



**Univerzitet Singidunum**

**Tehnički fakultet**

**Image Hosting Website**

**-Projektni rad-**

**Predmet:** Web programiranje

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# 1. Uvod

U dokumentaciji će biti prikazana troslojna web aplikacija pod nazivom: “Image hosting website”. Uloga aplikacije je da pruži mogućnost besplatnog preuzimanja pozadinskih slika visokog kvaliteta za kompjutere, laptopove, pametne telefone i dr.

Mogućnost pretrage i preuzimanja slika imaju svi posetilaci websajta, a što se tiče ostalih funkcionalnosti koje sajt nudi, kao što je na primer upload pozadinskih slika po želji, dostupno je samo registrovanim članovima.

## 2. Opis aplikacije

U pitanju je troslojna aplikacija (sloj prezentacije, sloj poslovne logike i sloj baze podataka). Sloj prezentacije se izvršava na klijentskoj strani (front-end, http\_request) u okviru browser-a. Tehnologije koje su korišćene za izradu aplikacije iz ovog sloja su: HTML, CSS i JavaScript. Sa druge strane, sloj poslovne logike se izvršava na serverskoj strani (back-end, http\_response), gde se koriste skripte serverske strane za izradu. U slučaju ove aplikacije, korišćena je PHP tehnologija. I na kraju se nalazi treći i poslednji sloj, sloj baze podataka, koji se sastoji od DBMS (Database Management System) koji omogućava čitanje, unos, brisanje i izmenu podatka u bazi, kontroliše da li ima redundanse, integritet i drugo. Jezik koji je korišćen za ovaj sloj je SQL.

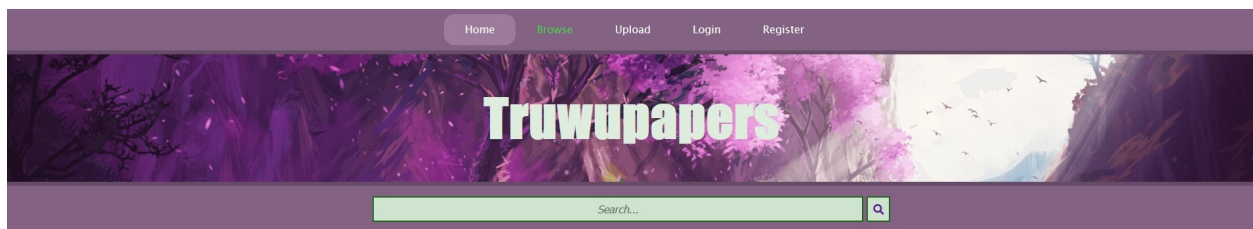
Aplikacija se sastoji od 22 PHP stranica, od kojih 17 su stranice na websajtu kojim korisnik može pristupiti, a ostale su stranice koje samo izvršavaju određene naredbe u pozadini, na primer validacija forme, kreiranje baze podataka i drugo.

Što se tiče CSS-a, postoji samo jedna stranica koja sadrži celokupni stil sajta.

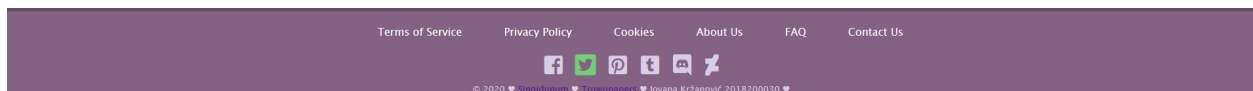
I na kraju, ukupno ima 9 JavaScript stranica od kojih 3 služe za validaciju 3 različite forme, 5 čija je svrha smeštanja tekstualnog sadržaja sa stranica i poslednja je namenjena za slideshow.

U nastavku sekcije biće prikazani određeni isecci stranica koje websajt nudi u desktop i mobile verzijama.

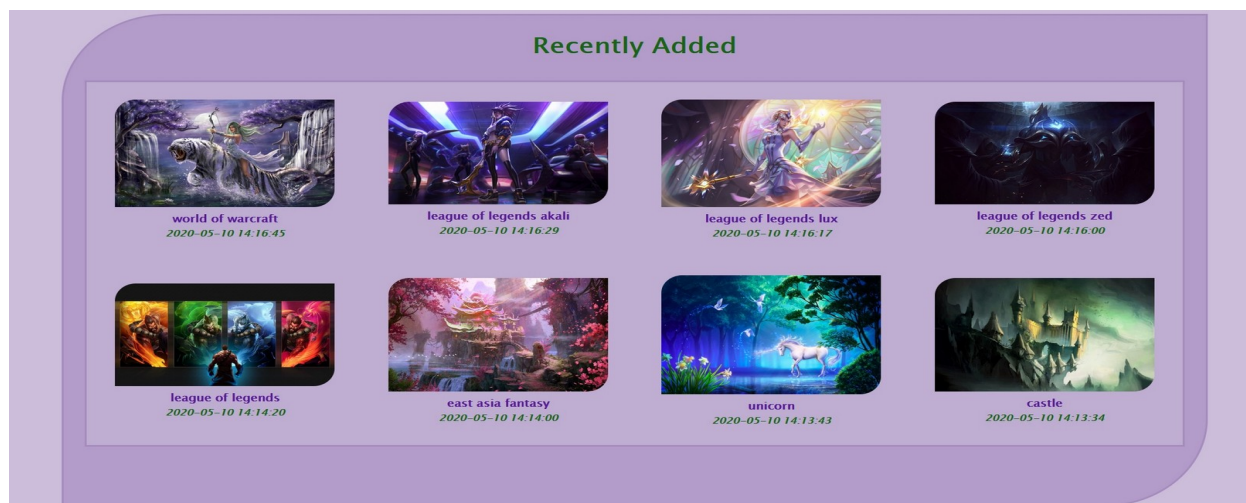
### 2.1. Desktop



Slika 1. (header)



Slika 2. (footer)



Slika 3. (index.php – jedan od 3 identičnih blokova koje pružaju informacije o najnovijim slikama, itd.)



Slika 4. (browse.php – Opcije filtriranja svih slika)

**Sign Up**

*Username:*  
Enter username

*Password:*  
Enter password

*Confirm Password:*  
Confirm password

*Email:*  
Enter email

*Display Name:*  
Enter display name

Register

Already have an account?  
Login Here

By creating an account you agree to our [Terms of Service](#) & [Privacy Policy](#).

Slika 5. (register.php – forma za registraciju)

**Thank you for joining Truwupapers! Welcome aboard!**

**Your parameters are:**

*Username:*  
123123

*Password:*  
123123

*Email:*  
123456@gmail.com

*Display Name:*  
123123

*Date Created:*  
2020/05/17

Return to Site

Slika 6. (registerAction.php – uspešno registrovan korisnik)

**123123's Profile Page**

**Current Parametres:**

user id: 4

username: 123123

email: 123123@gmail.com

display name: 123123

**Change email:**

**Change Display Name:**

**Change Password:**

**Delete your account:**

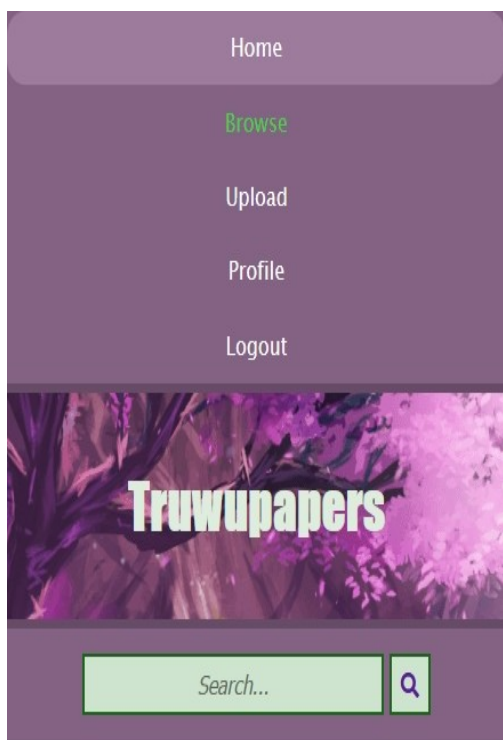
**Opened Tickets:**

Title: 1321213123

Date: 2020-05-17 14:07:56

Slika 7. (profile.php – izgled korisničke stranice)

## 2.2. Mobile



Slika 8.

**Sign In**

Username:

Password:

☐ Remember me

Don't have an account?

Slika 9.

**Title:**

anime

**Date Added:**

2020-05-10 14:12:54

**Uploaded By:**

zxcvbn

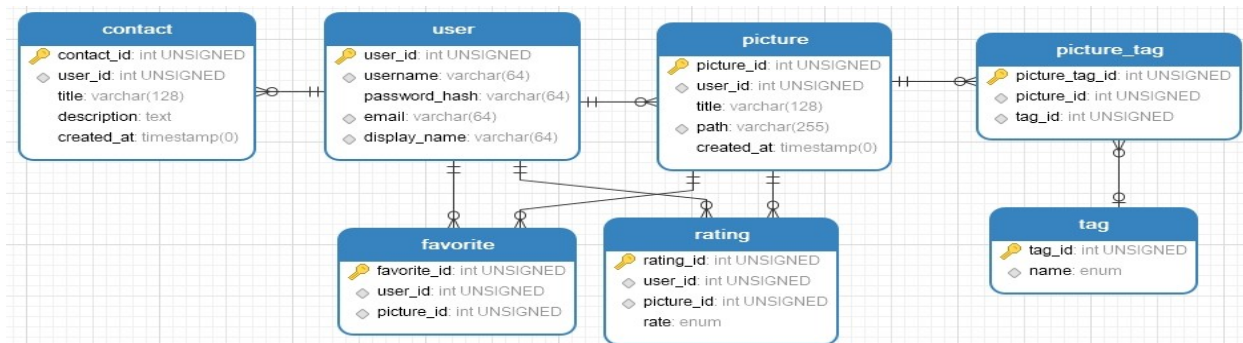
Slika 10.

## 3. Prikaz tehnologije

U ovoj sekciji će biti prikazani bitniji segmenti koda koji su korišćeni za izradu ove web aplikacije.

### 3.1. Model baze podataka

Baza podataka se sastoji iz 7 tabela: user, picture, contact, favorite, rating, picture i picture\_tag. Tabele user-picture i user-contact su u 1:N odnosu, a tabele favorite i rating su vezne tabele između user i picture tabela u N:M odnosu i tabela picture\_tag je takođe vezna tabela, samo između picture i tag.



Slika 11. (Model baze podataka)

### 3.2. HTML i PHP

```
1 <?php
2 session_start();
3 include 'connect.php';
4 include 'database.php';
5 ?>
6
7 <!DOCTYPE html>
8 <html lang="en">
9
10 <head>
11 <title>Truuupapers</title>
12 <meta charset="utf-8">
13 <meta http-equiv="X-UA-Compatible" content="IE=edge">
14 <meta name="viewport" content="width=device-width, initial-scale=1.0">
15 <meta name="author" content="mailto:jovana.krzanovic.1@sigmail.rs, Jovana Krzanovic">
16 <meta name="description" content="download high quality wallpaper">
17 <meta name="keywords" content="wallpaper, picture, high quality">
18
19 <link rel="stylesheet" href="https://use.fontawesome.com/releases/v5.6.3/css/all.css" integrity="sha384-UhRTZI+pbxHCWp1t77B1142tiqgDB80Kn4Z8NTSRyMA2Fd3n5d981w600s/" crossorigin="anonymous">
20 <link rel="shortcut icon" href="img/icon.ico">
21 <link rel="stylesheet" type="text/css" href="css/style.css">
22 </head>
23
24 <body>
25 <div class="header">
26 <div class="headerTop">
27 <div class="headerNav">
28 <div>
29 <?php
30
31 if(isset($_SESSION['usernameId'])){
32 echo "<li><a class='active' href='index.php'>Home</a></li>";
33 <li><a href='browse.php?sort=browse'>Browse</a></li>";
34 <li><a href='upload.php'>Upload</a></li>";
35 <li><a href='profile.php'>Profile</a></li>";
36 <li><a href='logoutAction.php'>Logout</a></li>";
37 }
38 else{
39 echo "<li><a class='active' href='index.php'>Home</a></li>";
40 <li><a href='browse.php?sort=browse'>Browse</a></li>";
41 <li><a href='upload.php'>Upload</a></li>";
42 <li><a href='login.php'>Login</a></li>";
43 <li><a href='register.php'>Register</a></li>";
44 }
45 </div>
46 </div>
47 </div>
48 </div>
```

Slika 12. (index.php 1. deo – izgled head taga, promena header top nav liste u odnosu na to da li je korisnik ulogovan ili nije)



```

49 <div class="headerMid">
50 <h1 class="title"><a href="index.php?Truwupapers"></h1>
51 </div>
52 <div class="headerBot">
53 <form class="search" name="searchForm" method="GET" action="search.php">
54 <input type="text" class="searchText" placeholder="Search..." name="search" size="50">
55 <button type="submit" name="searchButton" class="searchButton"><i class="fa fa-search"></i></button>
56 </form>
57 </div>
58 </header>
59
60 <a href="browse.php?sort=browse"></a>
61
62 <?php
63
64 echo "<div class='indexMiddle'\>";
65 echo "<div class='indexTitle'\>br/</div>"; >> <a href="browse.php?sort=ratingDESC">Highest Rated</a> <?php echo "</h2></div>";
66 $sql = "SELECT picture.path, picture.title, AVG(rating.rate) AS average, picture.picture_id
67 FROM picture
68 INNER JOIN rating ON
69 picture.picture_id = rating.picture_id
70 GROUP BY picture.title
71 ORDER BY average DESC
72 LIMIT 8";
73 $result = $object->query($sql);
74 echo "<div class='results'\>";
75 if ($result->num_rows > 0){
76 while ($row = $result->fetch_assoc()){
77 echo "<div class='result'\>";
78 echo "<div class='resultimg'\>"; >> <a href="picture.php?id=<?php echo $row['picture_id']?>"> >"> </a> <?php echo "</div>";
79 <?php echo "<div class='resultText'\><h3> . $row['title'] . "</h3></div>";
80 echo "<div class='resultRating'\><h4> . $row['average'] . "</h4></div></div>";
81 }
82 echo "</div><br/><br/><br/>";
83
84 echo "</div>";

```

Slika 13. (index.php 2.deo – izgled ostatka header-a, slideshow, jedan od identičnih blokova koji prikazuje 10 slika sa najboljim ocenama prema sql upitu, zatim se upit obrađuje i prikazuje na sajt. Kod `<a href="picture.php?id=<php echo $row['picture_id']?>">` predstavlja dinamičko kreiranje varijacija picture.php stranice u zavisnosti od picture\_id dohvaćenog iz tabele picture)

```

128 <footer>
129 <div class="footerTop">
130 <nav class="footerNav">
131 <ul>
132 <li><a href="terms.php">Terms of Service</li>
133 <li><a href="privacy.php">Privacy Policy</li>
134 <li><a href="cookies.php">Cookies</li>
135 <li><a href="about.php">About Us</li>
136 <li><a href="faq.php">FAQ</li>
137 <li><a href="contact.php">Contact Us</li>
138 </ul>
139 </nav>
140 </div>
141 <div class="footerMid">
142 <a href="https://www.facebook.com" target="blank" alt="Facebook"><span class="fab fa-facebook-square fa-2x"></span></a>
143 <a href="https://twitter.com" target="blank" alt="Twitter"><span class="fab fa-twitter-square fa-2x"></span></a>
144 <a href="https://www.pinterest.com" target="blank" alt="Pinterest"><span class="fab fa-pinterest-square fa-2x"></span></a>
145 <a href="https://www.tumblr.com" target="blank" alt="Tumblr"><span class="fab fa-tumblr-square fa-2x"></span></a>
146 <a href="https://discordapp.com" target="blank" alt="Discord"><span class="fab fa-discord fa-2x"></span></a>
147 <a href="https://www.deviantart.com" target="blank" alt="DeviantArt"><span class="fab fa-deviantart fa-2x"></span></a>
148 </div>
149 <div class="footerBot">
150 <p class="copyright"><small>&copy; 2020 &hearts; <a href="https://singidunum.ac.rs" target="blank">Singidunum</a> &hearts; <a href="index.php?Truwupapers"> &hearts; Jovana K
151 </div>
152 </footer>
153 <script type="text/javascript" src=".../js/slideshow.js"></script>
154 </body>
155
156 </html>

```

Slika 14. (index.php 3. deo – prikaz footer-a)

```

185 elseif($GET['sort'] == 'anime'){
186 $sql = "SELECT picture.path, picture.title, picture.picture_id, picture.created_at AS datte, AVG(rating.rate) AS average, tag.`name`
187 FROM picture
188 INNER JOIN picture_tag ON
189 picture.picture_id = picture_tag.picture_id
190 INNER JOIN tag ON
191 picture_tag.tag_id = tag.tag_id
192 INNER JOIN rating ON
193 picture.picture_id = rating.picture_id
194 WHERE tag.`name` = 'anime'
195 GROUP BY picture_tag_id
196 ORDER BY picture.title;";
197 }

```

Slika 15. (browse.php – prikaz upita koji sortira slike po tagu 'anime' i dohvata informacije o nazivu slike, kada je postavljena i prosečnu ocenu)

```

339 $result = $object->query($sql);
340 echo "<div class='results'\>";
341
342 if ($result->num_rows > 0){
343 while ($row = $result->fetch_assoc()){
344 echo "<div class='result'\>";
345 echo "<div class='resultimg'\>"; >> <a href="picture.php?id=<?php echo $row['picture_id']?>"> >"> </a> <?php echo "</div>";
346 <?php echo "<div class='resultText'\><h3> . $row['title'] . "</h3></div>";
347 echo "<div class='resultText'\><h4> . $row['datte'] . "</h4></div>";
348 echo "<div class='resultRating'\><h4> . $row['average'] . "</h4></div></div>";
349 }
350 }
351 echo "</div>";
352
353 $object->close();
354 >>

```

Slika 16. (browse.php – izvršavanje gore navedenog upita i prikazivanje na stranicu u sledećem formatu)



```

59 <?php
60 if(isset($_GET['searchButton'])){
61     $search = $object->real_escape_string($_GET['search']);
62     $sql = "SELECT picture.path, picture.title, picture.picture_id, AVG(rating.rate) AS average
63           FROM picture INNER JOIN rating ON
64           picture.picture_id = rating.picture_id
65           WHERE picture.title LIKE '%".$search."%'
66           GROUP BY picture.title;";
67     $result = $object->query($sql);
68     $queryResult = $result->num_rows;
69     echo "<h2 class='resultSearch'>Search Results: " . $queryResult . "</h2>";
70     echo "<div class='results'>";
71
72     if ($queryResult > 0){
73         while ($row = $result->fetch_assoc()){
74             echo "<div class='result'>";
75             echo "<div class='resultimg'>";
76             echo "<a href='picture.php?id=" . $row['picture_id'] . "><img class='img' src='";
77             echo "<div class='resulttext'><h3> " . $row['title'] . "</h3></div>";
78             echo "<div class='resultRating'><h4> " . $row['average'] . "</h4></div></div>";
79         }
80     }
81     echo "</div>";
82     $object->close();
83 }

```

Slika 17. (search.php – SQL upit korišćen da se postigne funkcija pretrage slika na websajtu)

```

63 <form class="form" method="POST" action="loginAction.php">
64     <label class="label">Username:</label><br /><input type="text" id="username" name="username" placeholder="Enter username" size="50"
65     <?php if(isset($_COOKIE['username']))( echo "value='{$_COOKIE['username']}'"; ) ?> /><span id="usernameSpan"></span><br />
66     <label class="label">Password:</label><br /><input type="password" id="password" name="password" placeholder="Enter password" size="50"
67     <?php if(isset($_COOKIE['password']))( echo "value='{$_COOKIE['password']}'"; ) ?> /><span id="passwordSpan"></span><br /><br />
68     <input type="checkbox" name="checkbox" /><label class="label"><input type="checkbox" /><input type="checkbox" /><input type="checkbox" /><input type="checkbox" /><input type="checkbox" />
69     <button type="submit" id="loginButton" name="loginButton">Login</button><br /><br /><br />
70     <label class="label">Don't have an account?</label><br /><button type="submit" formaction="register.php" id="regButton">Register Here</button><br /><br />
71 </form>

```

Slika 18. (login.php – forma za login u kojoj se nalazi opcija (checkbox) čuvanja parametra o korisniku uz pomoć kolačića, samo ako je kolačić setovan)

```

3 if (isset($_POST['loginButton'])){
4     include 'connect.php';
5
6     $username = $_POST['username'];
7     $password = $_POST['password'];
8
9     if(empty($username) || empty($password)){
10         header('Location: login.php?error=empty');
11         exit();
12     }
13     else{
14         $sql = "SELECT * FROM 'user'
15               WHERE 'user'='username'=?";
16         $statement = mysqli_stmt_init($object);
17
18         if(mysqli_stmt_prepare($statement, $sql)){
19             header('Location: login.php?error=sqlerror');
20             exit();
21         }
22         else{
23             mysqli_stmt_bind_param($statement, "s", $username);
24             mysqli_stmt_execute($statement);
25             $result = mysqli_stmt_get_result($statement);
26
27             if($row = mysqli_fetch_assoc($result)){
28                 $passwordCheck = password_verify($password, $row['password_hash']);
29
30                 if($passwordCheck == false){
31                     header('Location: login.php?error=wrongpassword');
32                     exit();
33                 }
34                 else if($passwordCheck == true){
35                     session_start();
36                     $_SESSION['userId'] = $row['user_id'];
37                     $_SESSION['usernameId'] = $row['username'];
38
39                     if(empty($_POST['checkbox'])){
40                         setcookie('username', $username, time() + 86400, "/");
41                         setcookie('password', $password, time() + 86400, "/");
42                     }
43                 }
44             }
45         }
46     }
47 }

```

Slika 19. (loginAction.php – kod koji proverava validnost parametara. Ako su svi tačni, kreiraju se super globalne promenljive: sesija i kolačići koji dohvataju određene parametre korisnika)

```

1 <?php
2 if(isset($_POST['uploadButton'])){
3     session_start();
4     include 'connect.php';
5
6     $user = $_SESSION['userId'];
7     $title = $_POST['title'];
8     $date = date("Y-m-d H:i:s");
9
10     $file = $_FILES['file'];
11
12     $fileName = $_FILES['file']['name'];
13     $fileTempName = $_FILES['file']['tmp_name'];
14     $fileSize = $_FILES['file']['size'];
15     $fileError = $_FILES['file']['error'];
16     $fileType = $_FILES['file']['type'];
17
18     $fileExt = explode('.', $fileName);
19     $fileActualExt = strtolower(end($fileExt));
20
21     $allowed = array('jpg', 'jpeg', 'png');
22
23     if(empty($title)){
24         header('Location: upload.php?error=empty');
25         exit();
26     }
27     else if(!preg_match("/^[a-zA-Z0-9_]*$/", $title)){
28         header('Location: upload.php?error=invalidtitle');
29         exit();
30     }
31     else{
32         if(in_array($fileActualExt, $allowed)){
33             if($fileError == 0){
34                 if($fileSize < 2000000){
35                     $fileNameNew = uniqid('', true).".". $fileActualExt;
36                     $fileDestination = '../img/'.$fileNameNew;
37                     move_uploaded_file($fileTempName, $fileDestination);
38
39                     $sql = "INSERT INTO 'picture' ('user_id', 'title', 'path', 'created_at') VALUES ('".$user."', '".$title."', '".$fileDestination."', '".$date."')";
40                     $result = $object->query($sql);
41                 }
42             }
43         }
44     }
45 }

```

Slika 20. (uploadAction.php – kod koji proverava validnost i omogućava upload slike)

```

1  <?php
2      if(isset($_POST['buttonChangeEmail'])){
3          session_start();
4          include 'connect.php';
5
6          $user = $_SESSION['usernameId'];
7          $email = $_POST['email'];
8
9          if(empty($email)){
10             header("Location: profile.php?error=empty$email");
11             exit();
12         }
13         else if(!filter_var($email, FILTER_VALIDATE_EMAIL)){
14             header("Location: profile.php?error=invalid$email");
15             exit();
16         }
17         else{
18             $sql = "UPDATE `user` SET email = '$email' WHERE `user`.`username` = '$user'";
19             $result = $object->query($sql);
20
21             header("Location: profile.php?status=success");
22             exit();
23         }
24     }
25 }

```

Slika 21. (profileAction.php – proces izmene email adrese već registrovanog korisnika)

```

113 $user = $_SESSION['userId'];
114
115 $myFile = "contacts$user.txt";
116 $fo = fopen($myFile, 'w+') or die('Cannot open file');
117
118 $sql = "SELECT * FROM contact WHERE `user_id` = '$user'";
119 $result = mysqli_query($sql);
120 echo "</br></br></br></br><h3 class='profilesSubTitle'>Opened Tickets: </h3><br/>";
121 if ($result->num_rows > 0) {
122     while ($row = $result->fetch_assoc()) {
123         $data = "<h4 class='profileText'>Title: " . $row['title'] . "</br>Date: " . $row['created_at'] . "</h4></br></br>";
124         fwrite($fo, $data);
125     }
126 }
127
128 echo file_get_contents($myFile);
129 fclose($fo);

```

Slika 22. (profile.php – dohvaćanje popunjene kontakt forme iz baze podataka, kreiranje contact.txt fajla za svakog korisnika, upisivanje u njega informacije iz baze i prikazivanje na profilnoj stranici)

```

74 if(isset($_POST['buttonDeleteAccount'])){
75     session_start();
76     include 'connect.php';
77
78     $user = $_SESSION['userId'];
79
80     $sql = "DELETE `user`, `contact`, `picture`, `favorite`, `rating` FROM `user`
81     INNER JOIN `contact` ON
82     `user`.`user_id` = `contact`.`user_id`
83     INNER JOIN `picture` ON
84     `user`.`user_id` = `picture`.`user_id`
85     INNER JOIN `favorite` ON
86     `user`.`user_id` = `favorite`.`user_id`
87     INNER JOIN `rating` ON
88     `user`.`user_id` = `rating`.`user_id`
89     WHERE `user`.`user_id` = '$user'";
90
91     $result = $object->query($sql);
92     session_unset();
93     session_destroy();
94     header("Location: faq.php");
95 }
96 $object->close();
97 }

```

Slika 23. (profileAction.php – uklanjanje korisničkog profila iz baze podataka)

### 3.2.1. Kreiranje baze podataka

```
6 $table_user = "DROP TABLE IF EXISTS `user`";
7 $object->query($table_user) or die("drop did not happen for table user");
```

Slika 24. (database.php – brisanje tabele user ukoliko već postoji)

```
31 $table_user = "CREATE TABLE `user` (  
32     `user_id` int(10) UNSIGNED NOT NULL AUTO_INCREMENT,  
33     `username` varchar(64) CHARACTER SET utf8 COLLATE utf8_unicode_ci NOT NULL,  
34     `password_hash` varchar(64) CHARACTER SET utf8 COLLATE utf8_unicode_ci NOT NULL,  
35     `email` varchar(64) CHARACTER SET utf8 COLLATE utf8_unicode_ci NOT NULL,  
36     `display_name` varchar(64) CHARACTER SET utf8 COLLATE utf8_unicode_ci NOT NULL,  
37     PRIMARY KEY (`user_id`) USING BTREE,  
38     UNIQUE INDEX `uq_user_username` (`username`) USING BTREE,  
39     UNIQUE INDEX `uq_user_email` (`email`) USING BTREE,  
40     UNIQUE INDEX `uq_user_display_name` (`display_name`) USING BTREE  
41 ) ENGINE = InnoDB AUTO_INCREMENT = 4 CHARACTER SET = utf8 COLLATE = utf8_unicode_ci ROW_FORMAT = Dynamic";  
42 $object->query($table_user) or die("create did not happen for table user");
```

Slika 25. (database.php – kreiranje tabele user)

## 3.3. CSS

```
106 /* slideshow */
107 .slideshow{
108   align-items: center;
109   width: 60%;
110   height: auto;
111   margin-top: 2em;
112   border-top-left-radius: 5em;
113   border-bottom-right-radius: 5em;
114   border: 0.2em solid #196619;
115   -webkit-animation: fade 2s infinite;
116   -moz-animation: fade 2s infinite;
117   -ms-animation: fade 2s infinite;
118   -o-animation: fade 2s infinite;
119   animation: fade 2s infinite;
120 }
121
122 @keyframes fade{
123   0% {opacity: 0.5;}
124   100% {opacity: 1;}
125 }
126
127 @-moz-keyframes fade{
128   0% {opacity: 0.5;}
129   100% {opacity: 1;}
130 }
131
132 @-webkit-keyframes fade{
133   0% {opacity: 0.5;}
134   100% {opacity: 1;}
135 }
136
137 @-ms-keyframes fade{
138   0% {opacity: 0.5;}
139   100% {opacity: 1;}
140 }
141
142 @-o-keyframes fade{
143   0% {opacity: 0.5;}
144   100% {opacity: 1;}
145 }
```

Slika 26. (style.css – prikaz slideshow-a u css kodu optimizovan za različite pretraživače)

## 3.4. JavaScript

```
1  |var i = 0;
2  |var img = ["slide1.jpg", "slide2.jpg", "slide3.jpg", "slide4.jpg", "slide5.jpg", "slide6.jpg"];
3  |slider();
4  |function slider(){
5  |  document.querySelector(".slideshow").src = "../img/" + img[i];
6  |  i++;
7  |  if(i == img.length){
8  |    i = 0;
9  |  }
10 |  setTimeout(slider, 2000);
11 | }
```

Slika 27. (slideshow.js – prikaz slideshow-a u javascript kodu)

# 4. Zaključak

Trenutno stanje aplikacije je solidno za prvi pokušaj izrade ovakvog projekta, ali je idalje u velikom nedostatku savremenijih tehnologija koje se mogu zapaziti na modernim websajtovima rasprostranjenih na tržištu.