Fachbereich 07 Informatik/Mathematik



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Übung 1

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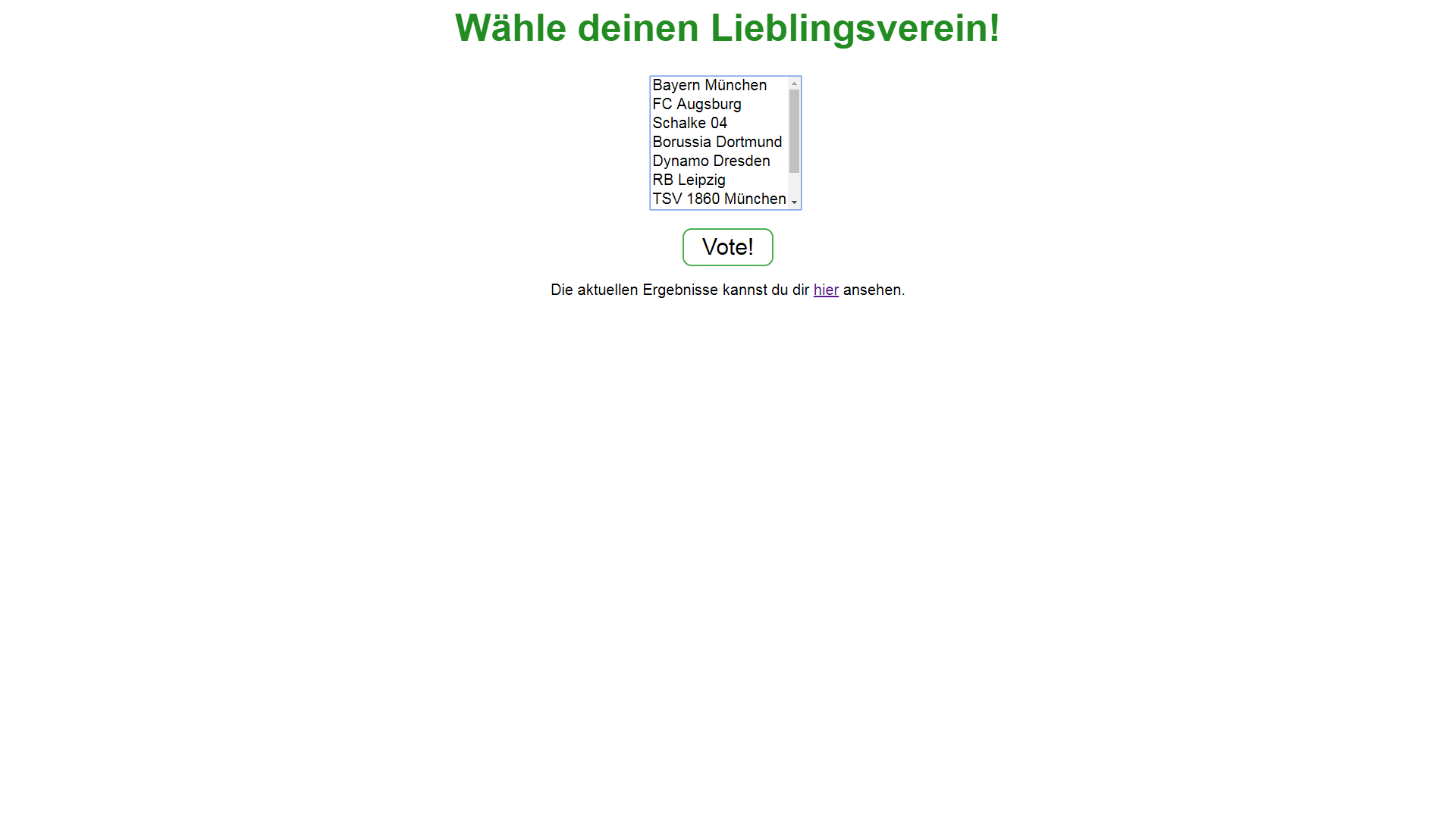
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# Aufgaben

## Teil A

Im ersten Teil der Übung sollten wir eine Webseite erstellen, wo Nutzer (anonym) für ihren Lieblingsfußballverein abstimmen können. Zusätzlich sollte es die Möglichkeit geben, dass ein Nutzer einen weiteren (noch nicht existierenden Verein) zur Liste hinzufügt, unter der dann letztendlich abgestimmt wird.

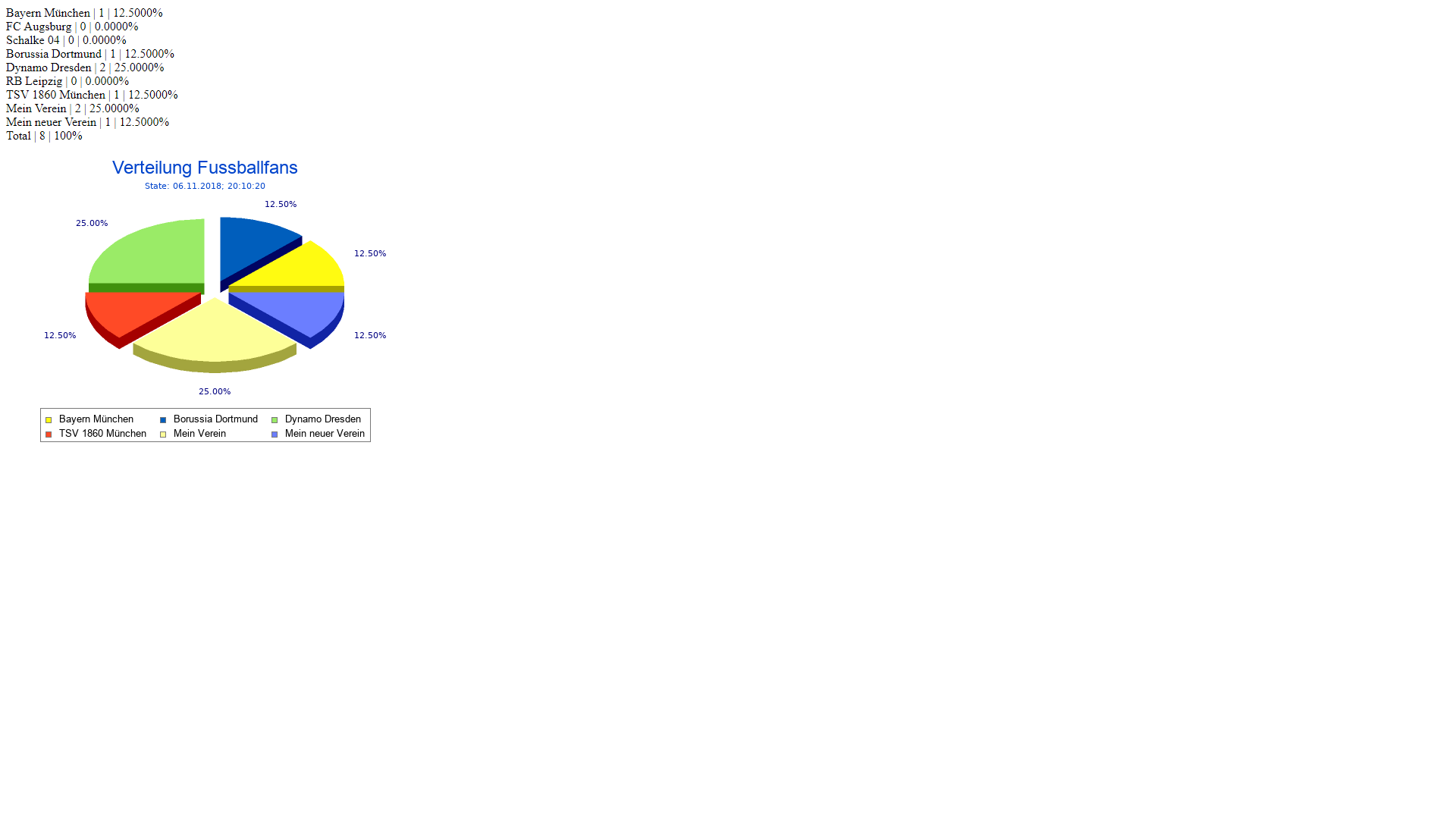


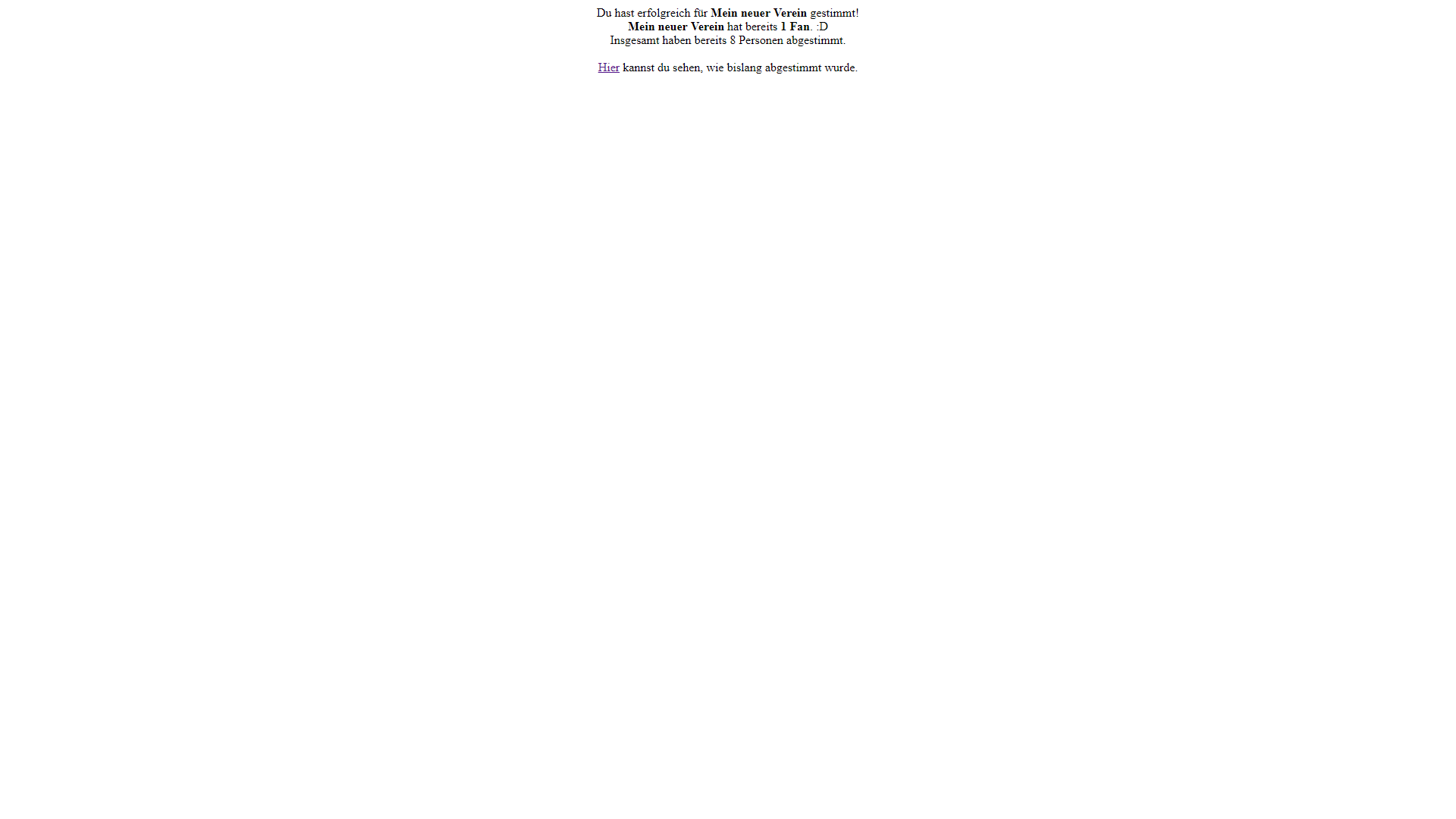
Natürlich darf keine Fehlerbehandlung fehlen, diese kann hier aber sehr einfach sein.  
Wenn ein neuer Verein hinzugefügt wird prüfen wir, ob es diesen bereits gibt, die Groß- und Kleinschreibung wird hierbei ignoriert.



Zusätzlich haben wir noch mit Prepared Statements gearbeitet, da wir User-Input in eine Datenbank-Anfrage setzen und dies immer potentiell gefährlich sein kann.

Auch haben wir mittels JavaScript und Hidden-Fields das Formular vor Manipulation geschützt (JavaScript setzt beim Absenden einen Prüfwert in das Hidden-Field).

Nach dem Absenden erhält der User ein Feedback und kann das Gesamtergebnis einsehen.



### SQL-Statements

Um für die Startseite die aktuellen Fußballvereine zu erhalten:

SELECT club\_id, club\_name FROM football\_clubs;

Abfrage, ob es den Verein mit der gegebenen ID und dem gegeben Namen (≙ Prüfwert) gibt:

SELECT 1 FROM football\_clubs WHERE club\_id = ? AND club\_name = ?;

Abfrage bei einem neuen Vereinsnamen, ob es diesen bereits gibt:

SELECT 1 FROM football\_clubs WHERE club\_name = ?;

Neuen Verein hinzufügen:

INSERT INTO football\_clubs (club\_name, club\_votes) VALUES (?, 1);

Abfrage, wie viele Teilnehmer an der Umfrage teilgenommen haben:

SELECT SUM(`club\_votes`) as fans FROM football\_clubs;

Existierenden Verein aktualisieren:

UPDATE football\_clubs

SET club\_votes = club\_votes + 1 WHERE club\_id = ?;

Aktuellen Zustand der Datenbank (Vereine, Abstimmungen, Teilnehmer) erhalten:

SELECT \*, (SELECT SUM(`club\_votes`) FROM football\_clubs) as fans

FROM football\_clubs WHERE `club\_id` = ?;

Aktuelle Ergebnisse (Vereine, Abstimmungen, prozentuale Verteilung, Teilnehmer) erhalten:

SELECT \*, CONCAT(

(CASE WHEN

(SELECT SUM(`club\_votes`) FROM football\_clubs) = 0

/\* in case there are no votes \*/

THEN

0

ELSE

club\_votes \* 100 / (SELECT SUM(`club\_votes`) FROM football\_clubs)

END), '%') as percent,

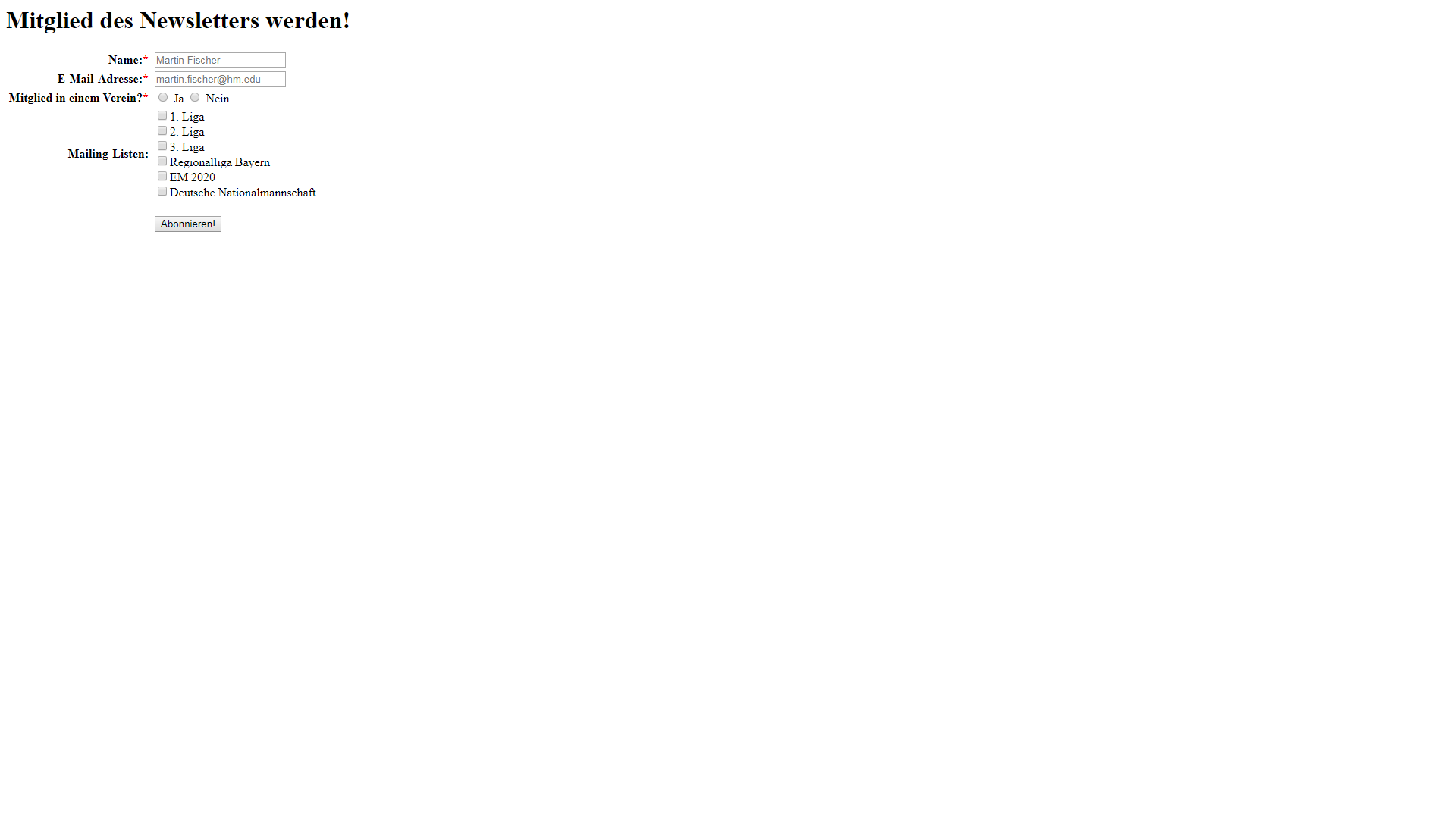
(SELECT SUM(`club\_votes`) FROM football\_clubs) as fans

FROM football\_clubs;

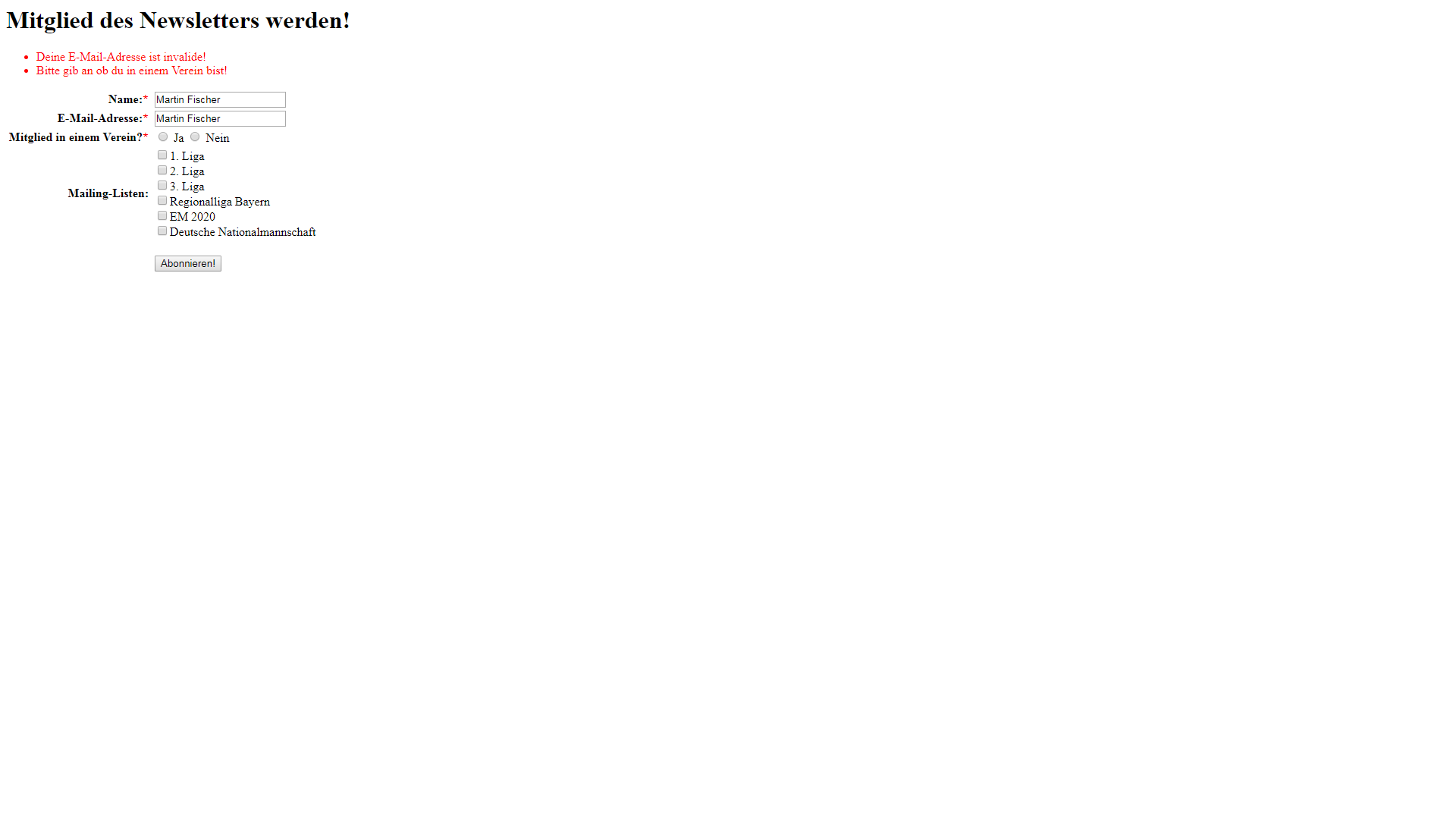
## Teil B

Im zweiten Teil der Übung sollten wir einen Mailverteiler für den DFB programmieren.

Ein Nutzer kann sich hier mit Namen, E-Mail und ggf. einer Mitgliedschaft in einem Verein in den Mailverteiler eintragen. Dabei kann der Nutzer sich auch selbst noch in verschiedene Mailing-Listen eintragen (bspw. 1. Liga, EM 2020, Regionalliga Bayern, etc.).

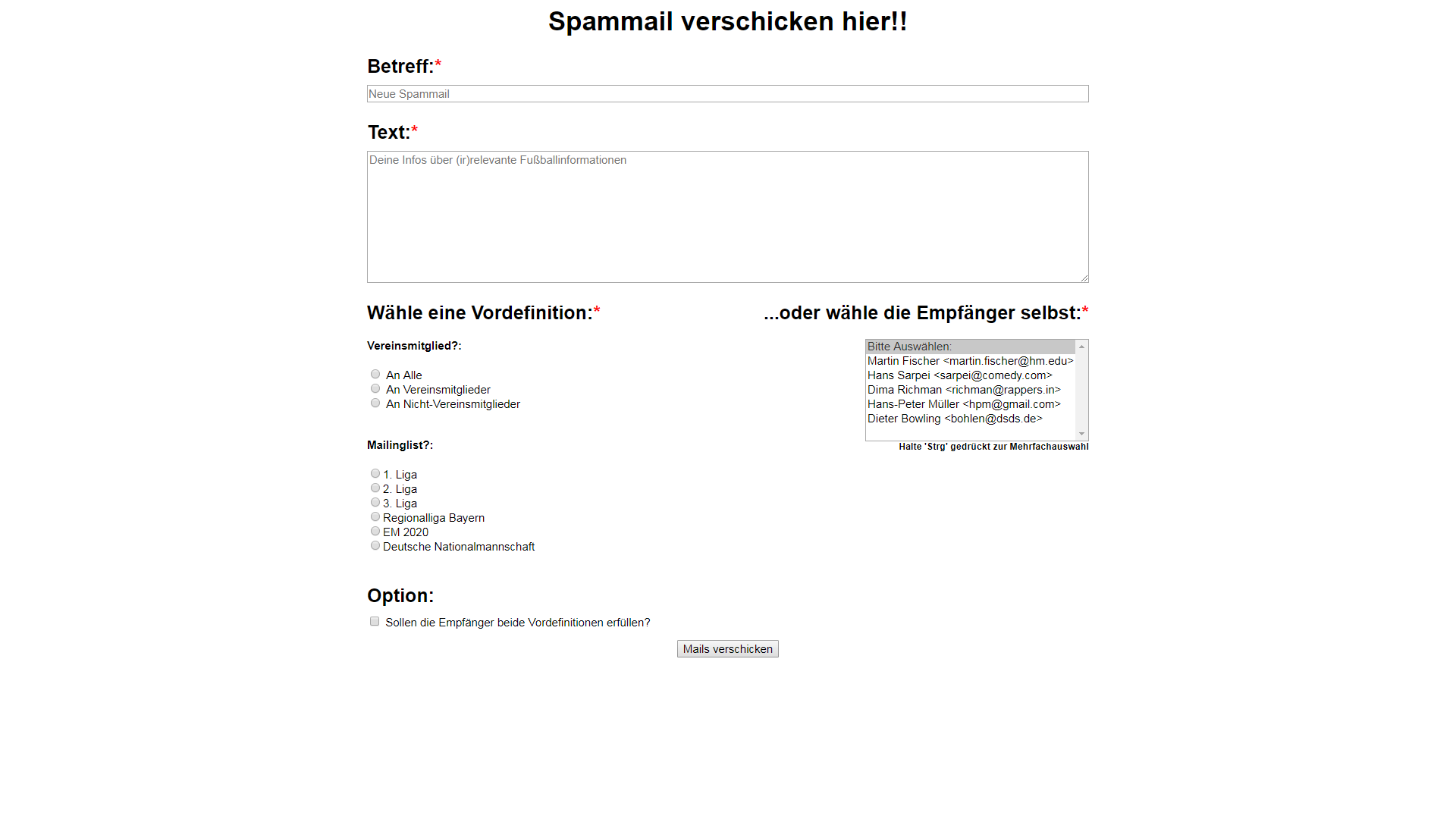
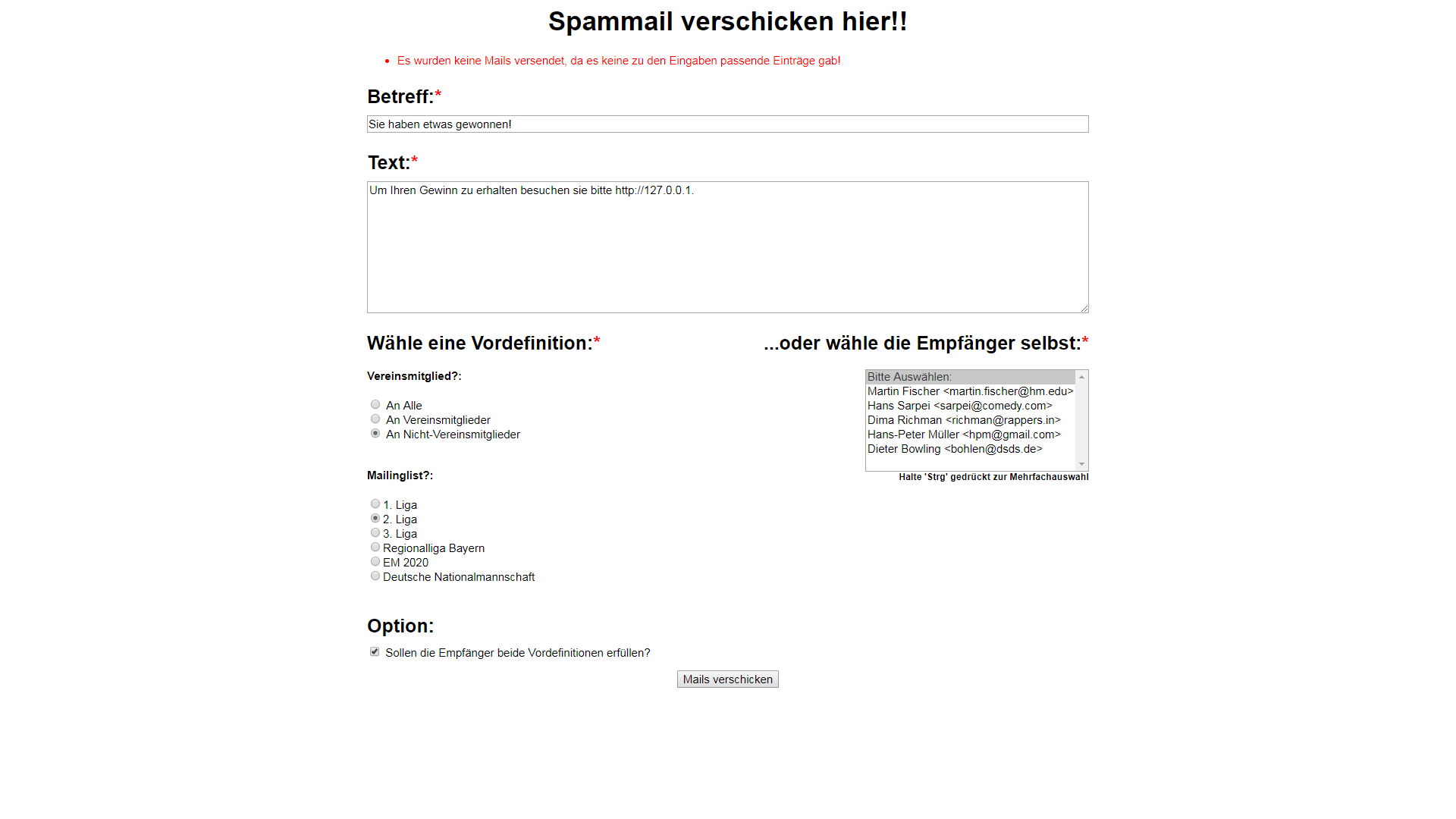
Auch hierfür haben wir eine kleine Fehlerbehandlung für vergessene Felder implementiert.



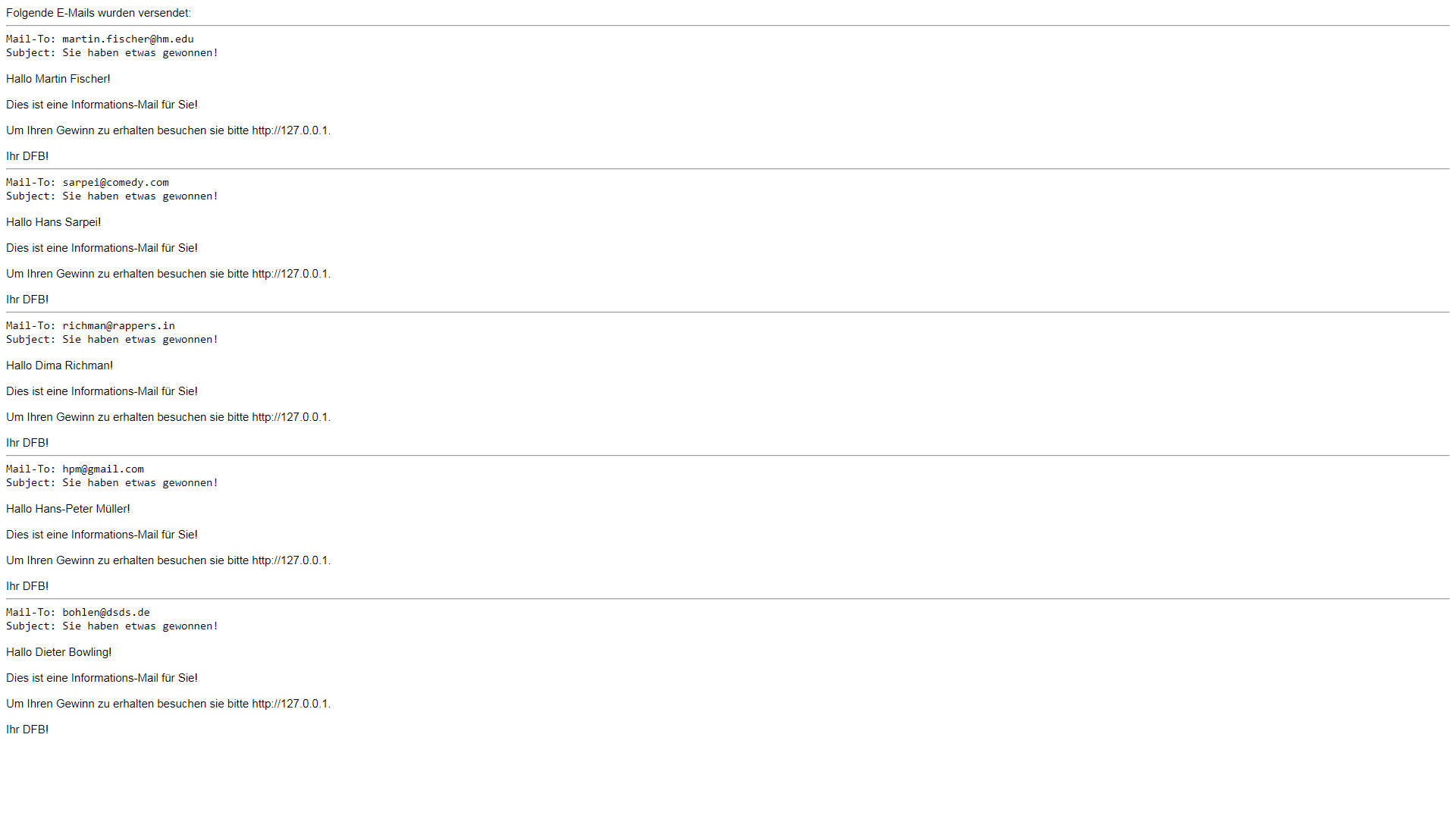
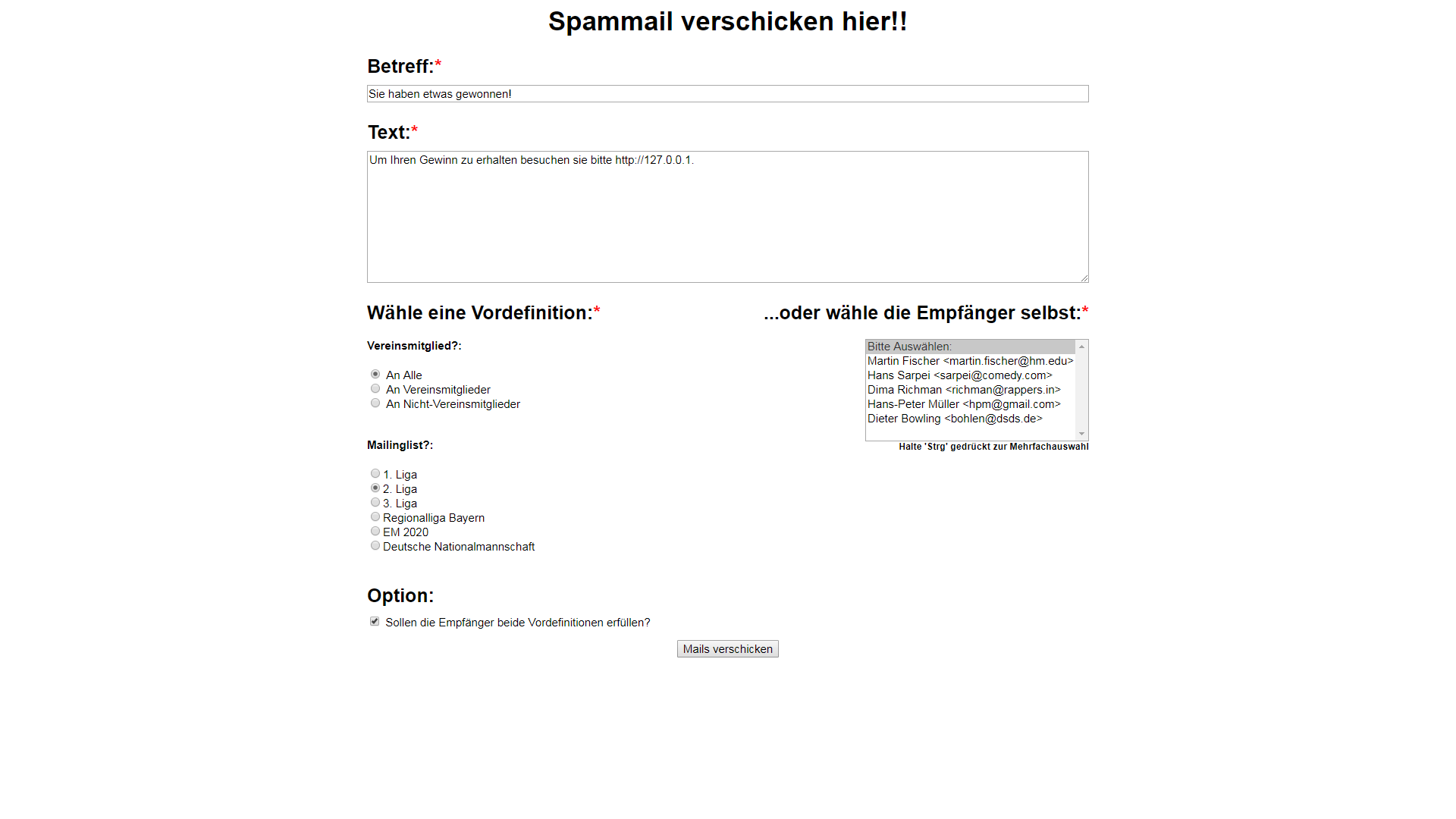
Nach der erfolgreichen Registration bekommt der Nutzer  
ein kleines Feedback, dass alles geklappt hat.

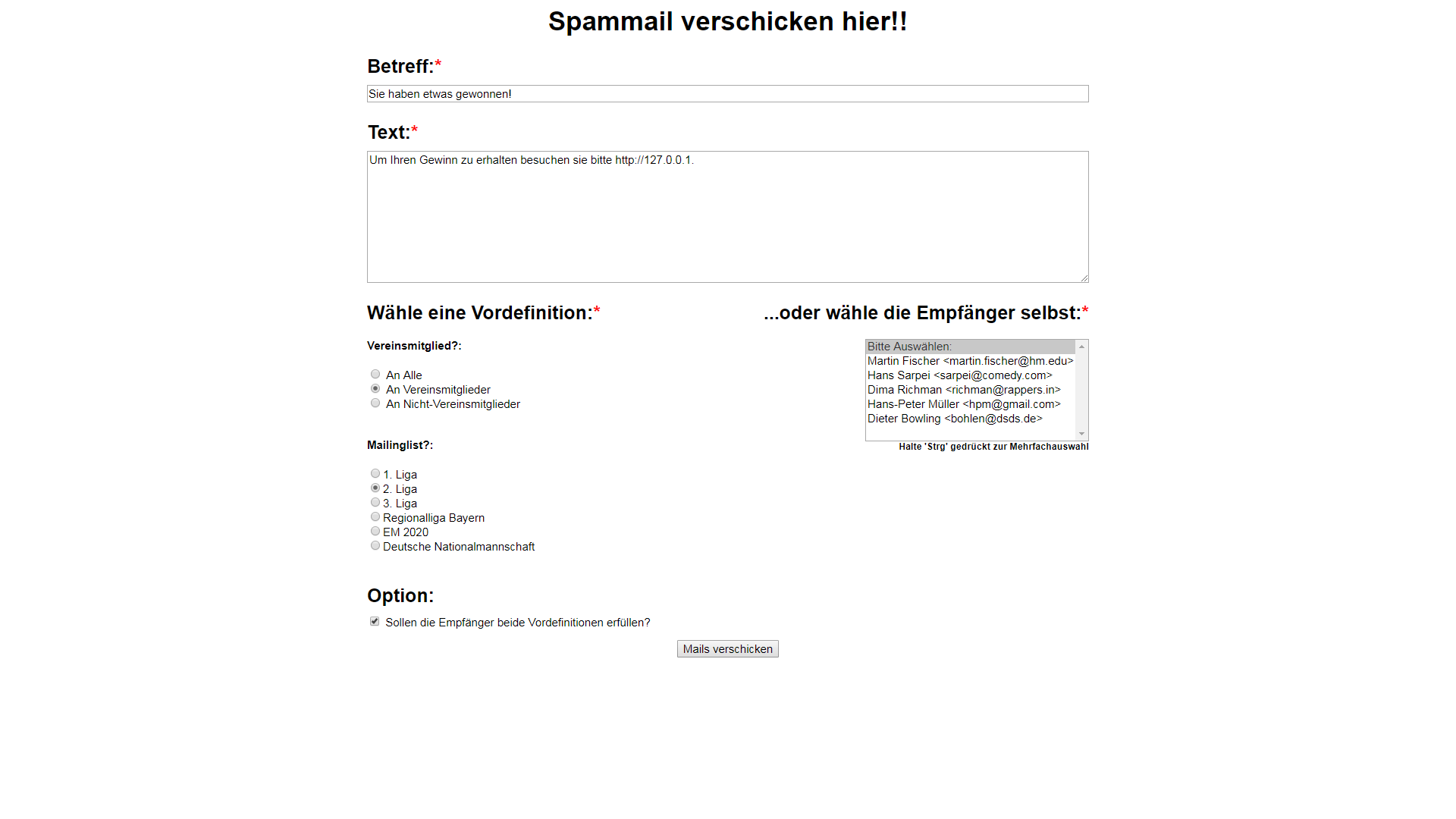
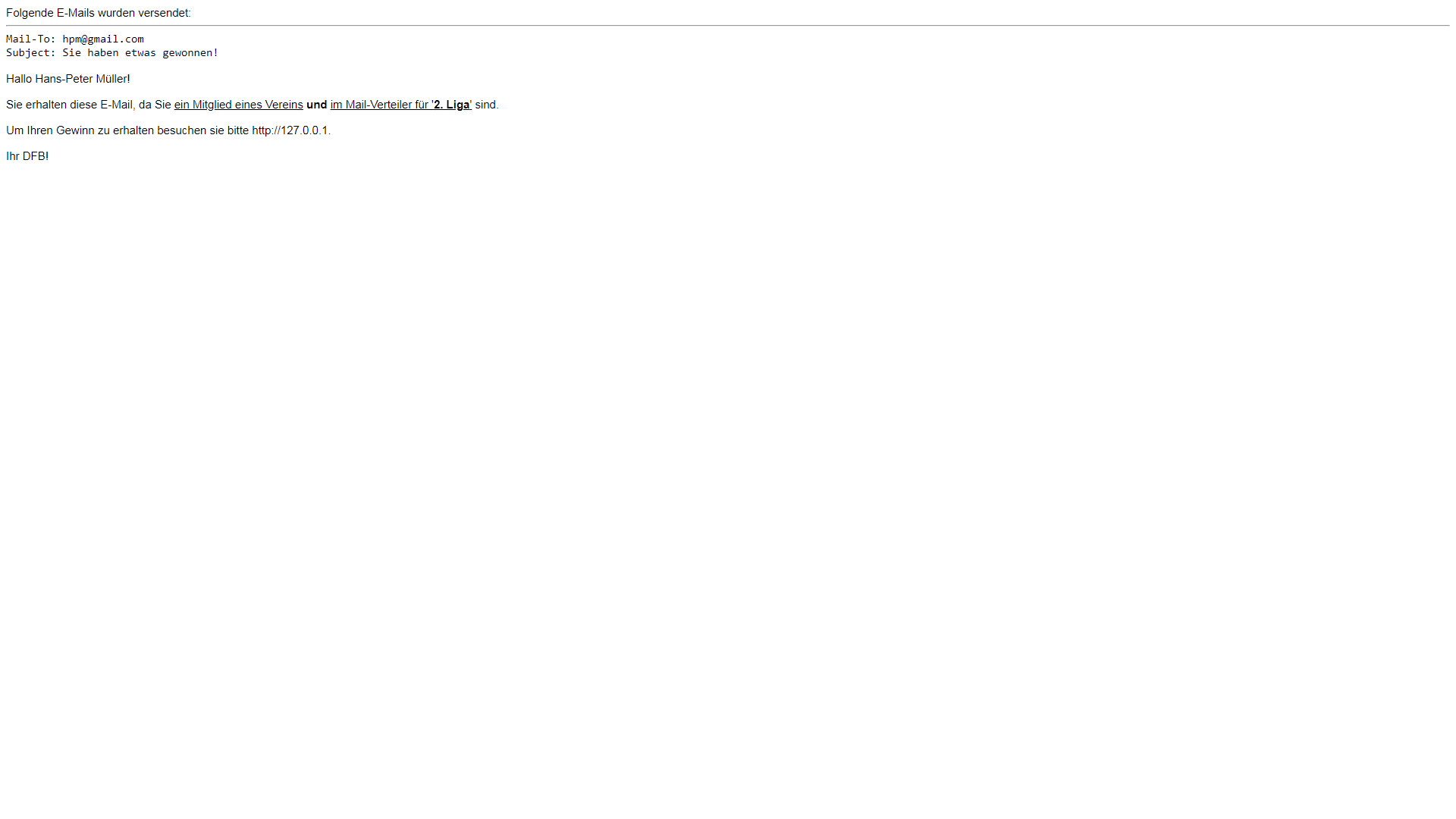
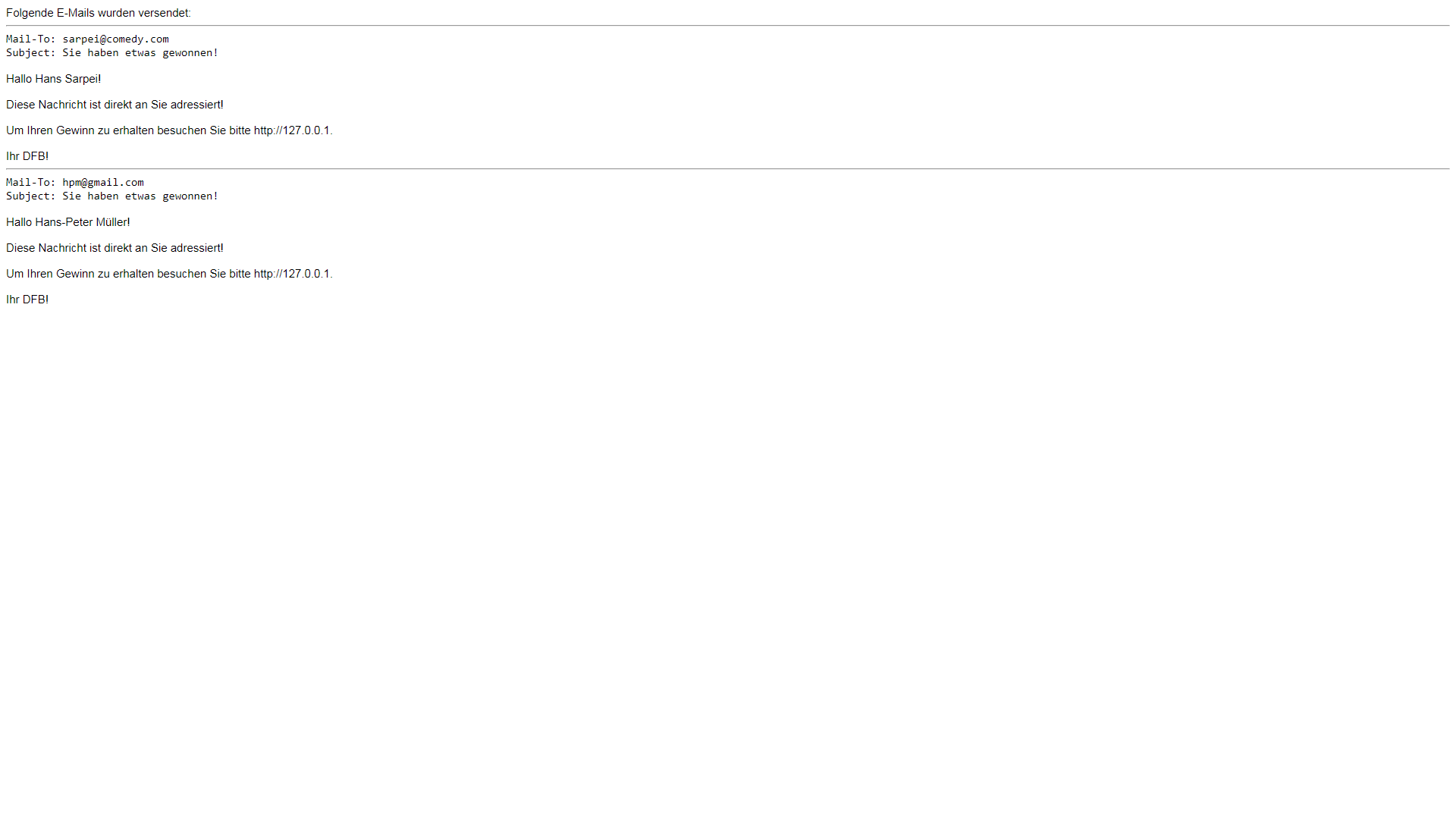
Nun fehlte nur noch eine Oberfläche, mit der sich bequem E-Mails versenden lassen konnten.

Und wie auch zuvor haben wir hierfür eine bequeme Fehlerbehandlung implementiert und auch – wie auch zuvor – darauf geachtet, dass beim Abschicken der alte Input erhalten bleibt. Nach dem korrekten Ausfüllen der Maske wird der Versender darüber informiert, an wen alles E-Mails verschickt wurden und wie die E-Mail am Ende aussah. Hat es bei der Vordefintion keine Treffer gegeben, so wird der Versender darüber informiert.



Hier ein paar Beispiele, wie bei welcher Eingabe welche E-Mail generiert wird:





### Hardgecodete SQL-Statements

Um für die Startseite die Mailing-Listen zu erhalten:

SELECT mailinglist\_id, mailinglist\_name FROM mailinglists;

Um zu prüfen, ob die eingegebene E-Mail-Adresse bereits in unserer Datenbank ist:

SELECT 1 FROM newsletter\_members WHERE person\_mail = ?;

Um einen neuen Nutzer zur Datenbank hinzuzufügen:

INSERT INTO `newsletter\_members`

(`person\_name`, `person\_mail`, `club\_member`) VALUES (?, ?, ?);

Um die Mailing-Listen für den Nutzer zu speichern:

INSERT INTO `newsletter\_mailing\_mapping`

(`person\_id`, `mailinglist\_id`) VALUES (?, ?);

Um den Namen der Mailing-Liste über die ID aus dem Formular zu erhalten:

SELECT l.mailinglist\_name FROM `mailinglists` l

WHERE l.mailinglist\_id = $mailing; /\* variable with list id \*/

### Generierte SQL-Statements

Um die korrekten E-Mail-Adressen und Namen zu erhalten, bauen wir diese dynamisch in unserem Script zusammen, es folgen einige mögliche Variationen:

- Alle Nutzer aus der Datenbank holen:

SELECT p.person\_name, p.person\_mail FROM `mailinglists` as l, `newsletter\_members` as p LEFT JOIN `newsletter\_mailing\_mapping` m ON p.person\_id = m.person\_id WHERE (l.mailinglist\_id = m.mailinglist\_id OR m.mailinglist\_id IS NULL) GROUP BY p.person\_id ORDER BY p.person\_id;

- Alle Nutzer aus der Datenbank holen, die **in einem Fußballverein** sind:

SELECT p.person\_name, p.person\_mail FROM `mailinglists` as l, `newsletter\_members` as p LEFT JOIN `newsletter\_mailing\_mapping` m ON p.person\_id = m.person\_id WHERE (l.mailinglist\_id = m.mailinglist\_id OR m.mailinglist\_id IS NULL) AND p.club\_member = **'true'** GROUP BY p.person\_id ORDER BY p.person\_id;

- Alle Nutzer aus der Datenbank holen, die **in der Mailing-Liste x** sind:

SELECT \* FROM `mailinglists` as l, `newsletter\_members` as p LEFT JOIN `newsletter\_mailing\_mapping` m ON p.person\_id = m.person\_id WHERE (l.mailinglist\_id = m.mailinglist\_id OR m.mailinglist\_id IS NULL) AND (l.mailinglist\_id = **x** AND m.mailinglist\_id IS NOT NULL GROUP BY p.person\_id ORDER BY p.person\_id;

- Alle Nutzer, die **in einem Fußballverein UND in der Mailing-Liste x** sind:

SELECT p.person\_name, p.person\_mail FROM `mailinglists` as l, `newsletter\_members` as p LEFT JOIN `newsletter\_mailing\_mapping` m ON p.person\_id = m.person\_id WHERE (l.mailinglist\_id = m.mailinglist\_id OR m.mailinglist\_id IS NULL) AND ( p.club\_member = **'true'** **AND** (l.mailinglist\_id = **x** AND m.mailinglist\_id IS NOT NULL) ) GROUP BY p.person\_id ORDER BY p.person\_id;

- Nutzer mit der ID 1, 3 oder 5 aus der Datenbank holen

SELECT p.person\_name, p.person\_mail FROM `mailinglists` as l, `newsletter\_members` as p LEFT JOIN `newsletter\_mailing\_mapping` m ON p.person\_id = m.person\_id WHERE (l.mailinglist\_id = m.mailinglist\_id OR m.mailinglist\_id IS NULL) AND (**p.person\_id = 1 OR p.person\_id = 3 OR p.person\_id = 5**) GROUP BY p.person\_id ORDER BY p.person\_id;

# Quellcode

**Den Quellcode für unser Projekt finden Sie zusätzlich auf** [**GitHub**](https://github.com/AnyaW/dbs2/)**.**

*dbConnect.php* - Unsere Utils-Datei zum Erstellen der Datenbank/Tabellen und Initialisieren:

<?php

if (!function\_exists('check\_db')) {

// Check if the given database exists, if not try to create it.

function check\_db($connection, $database) {

// mysqli\_select\_db will return false if database does not exist

$db = mysqli\_select\_db($connection, $database);

if (!$db) {

$sql\_create = 'CREATE DATABASE ' . $database;

$was\_created = mysqli\_query($connection, $sql\_create);

if ($was\_created) {

return $database;

}

return false;

}

return $database;

}

}

if (!function\_exists('open\_connection')) {

function open\_connection($servername, $username, $password, $database) {

$con = mysqli\_connect($servername, $username, $password);

if (!$con) {

die("Connection failed: " . mysqli\_connect\_error());

}

$newDB = check\_db($con, $database);

if (!$newDB) {

die("An Error occurred while creating the database " . $database . ": " . mysqli\_error($con));

}

// Select the DB which exists as of now

mysqli\_select\_db($con, $newDB);

// Init all Tables

init\_tables($con);

return $con;

}

}

if (!function\_exists('check\_table')) {

function check\_table($connection, $table\_name) {

$sql\_table\_exits = "SELECT 1 FROM " . $table\_name . " LIMIT 1;";

$table\_exits = mysqli\_query($connection, $sql\_table\_exits);

return ($table\_exits != false ? true : false);

}

}

if (!function\_exists('init\_tables')) {

function init\_tables($connection) {

// 1A

init\_football($connection);

// 1B

init\_newsletter\_members($connection);

init\_mailinglist($connection);

init\_newsletter\_mailing\_mapping($connection);

}

}

if (!function\_exists('init\_football')) {

function init\_football($connection) {

$table\_name = "football\_clubs";

$table\_exits = check\_table($connection, $table\_name);

// We know about IF NOT EXISTS, we don't want to add the initial data again

if (!$table\_exits) {

// Lock Database

mysqli\_autocommit($connection, false);

//mysqli\_begin\_transaction($con);

$football\_table = "CREATE TABLE `". $table\_name ."` (

`club\_id` int(11) NOT NULL AUTO\_INCREMENT PRIMARY KEY,

`club\_name` varchar(64) COLLATE utf8\_german2\_ci NOT NULL,

`club\_votes` int(11) NOT NULL DEFAULT '0'

) ENGINE=InnoDB DEFAULT CHARSET=utf8 COLLATE=utf8\_german2\_ci;";

if (!mysqli\_query($connection, $football\_table)) {

die("An Error occurred while creating the Football Table. Error: '" . mysqli\_error($connection) . "'");

}

// If Strings are not displayed correctly, open my.ini for mysql and uncomment all UTF8 config lines

$football\_insert = "INSERT INTO `". $table\_name ."` (`club\_name`) VALUES

('Bayern München'), ('FC Augsburg'), ('Schalke 04'), ('Borussia Dortmund'),

('Dynamo Dresden'), ('RB Leipzig'), ('TSV 1860 München');";

if (!mysqli\_query($connection, $football\_insert)) {

die("An Error occurred while inserting Data into the Football Table. Error: '" . mysqli\_error($connection) . "'");

}

// Commit

mysqli\_commit($connection);

}

return true;

}

}

if (!function\_exists('init\_newsletter\_members')) {

function init\_newsletter\_members($connection) {

$table\_name = "newsletter\_members";

$table\_exits = check\_table($connection, $table\_name);

// We know about IF NOT EXISTS but we don't want to add the initial data too often

if (!$table\_exits) {

$newsletter\_table = "CREATE TABLE `". $table\_name ."` (

`person\_id` INT NOT NULL AUTO\_INCREMENT PRIMARY KEY,

`person\_name` VARCHAR(64) NOT NULL,

`person\_mail` VARCHAR(64) NOT NULL,

`club\_member` ENUM('false', 'true') NOT NULL DEFAULT 'false'

) ENGINE = InnoDB CHARSET=utf8 COLLATE utf8\_german2\_ci;";

if (!mysqli\_query($connection, $newsletter\_table)) {

die("An Error occurred while creating the Newsletter Table. Error: '" . mysqli\_error($connection) . "'");

}

}

return true;

}

}

if (!function\_exists('init\_mailinglist')) {

function init\_mailinglist($connection) {

$table\_name = "mailinglists";

$table\_exits = check\_table($connection, $table\_name);

// We know about IF NOT EXISTS, we don't want to add the initial data again

if (!$table\_exits) {

// Lock Database

mysqli\_autocommit($connection, false);

//mysqli\_begin\_transaction($con);

$mailinglist\_table = "CREATE TABLE `". $table\_name ."` (

`mailinglist\_id` INT NOT NULL AUTO\_INCREMENT PRIMARY KEY,

`mailinglist\_name` VARCHAR(32) NOT NULL

) ENGINE = InnoDB CHARSET=utf8 COLLATE utf8\_german2\_ci;";

if (!mysqli\_query($connection, $mailinglist\_table)) {

die("An Error occurred while creating the Mailinglist Table. Error: '" . mysqli\_error($connection) . "'");

}

// If Strings are not displayed correctly, open my.ini for mysql and uncomment all UTF8 config lines

$maillinglist\_insert = "INSERT INTO `". $table\_name ."` (`mailinglist\_name`) VALUES

('1. Liga'), ('2. Liga'), ('3. Liga'), ('Regionalliga Bayern'),

('EM 2020'), ('Deutsche Nationalmannschaft');";

if (!mysqli\_query($connection, $maillinglist\_insert)) {

die("An Error occurred while inserting Data into the Mailinglist Table. Error: '" . mysqli\_error($connection) . "'");

}

// Commit

mysqli\_commit($connection);

}

return true;

}

}

if (!function\_exists('init\_newsletter\_mailing\_mapping')) {

function init\_newsletter\_mailing\_mapping($connection) {

$table\_name = "newsletter\_mailing\_mapping";

$table\_exits = check\_table($connection, $table\_name);

// We know about IF NOT EXISTS but we don't want to add the initial data too often

if (!$table\_exits) {

$newsletter\_table = "CREATE TABLE `". $table\_name ."` (

`person\_id` int(11) NOT NULL,

`mailinglist\_id` int(11) NOT NULL,

PRIMARY KEY (`person\_id`, `mailinglist\_id`)

) ENGINE=InnoDB DEFAULT CHARSET=utf8 COLLATE=utf8\_german2\_ci;";

if (!mysqli\_query($connection, $newsletter\_table)) {

die("An Error occurred while creating the Newsletter-Mailinglist-Mapping Table. Error: '" . mysqli\_error($connection) . "'");

}

}

return true;

}

}

?>

*dbCredentials.php* – Datei mit Login-Informationen:

<?php

$servername = "localhost";

$username = "dbs2";

$password = "test123$";

$database = "dbs2";

?>

## A/index.php – Startseite für die Fußballabstimmung:

<?php

require\_once("../functions/dbCredentials.php"); // created variables to login

require\_once("../functions/dbConnect.php");

$con = open\_connection($servername, $username, $password, $database);

$result = mysqli\_query($con, "SELECT club\_id, club\_name FROM football\_clubs");

if (!$result) {

die("An Error occurred while getting the Football Teams. Error: '" . mysqli\_error($con) . "'");

}

$output = "";

while ($row = mysqli\_fetch\_assoc($result)) {

$id = $row['club\_id'];

$name = $row['club\_name'];

$output .= "\t\t\t<option value='$id'>$name</option>\n";

}

mysqli\_free\_result($result);

mysqli\_close($con);

// Error Handling

$error = "";

if (isset($\_GET['error'])) {

$error = $\_GET['error'];

}

?>

<html>

<head>

<title>Fussballfans</title>

<meta charset="UTF-8"></meta>

<style>

h1{

font-family: Arial;

font-size: 50px;

text-align: center;

color: #228B22;

}

h3 {

font-family: Arial;

font-size: 30px;

text-align: center;

color: #228B22;

}

body, option, input {

font-family: Arial;

font-size: 20px;

}

body {

text-align: center;

}

.button {

font-family: Arial;

font-size: 30px;

text-align: center;

height:50px;

width:120px;

border: none;

border-radius: 12px;

color: white;

background-color: #4CAF50;

transition-duration: 0.4s;

cursor: pointer;

}

.buttonVote {

background-color: white;

color: black;

border: 2px solid #4CAF50;

}

.buttonVote:hover {

background-color: #4CAF50;

color: white;

}

div#error {

background-color: #d25656;

margin-bottom: 10px;

}

</style>

</head>

<body>

<a href="./" style="text-decoration: none;"><h1>Wähle deinen Lieblingsverein!</h1></a>

<div id="error"><?php echo $error; ?></div>

<form action="validateClub.php" method="POST">

<input type="hidden" name="check" value="" />

<select name="club" id="clubs" size=7 onchange="checkCustom()">

<?php

echo $output;

?>

<option value='other'>Other</option>

</select>

<div id="custom" style="display: none;">

<h3>Sag uns deinen Verein:</h3>

<input type="text" name="newClub" maxlength=64 placeholder="Dein Verein">

</div>

<br><br>

<input class="button buttonVote" type="submit" value ="Vote!" name="vote" size=20 onclick="verifyInput()" />

</form>

Die aktuellen Ergebnisse kannst du dir <a href="results.php" target="\_blank">hier</a> ansehen.

<script type="text/javascript">

function checkCustom() {

var x = document.getElementById("clubs").value;

if (x == "other") {

document.getElementById("custom").style.display="block";

} else {

document.getElementById("custom").style.display="none";

}

}

function verifyInput() {

var check = document.getElementsByName("check")[0];

if (check != null) {

var club = document.getElementsByName("club")[0];

if (club != null) {

var optionIndex = club.selectedIndex;

if (optionIndex != -1) {

var clubName = club.options[optionIndex].text;

check.value = clubName;

console.log(check);

}

}

}

}

</script>

</body>

</html>

*A/validateClub.php* – Validierungsdatei für das Formular auf der Startseite:

<?php

require\_once("../functions/dbCredentials.php"); // created variables to login

require\_once("../functions/dbConnect.php");

// Return Error to previous Page

if (!function\_exists('returnError')) {

function returnError($err) {

die(header('Location: ./?error='.$err));

}

}

if (isset($\_COOKIE['club\_vote'])) {

returnError("Du hast bereits an der Umfrage teilgenommen!");

}

if (!isset($\_POST['club'])) {

header('Location: ./');

exit;

}

$con = open\_connection($servername, $username, $password, $database);

$table = "football\_clubs";

if (!isset($\_POST['check'])) {

returnError("Not Valid Input!");

}

$check = $\_POST['check'];

$club\_id = $\_POST['club'];

$other = ($club\_id == "other"? true : false);

// Lock Database

mysqli\_autocommit($con, false);

//mysqli\_begin\_transaction($con);

// Deactivated JavaScript would lead that $check won't be changed on submit

// Check if valid

if (preg\_match("/^[0-9]+$/", $club\_id) && empty($check)) {

$sql = "SELECT 1 FROM $table WHERE club\_id = ?";

$stmt = mysqli\_prepare($con, $sql);

mysqli\_stmt\_bind\_param($stmt, 'i', $club\_id);

} else {

$sql = "SELECT 1 FROM $table WHERE club\_id = ? AND club\_name = ?";

$stmt = mysqli\_prepare($con, $sql);

mysqli\_stmt\_bind\_param($stmt, 'is', $club\_id, $check);

}

mysqli\_stmt\_execute($stmt);

mysqli\_stmt\_store\_result($stmt);

$results = mysqli\_stmt\_num\_rows($stmt);

mysqli\_stmt\_close($stmt);

if ($other && empty($\_POST['newClub'])) {

returnError("Bitte gib deinen neuen Verein ein!");

}

// No Match

if ($results == 0 && !$other) {

returnError("Not Valid Input!");

}

// New suggestion

if ($other) {

$suggestion = $\_POST['newClub'];

// Already exists?

$sql = "SELECT 1 FROM $table WHERE club\_name = ?;";

$stmt = mysqli\_prepare($con, $sql);

mysqli\_stmt\_bind\_param($stmt, 's', $suggestion);

mysqli\_stmt\_execute($stmt);

mysqli\_stmt\_store\_result($stmt);

$results = mysqli\_stmt\_num\_rows($stmt);

mysqli\_stmt\_close($stmt);

if ($results != 0) {

returnError("Diesen Verein gibt es bereits, bitte in der Liste auswählen!");

}

// Insert

$sql = "INSERT INTO `$table` (`club\_name`, `club\_votes`) VALUES (?, 1)";

$stmt = mysqli\_prepare($con, $sql);

mysqli\_stmt\_bind\_param($stmt, 's', $suggestion);

mysqli\_stmt\_execute($stmt);

mysqli\_stmt\_store\_result($stmt);

$insert\_id = mysqli\_stmt\_insert\_id($stmt);

mysqli\_stmt\_close($stmt);

if ($insert\_id == 0) {

returnError("Unknown Error while Inserting Custom Club '$suggestion'!");

}

// Set output values

$club\_name = $suggestion;

$club\_votes = 1;

$sql = "SELECT SUM(`club\_votes`) as fans FROM $table;";

$sql\_result = mysqli\_query($con, $sql);

if (!$sql\_result) {

returnError("An Error occurred while getting the total amount of fans. Error: '" . mysqli\_error($con) . "'");

}

$row = mysqli\_fetch\_assoc($sql\_result);

$fans = $row['fans'];

} else {

$sql = "UPDATE $table SET club\_votes = club\_votes + 1 WHERE club\_id = ?;";

$stmt = mysqli\_prepare($con, $sql);

if (!$stmt) {

returnError("An Error occurred while updating the Football Table. Error: '" . mysqli\_error($con) . "'");

}

mysqli\_stmt\_bind\_param($stmt, 'i', $club\_id);

mysqli\_stmt\_execute($stmt);

mysqli\_stmt\_close($stmt);

$sql = "SELECT \*, (SELECT SUM(`club\_votes`) FROM $table) as fans FROM $table WHERE `club\_id` = ?;";

$stmt = mysqli\_prepare($con, $sql);

if (!$stmt) {

returnError("An Error occurred while evaluating the response. Error: '" . mysqli\_error($con) . "'");

}

mysqli\_stmt\_bind\_param($stmt, "i", $club\_id);

mysqli\_stmt\_execute($stmt);

mysqli\_stmt\_bind\_result($stmt, $club\_id, $club\_name, $club\_votes, $fans);

mysqli\_stmt\_fetch($stmt);

mysqli\_stmt\_close($stmt);

}

// Commit

mysqli\_commit($con);

// Unlock Database

mysqli\_close($con);

setcookie("club\_vote", "Done", time()+60\*60\*24\*(3\*365 + 366));

$out = "<center>Du hast erfolgreich für <b>$club\_name</b> gestimmt!<br>

<b>$club\_name</b> hat bereits <b>$club\_votes Fan".($club\_votes == 1 ? "" : "s")."</b>. :D<br>

Insgesamt ".($fans != 1 ? "haben bereits $fans Personen" : "hat bereits eine Person")." abgestimmt.<br /><br />

<a href='results.php'>Hier</a> kannst du sehen, wie bislang abgestimmt wurde.</center>";

?>

<html>

<head>

<meta charset="UTF-8">

<title>Erfolgreich abgestimmt!</title>

</head>

<body>

<?php echo $out; ?>

</body>

</html>

*A/results.php* – Datei zum Anzeigen der aktuellen Abstimmungsergebnisse:

<?php

header('Content-Type: text/html; charset=utf-8');

require\_once("../functions/dbCredentials.php"); // created variables to login

require\_once("../functions/dbConnect.php");

include("graph.php");

$removeNull = true;

$con = open\_connection($servername, $username, $password, $database);

$sql = "SELECT \*, CONCAT(

(CASE WHEN

(SELECT SUM(`club\_votes`) FROM football\_clubs) = 0

THEN

0

ELSE

club\_votes \* 100 / (SELECT SUM(`club\_votes`) FROM football\_clubs)

END), '%') as percent,

(SELECT SUM(`club\_votes`) FROM football\_clubs) as fans FROM football\_clubs;";

$result = mysqli\_query($con, $sql);

if (!$result) {

die("An Error occurred while getting the Football Teams. Error: '" . mysqli\_error($con) . "'");

}

$output = "";

$data = array(); // Votes

$legend = array(); // Names

while ($row = mysqli\_fetch\_assoc($result)) {

$name = $row['club\_name'];

$votes = $row['club\_votes'];

$percent = $row['percent'];

$fans = $row['fans'];

$output .= "\t\t$name | $votes | $percent<br />\n";

if ($votes != 0 || !$removeNull) {

array\_push($data, $votes);

array\_push($legend, $name);

}

}

$output .= "\t\tTotal | $fans | 100%<br />\n";

$filename = "fan-statistic.png";

if ($fans != 0) {

draw\_graph($data, $legend, $filename);

}

mysqli\_free\_result($result);

mysqli\_close($con);

?>

<html>

<head>

<title>Auswertung der Statistik | Fussballfans</title>

<meta charset="UTF-8" />

</head>

<body>

<?php

echo $output;

if ($fans != 0) {

echo '<br /><img src="'.$filename.'" />';

}

?>

</body>

</html>

*graph.php* – Datei zum Erstellen des Tortendiagramms:

<?php

if (!function\_exists('replaceUmlauts')) {

function replaceUmlauts($arr) {

$replacements = array(

'ä' => 'ae',

'ö' => 'oe',

'ü' => 'ue',

'ß' => 'ss'

);

foreach ($arr as $key => $value) {

foreach ($replacements as $umlaut => $replacement){

if (stristr($value, $umlaut)) {

$arr[$key] = str\_replace($umlaut, $replacement, $value);

}

}

}

return $arr;

}

}

if (!function\_exists('draw\_graph')) {

function draw\_graph($data, $legends, $filename) {

date\_default\_timezone\_set("Europe/Berlin");

require\_once('jpgraph/jpgraph.php');

require\_once('jpgraph/jpgraph\_pie.php');

require\_once('jpgraph/jpgraph\_pie3d.php');

$legendCols = 3; // 3 Legend Entries in a Row

$lines = ceil(sizeof($data) / $legendCols);

$lineHeight = 20; // 20px per Line of Legends

// Create the Pie Graph.

$graph = new PieGraph(525, 340 + $lines \* $lineHeight);

// Theme

$theme\_class = new VividTheme;

$graph->SetTheme($theme\_class);

// Set A title for the plot

$graph->title->Set("Verteilung Fussballfans");

$graph->title->SetFont(FF\_ARIAL, FS\_NORMAL, 18);

$graph->subtitle->Set("Stand: ".date("d.m.Y; H:i:s"));

// Create

$p1 = new PiePlot3D($data);

$p1->value->SetFormat('%01.2f%%');

$p1->SetLabelPos(1.1);

//$p1->value->SetMargin(20);

$p1->SetCenter(275, 175);

$p1->SetSize(0.4);

//$legends = replaceUmlauts($legends); // In case there are problems

$p1->SetLegends($legends);

$p1->ShowBorder();

$p1->SetColor('black');

$p1->ExplodeAll();

$graph->Add($p1);

$graph->legend->SetFont(FF\_ARIAL);

$graph->legend->SetFrameWeight(1);

$graph->legend->SetPos(0.5, 0.99, 'center', 'bottom');

$graph->legend->SetColumns($legendCols);

$gdImgHandler = $graph->Stroke(\_IMG\_HANDLER);

$graph->img->Stream($filename);

}

}

?>

## B/index.php – Startseite zum Eintragen in den Newsletter:

<?php

require\_once("../functions/dbCredentials.php"); // created variables to login

require\_once("../functions/dbConnect.php");

$con = open\_connection($servername, $username, $password, $database);

$result = mysqli\_query($con, "SELECT mailinglist\_id, mailinglist\_name FROM mailinglists");

if (!$result) {

die("An Error occurred while getting the Mailinglists. Error: '" . mysqli\_error($con) . "'");

}

$output = "";

while ($row = mysqli\_fetch\_assoc($result)) {

$id = $row['mailinglist\_id'];

$name = $row['mailinglist\_name'];

$output .= "\t\t\t\t\t<input type='checkbox' name='mailing[]' id='$id' value='$id' ".(isset($\_POST['mailing']) && in\_array($id, $\_POST['mailing']) ? 'checked' : '')."><label for='$id'>$name</label><br />\n";

}

mysqli\_free\_result($result);

$success = false;

if (isset($\_POST['submit'])) {

$errors = [];

$name = $\_POST['name'];

if (empty($name)) {

$errors[] = "Bitte gib deinen Namen ein!";

}

$mail = $\_POST['mail'];

if (empty($mail)) {

$errors[] = "Bitte gib deine E-Mail-Adresse ein!";

}

elseif (!filter\_var($mail, FILTER\_VALIDATE\_EMAIL)) {

$errors[] = "Deine E-Mail-Adresse ist invalide!";

}

if (isset($\_POST['member'])){

$member = $\_POST['member'];

}

else {

$errors[] = "Bitte gib an ob du in einem Verein bist!";

}

if (empty($errors)){

$input = mysqli\_prepare($con, "SELECT 1 FROM newsletter\_members WHERE person\_mail = ?;");

if (!$input) {

die("An error occurred while inserting into the newsletter\_members table. Error: '" . mysqli\_error($con) . "'");

}

mysqli\_stmt\_bind\_param($input, 's', $mail);

mysqli\_stmt\_execute($input);

mysqli\_stmt\_store\_result($input);

$results = mysqli\_stmt\_num\_rows($input);

mysqli\_stmt\_close($input);

// Not in Table yet

if ($results == 0) {

$input = mysqli\_prepare($con, "INSERT INTO `newsletter\_members` (`person\_name`, `person\_mail`, `club\_member`) VALUES (?, ?, ?)");

if (!$input) {

die("An error occurred while inserting into the newsletter\_members table. Error: '" . mysqli\_error($con) . "'");

}

mysqli\_stmt\_bind\_param($input, 'sss', $name, $mail, $member);

mysqli\_stmt\_execute($input);

mysqli\_stmt\_store\_result($input);

$personId = mysqli\_stmt\_insert\_id($input);

mysqli\_stmt\_close($input);

if ($personId == 0){

die("An error occurred while inserting into the newsletter\_members table. Error: '" . mysqli\_error($con) . "'");

}

if (isset($\_POST['mailing'])) {

$listIDs = $\_POST['mailing'];

foreach($listIDs as $listId){

$input = mysqli\_prepare($con, "INSERT INTO `newsletter\_mailing\_mapping` (`person\_id`, `mailinglist\_id`) VALUES (?, ?)");

if (!$input) {

die("An error occurred while inserting into the mapping table. Error: '" . mysqli\_error($con) . "'");

}

mysqli\_stmt\_bind\_param($input, 'ii', $personId, $listId);

mysqli\_stmt\_execute($input);

mysqli\_stmt\_close($input);

}

}

$success = true;

//die("Du hast dich erfolgreich registriert!");

}

else {

$errors[] = "Diese E-Mail-Adresse ist bereits registriert";

}

}

}

mysqli\_close($con);

?>

<html>

<head>

<meta charset="UTF-8">

<title>Newsletter | DFB</title>

<style>

th {

text-align: right;

padding-right: 5px;

}

span#required, div#error {

color: #ff0000;

}

</style>

</head>

<body>

<h1>Mitglied des Newsletters werden!</h1>

<?php

if (isset($errors)){

echo "<div id='error'><ul>";

foreach($errors as $err){

echo "<li>".$err ."</li>";

}

echo "</ul></div>";

}

?>

<?php

if (!$success) { // Cheap Trick

?>

<form method="POST">

<table>

<tr>

<th><label for="name">Name:<span id="required">\*</span></label></th>

<td><input name="name" id="name" maxlength=64 placeholder="Martin Fischer" value="<?php echo(isset($\_POST['name']) ? $\_POST['name'] : ""); ?>"/></td>

</tr>

<tr>

<th><label for="mail">E-Mail-Adresse:<span id="required">\*</span></label></th>

<td><input name="mail" id="mail" maxlength=64 placeholder="martin.fischer@hm.edu" value="<?php echo(isset($\_POST['mail']) ? $\_POST['mail'] : ""); ?>"/></td>

</tr>

<tr>

<th>Mitglied in einem Verein?<span id="required">\*</span></th>

<td>

<input type="radio" id="yes" name="member" value="true" <?php echo(isset($\_POST['member']) && $\_POST['member'] == 'true' ? 'checked' : ''); ?>>

<label for="yes">Ja</label>

<input type="radio" id="no" name="member" value="false" <?php echo(isset($\_POST['member']) && $\_POST['member'] == 'false' ? 'checked' : ''); ?>>

<label for="no"> Nein</label><br />

</td>

</tr>

<tr>

<th>Mailing-Listen:</th>

<td>

<?php

echo $output;

?>

</td>

</tr>

<tr>

<td></td>

<td><br /><input name="submit" type="submit" value="Abonnieren!" /></td>

</tr>

</table>

</form>

<?php }

else{

echo "<h4>Du hast dich erfolgreich registriert!</h4>";

}

?>

</body>

</html>

*B/mailer.php* – Datei zum Versenden der E-Mails:

<?php

require\_once("../functions/dbCredentials.php"); // created variables to login

require\_once("../functions/dbConnect.php");

$con = open\_connection($servername, $username, $password, $database);

$success = false;

if (isset($\_POST['submit'])) {

$subject = $\_POST['subject'];

$body = $\_POST['body'];

$member = (isset($\_POST['member']) ? $\_POST['member'] : ''); // can be 'all', 'member' or 'nonMember' (or nothing if not set)

$recipients = (isset($\_POST['recipients']) ? $\_POST['recipients'] : array());

$mailing = (isset($\_POST['mailing']) ? $\_POST['mailing'] : ''); // mailinglist-id

$both = (isset($\_POST['both']) ? true : false); // option

$errors = [];

if (empty($subject)) {

$errors[] = "Bitte einen Betreff ein";

}

if (empty($body)) {

$errors[] = "Bitte gib deinen Mail-Text an";

}

if (empty($member) && empty($mailing) && (in\_array('select', $recipients) || empty($recipients))) {

$errors[] = "Bitte gib an, an wen du deine Mail senden willst";

}

if ((!empty($member) || !empty($mailing)) && !in\_array('select', $recipients)) {

$errors[] = "Du hast eine doppelte Auswahl getroffen!<br>

Deine Vordefinition wurde zurückgesetzt.<br>

Bitte wähle eine Vordefinition ODER wähle die Empfänger selbst!";

unset($\_POST['member']);

unset($\_POST['mailing']);

}

if (empty($errors)) {

$sql = "SELECT p.person\_name, p.person\_mail

FROM `mailinglists` as l, `newsletter\_members` as p

LEFT JOIN `newsletter\_mailing\_mapping` m ON p.person\_id = m.person\_id

WHERE (l.mailinglist\_id = m.mailinglist\_id OR m.mailinglist\_id IS NULL) /\* in case not in a mailing list \*/";

$reason = "Dies ist eine Informations-Mail für Sie!";

if (in\_array('select', $recipients)) {

if ($member != "all") {

$reason = ""; // reset to generate later

if (!empty($member)) {

$sql .= " AND";

if (!empty($mailing)) {

$sql .= " (";

}

$sql .= " p.club\_member = ".(($member == 'member') ? "'true'" : "'false'");

}

if (!empty($mailing)) {

$sql .= " ".($both || empty($member) ? "AND" : "OR")." (l.mailinglist\_id = $mailing AND m.mailinglist\_id IS NOT NULL /\* in case not in a mailing list \*/)";

if($member != "all" && !empty($member)){

$sql .= " )";

}

}

}

}

else {

$reason = "Diese Nachricht ist direkt an Sie adressiert!";

for ($c = 0; $c < sizeof($recipients); $c++) {

$id = $recipients[$c];

if ($c == 0) {

$sql .= " AND (p.person\_id = $id";

} else {

$sql .= " OR p.person\_id = $id";

}

if ($c == sizeof($recipients) - 1) { // not elseif, size(array) could be 1

$sql .= ")";

}

}

}

$sql .= " GROUP BY p.person\_id ORDER BY p.person\_id;";

//echo $sql;

$result = mysqli\_query($con, $sql);

if (!$result) {

die("An Error occurred while getting the Mailinglists. Error: '" . mysqli\_error($con) . "'");

}

$output = "\tFolgende E-Mails wurden versendet:";

if (mysqli\_num\_rows($result) == 0) {

$errors[] = "Es wurden keine Mails versendet, da es keine zu den Eingaben passende Einträge gab!";

} else {

if (!empty($mailing)) {

$tmp\_result = mysqli\_query($con, "SELECT l.mailinglist\_name FROM `mailinglists` l WHERE l.mailinglist\_id = $mailing");

$list = mysqli\_fetch\_assoc($tmp\_result)['mailinglist\_name'];

}

while ($row = mysqli\_fetch\_assoc($result)) {

$name = $row['person\_name'];

$mail = $row['person\_mail'];

if (empty($reason)) {

$reason = "Sie erhalten diese E-Mail, da Sie ".(!empty($member) ? "<u>".($member == 'nonMember' ? "k" : "")."ein Mitglied eines Vereins</u>" : "").(!empty($member) && !empty($mailing) ? " <b>".($both || empty($member) ? "und" : "oder")."</b> " : "").(!empty($mailing) ? "<u>im Mail-Verteiler für '<b>$list</b>'</u> sind" : " sind")."."; // easy String concatenation

}

$output .= "\t<hr /><code>Mail-To: $mail<br />Subject: $subject</code><br /><br />Hallo $name!<br /><br />$reason<br /><br />".nl2br($body)."<br /><br />Ihr DFB!\n";

}

$success = true;

}

}

}

if(!$success) {

$result = mysqli\_query($con, "SELECT mailinglist\_id, mailinglist\_name FROM mailinglists");

if (!$result) {

die("An Error occurred while getting the Mailinglists. Error: '" . mysqli\_error($con) . "'");

}

$list = "";

while ($row = mysqli\_fetch\_assoc($result)) {

$id = $row['mailinglist\_id'];

$name = $row['mailinglist\_name'];

$list .= "\t\t\t\t<input type='radio' name='mailing' id='$id' value='$id' ".(isset($\_POST['mailing']) && $\_POST['mailing'] == $id ? 'checked' : '')."><label for='$id'>$name</label><br />\n";

}

$result = mysqli\_query($con, "SELECT person\_id, person\_name, person\_mail FROM newsletter\_members");

if (!$result) {

die("An Error occurred while getting the newsletter\_members. Error: '" . mysqli\_error($con) . "'");

}

$people = "";

while ($row = mysqli\_fetch\_assoc($result)) {

$id = $row['person\_id'];

$name = $row['person\_name'];

$mail = $row['person\_mail'];

$people .= "\t\t\t<option value='$id' ".(isset($\_POST['recipients']) && in\_array($id, $\_POST['recipients']) ? 'selected' : '').">$name &lt;$mail&gt;</option>\n";

}

mysqli\_free\_result($result);

mysqli\_close($con);

}

?>

<html>

<head>

<meta charset="UTF-8">

<title><?php echo($success ? "Mails erfolgreich versendet! | " : ""); ?>Vereinsmailer | DFB</title>

<style>

h1{

text-align: center;

font-size: 35px;

}

h3{

font-size: 25px;

margin-bottom: 10px;

}

h5{

margin-top: 0px;

}

select{

margin-top: 10px;

}

th {

text-align: right;

padding-right: 5px;

}

span#required, div#error {

color: #ff0000;

}

body, option, select, input, textarea {

font-family: Arial;

font-size: 15px;

}

</style>

</head>

<body>

<?php

if (!$success) { // Cheap Trick

?>

<div style="margin-left: 25%; margin-right: 25%;">

<h1>Spammail verschicken hier!!</h1>

<?php

if (isset($errors)){

echo "<div id='error'><ul>";

foreach($errors as $err) {

echo "<li>".$err ."</li>";

}

echo "</ul></div>";

}

?>

<form method="POST">

<h3><label for="subject">Betreff:<span id="required">\*</span></label></h3>

<input id="subject" name="subject" style="width: 100%" value="<?php echo (isset($\_POST['subject'])? $\_POST['subject'] : ""); ?>" placeholder="Neue Spammail"></input>

<h3><label for="body">Text:<span id="required">\*</span></label></h3>

<textarea id="body" name="body" style="width: 100%; resize: vertical;" rows="10" placeholder="Deine Infos über (ir)relevante Fußballinformationen"><?php echo (isset($\_POST['body'])? $\_POST['body'] : ""); ?></textarea>

<div style="float: left">

<h3>Wähle eine Vordefinition:<span id="required">\*</span><br /></h3>

<h4>Vereinsmitglied?:</h4>

<input type="radio" id="all" name="member" value="all" <?php echo(isset($\_POST['member']) && $\_POST['member'] == 'all' ? 'checked' : ''); ?>>

<label for="all">An Alle</label><br />

<input type="radio" id="member" name="member" value="member" <?php echo(isset($\_POST['member']) && $\_POST['member'] == 'member' ? 'checked' : ''); ?>>

<label for="member">An Vereinsmitglieder</label><br />

<input type="radio" id="nonMember" name="member" value="nonMember" <?php echo(isset($\_POST['member']) && $\_POST['member'] == 'nonMember' ? 'checked' : ''); ?>>

<label for="nonMember">An Nicht-Vereinsmitglieder</label><br /><br />

<h4>Mailinglist?:</h4>

<?php

echo $list;

?> <br />

<h3>Option:</h3>

<input type="checkbox" id="option" name="both" value="option" <?php echo(isset($\_POST['both']) ? 'checked' : ''); ?>>

<label for="option">Sollen die Empfänger beide Vordefinitionen erfüllen?</label><br />

</div>

<div style="text-align: right; float: right">

<h3>...oder wähle die Empfänger selbst:<span id="required">\*</span></h3>

<select name="recipients[]" size="7" multiple>

<option value="select" <?php echo (!isset($\_POST['recipients']) || (isset($\_POST['recipients']) && in\_array('select', $\_POST['recipients'])) ? 'selected' : ''); ?>>Bitte Auswählen:</option>

<?php

echo $people;

?>

</select>

<h5>Halte 'Strg' gedrückt zur Mehrfachauswahl</h5>

</div>

<div style="clear: both; padding-top: 15px;">

<center><input name="submit" type="submit" value="Mails verschicken" /></center>

</div>

</form>

</div>

<?php

}

else{

echo $output;

}

?>

</body>

</html>