Assignment 11 (NF) - Repetition

-- no due date, no submission --

This assignment is meant to help you prepare for the exam. It is not necessary to turn in your solutions. The solutions will be discussed in the Q&A sessions during the tutorial next week.

Task 1: PHP & Sessions

a) You want to implement a “guess-my-number” game with PHP.

```
<!DOCTYPE html><html>
<head lang="en">
    <title>Guess a Number</title>
</head>
<body>
<form method="post">
    <input type="number" name="guess" />
    <input type="submit" value="Check!" />
</form>
```

Extend the code fragment from the previous page to meet these requirements:

a. Create a variable that holds a secret number of your choosing.
b. If the form was submitted, check if the user entered the correct number. If the guess was correct, inform the user and reset the game. Otherwise, inform the user that the guessed number was incorrect.
c. The game counts how often the user submits the form. Display the number of guesses!

b) How are Sessions destroyed in PHP?

c) How do you transparently transmit form data to the server?

There is a database “mmn_exam” that contains the table “students” with the following data:

1 - students

ID	matNr	lastname	firstname	program	semester
1	22548796	Mustermann	Max	Medieninformatik	3
2	54563254	Hauser	Tanja	Medieninformatik	1
3	55222336	Sauer	Simon	Psychologie	5
4	24563535	Deutsch	Sara	BWL	9
5	98996542	Lauber	Ina	BWL	8

a) What is the returned result for each of the following SQL statements:

   a. SELECT * FROM students

   b. SELECT lastname, firstname FROM students WHERE matNr=24563535

   c. SELECT matNr FROM students WHERE program=’BWL’ AND semester > 4

b) You want to utilize a PHP script to display data from the table above in a web page. Extend the following statement to do just that.

```php
<?php
   $db = mysqli_connect("localhost", "root", "", "mmn_exam");
   $query = "SELECT matNr FROM students WHERE semester >= 3 ";




?>
```

a) Extend the following code fragment to dynamically draw a rectangle on a canvas. Its size (width and height) depend on the number the users enter into the input field.

```
<!DOCTYPE html>
<html>
<head lang="en">
    <meta charset="UTF-8">
    <title>Stop! Rectangle-Time.</title>
</head>
<body>
<div><input type="number" placeholder="20"
onkeyup="drawRectangle(event)"/></div>
<div><canvas id="myCanvas" width="600"
height="600"></canvas></div>
<script>
    var canvas, context;
    function clearCanvas(){
        context.clearRect(0,0,
                context.canvas.width,
                context.canvas.height);
    }









    function drawRectangle(e){









    }

</script>
</body>
</html>
```

b) Consider the following page, that lets the users choose a password:

```
<!DOCTYPE html>
<html>
<head lang="en">
    <meta charset="UTF-8">
    <title></title>
</head>
<body>
<h1>Choose a password:</h1>
 <form>









    <label for="pass">Password: </label>
    <input id="pass" type="password" name="pass"
           pattern="[a-jK-Z]+[0-9]+"
           required/>
    <input type="submit" id="submit"/>
</form>
</body>
</html>
```

a. Which of the following passwords are valid, according to the pattern?
   i. abc1234
   ii. 123456
   iii. ajKZ
   iv. MYPaSSWORd1
   v. jK09
   vi. abc123abc123

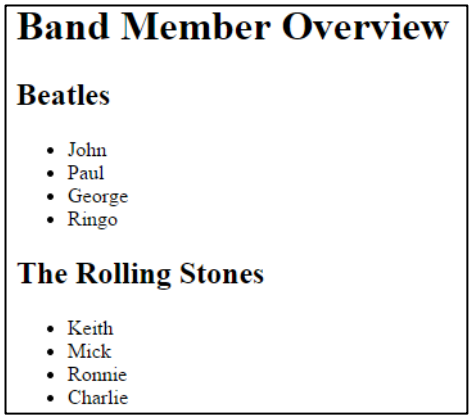
b. Extend the form. It should take a user-name that can consist of any number of alphanumerical characters. This field is not optional

c. What does the web page look like in the browser? Create a rough drawing!

```
{
  "bands": [
    {
      "name": "Beatles",
      "members": [
        "John",
        "Paul",
        "George",
        "Ringo"
      ]
    },
    {
      "name": "The Rolling Stones",
      "members": [
        "Keith",
        "Mick",
        "Ronnie",
        "Charlie"
      ]
    }
  ]
}
```

a) There is a web-service that delivers information about bands. The data is returned as JSON and looks like the fragment above. The web-service's URL is http://www.bands.info.

   a. Complete the function getBands(successCallback). It should request the information from the service and pass it to the successCallback, once it received a response.
   b. Complete the function bandDataAvailable(data).
      i. data is the response from the NodeJS back end.
      ii. Generate a separate <div / > for each band.
      iii. Each div should have a heading, that tells the band's name
      iv. Each div should include an un-numerated list of the band's members.



   c. The script loads in the <head>, so potentially the DOM is not yet complete, when the script is executed. Use a jQuery callback to make sure that the script is executed when the DOM is ready.

Put your code into the fragment on the next page!

b) Explain the advantages and disadvantages of AJAX!

c) Explain the advantages of JSON over XML!


```
<!DOCTYPE html>
<html>
<head lang="en">
    <meta charset="UTF-8">
    <title>Bands</title>
    <script src="https://code.jquery.com/jquery-2.1.3.min.js"></script>
    <script>


            function getBands(successCallback){



            }

            function bandDataAvailable(data){

















            }

            getBands(bandDataAvailable);



    </script>
</head>
<body>
<div id="container"> <h1>Band Member Overview</h1>  </div>
</body></html>
```

a) In the lecture you have come to know the Resource Description Framework (RDF). It is used to represent information about resources in the web. Give three exemplary resources that can be described with the RDF.

b) One of the core components of RDF is the *Statement*. Which components are included in a statement? Explain each component!

c) Draw an RDF Graph for the following RDF Document:

```
<?xml version="1.0" ?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
         xmlns:contact="http://www.w3.org/2000/10/swap/pim/contact#">
    <contact:Person
            rdf:about="http://www.w3.org/People/EM/contact#me">
        <contact:fullName>Eric Miller</contact:fullName>
        <contact:mailbox rdf:resource="mailto:em@w3.org"/>
        <contact:personalTitle>Dr.</contact:personalTitle>
    </contact:Person>
</rdf:RDF>
```