds snabbköp", "City": "Luleå", "Country": "Sweden"}, {"Name":
  "Centro comercial Moctezuma", "City": "México D.F.", "Country": "Mexico"}, {
  "Name": "Ernst Handel", "City": "Graz", "Country": "Austria"}, {"Name": "FISSA
  Fabrica Inter. Salchichas S.A.", "City": "Madrid", "Country": "Spain"}, {"Name":
  "Galería del gastrónomo", "City": "Barcelona", "Country": "Spain"}, {"Name":
  "Island Trading", "City": "Coves", "Country": "UK"}, ...]
```

source: w3schools.com

Further Reading

Reading:

„Node Beginner Book“

<http://www.nodebeginner.org/>

Reading:

„Bootstrap Tutorial“

<http://www.w3schools.com/bootstrap/default.asp>

Reading:

„AngularJS Tutorial“

<http://www.w3schools.com/angular/default.asp>

Reading:

„Ember Getting Started“

<http://emberjs.com/guides/getting-started/>

Reading:

„A Complete Guide for Learning Backbone.js“

<http://www.codebeerstartups.com/2012/12/a-complete-guide-for-learning-backbone-js/>