



UNIVERZITET U NOVOM SADU
PRIRODNO-MATEMATIČKI
FAKULTET



Dizajn i implementacija web aplikacije za galeriju umetničkih slika

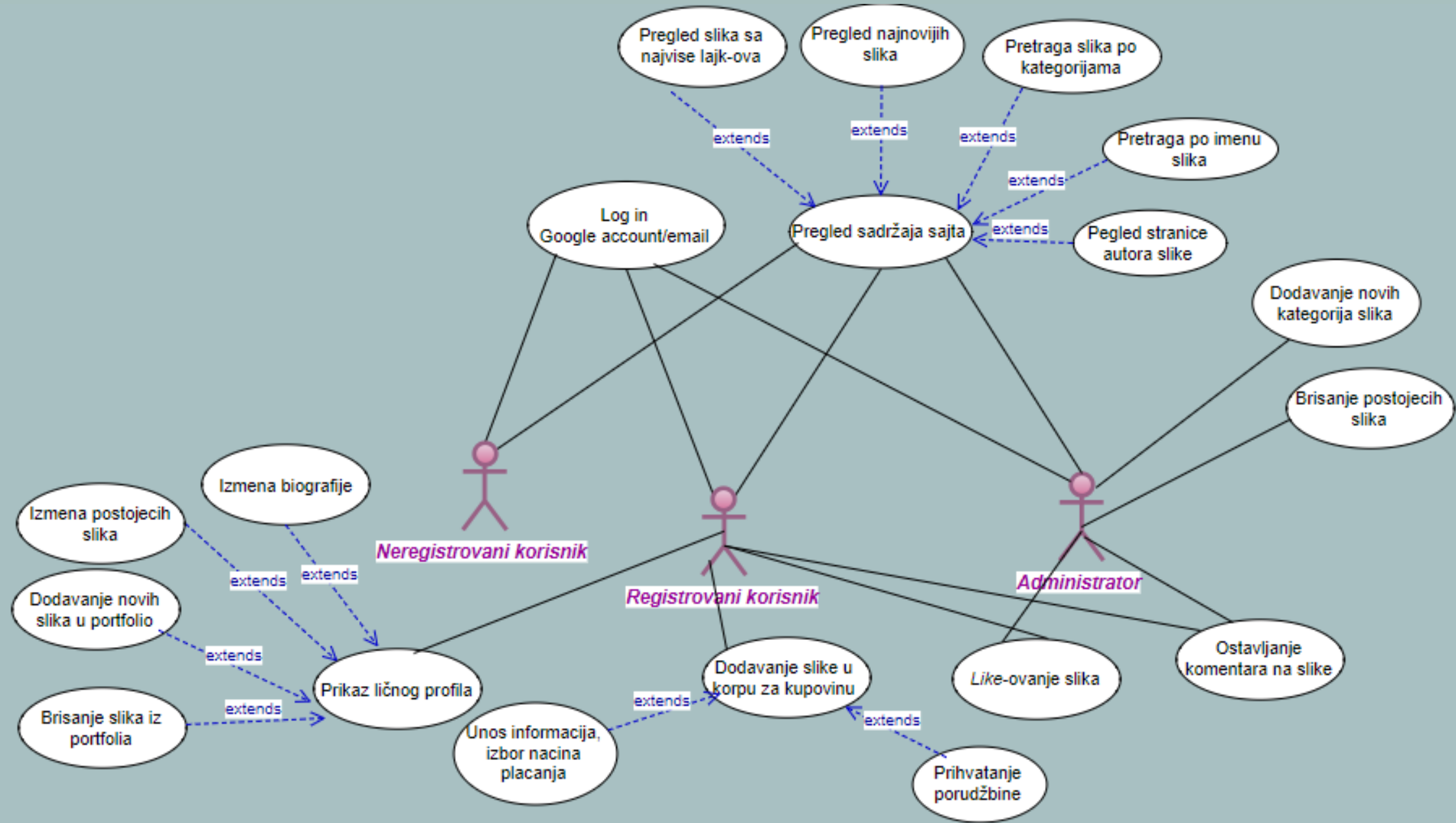
- diplomski rad -

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Novi Sad, 2017

Dijagram slučajeja korišćenja



Korišćenje tehnologije

- HTML, CSS, JavaScript, jQuery, Bootstrap, Lodash, Handlebars, Firebase

Handlebars

```
<script id="handlebars-demo" type="text/x-handlebars-template">
  <div>
    My name is {{name}}. I am a {{occupation}}.
  </div>
</script>
```

```
// Retrieve the template data from the HTML (jQuery is used here).
var template = $('#handlebars-demo').html();

// Compile the template data into a function
var templateScript = Handlebars.compile(template);

var context = { "name" : "Milan Markovic", "occupation" : "developer" };

// html = 'My name is Milan Markovic. I am a developer.'
var html = templateScript(context);
```

Block templates:
if, with, unless, each

```
{{#if boolean}}
  Some Content here
{{/if}}
```

Firebase

- **Realtime Database:**

- *cloud-hosted* baza podataka
- automatska sinhronizacija podataka
- JSON objekat

```
{
  "users": {
    "alovelace": {
      "name": "Ada Lovelace",
      "contacts": { "ghopper": true },
    },
    "ghopper": { ... },
    "eclarke": { ... }
  }
}
```

Kreiranje reference:

```
// Get a reference to the database service
var database = firebase.database();
```

Pisanje u bazu: **set()**

Čitanje iz baze: **on()**, **once()**

Firebase

- **Cloud Storage:**

- čuva slike, audio, video
- fajlovi su uređeni hijerarhijski

Kreiranje reference:

```
// Get a reference to the storage service, which is used to create references in your storage
var storage = firebase.storage();

// Create a storage reference from our storage service
var storageRef = storage.ref();
```

Dodavanje fajla: **put()**

Download fajla: **getDownloadURL()**

Firebase

- **Firebase Authentication (*FirebaseUI*):**

```
<script type="text/javascript">
  // FirebaseUI config.
  var uiConfig = {
    signInSuccessUrl: '<url-to-redirect-to-on-success>',
    signInOptions: [
      // Leave the lines as is for the providers you want to offer your users.
      firebase.auth.GoogleAuthProvider.PROVIDER_ID,
      firebase.auth.FacebookAuthProvider.PROVIDER_ID,
      firebase.auth.TwitterAuthProvider.PROVIDER_ID,
      firebase.auth.GithubAuthProvider.PROVIDER_ID,
      firebase.auth.EmailAuthProvider.PROVIDER_ID,
      firebase.auth.PhoneAuthProvider.PROVIDER_ID
    ],
    // Terms of service url.
    tosUrl: '<your-tos-url>'
  };

  // Initialize the FirebaseUI Widget using Firebase.
  var ui = new firebaseui.auth.AuthUI(firebase.auth());
  // The start method will wait until the DOM is loaded.
  ui.start('#firebaseui-auth-container', uiConfig);
</script>
```

Trenutno ulogovani korisnik:

```
firebase.auth().onAuthStateChanged(function(user) {
  if (user) {
    // User is signed in.
  } else {
    // No user is signed in.
  }
});
```

```
var user = firebase.auth().currentUser;

if (user) {
  // User is signed in.
} else {
  // No user is signed in.
}
```

Struktura baze podataka

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- + category
- + paymentMethod
- + pictures
- + shippingInfo
- + users

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- + category
- + paymentMethod
- pictures
 - + ly7RiDcsfJNFc9uxBDm0ntaLckD2-1504195202348
 - + ly7RiDcsfJNFc9uxBDm0ntaLckD2-1504195405439
 - + ly7RiDcsfJNFc9uxBDm0ntaLckD2-1504195473165
 - + ly7RiDcsfJNFc9uxBDm0ntaLckD2-1504195520149
 - + SQsHwpX103cWcN6JhdWYlwbRhJB2-1504197453088
 - + SQsHwpX103cWcN6JhdWYlwbRhJB2-1504197484374
 - + VuTkUc5y0DUh4BGoJqAlafil0U92-1504194253177
 - + VuTkUc5y0DUh4BGoJqAlafil0U92-1504194297702
 - + VuTkUc5y0DUh4BGoJqAlafil0U92-1504194500490
 - + WqyYhjlUNoQ4Px5Vs03BGnuGlj72-1503865296383
 - + WqyYhjlUNoQ4Px5Vs03BGnuGlj72-1503865358163
 - + WqyYhjlUNoQ4Px5Vs03BGnuGlj72-1504194796686
 - + rXAJxwHIBPUxgPakoSpjulf3xyY2-1503872220521
 - + rXAJxwHIBPUxgPakoSpjulf3xyY2-1503902819621
 - + rXAJxwHIBPUxgPakoSpjulf3xyY2-1504194146902
- + shippingInfo
- + users

rXAJxwHIBPUxgPakoSpjulf3xyY2-1503902819621

- author: "Tijana Gajic"
- authorid: "rXAJxwHIBPUxgPakoSpjuIf3xy\"
- category: "Conseptual"
- + comments
- date: "08/28/2017"
- dateNow: 150390281962
- description: "pink rose picture descripti
- + likes
- name: "pink rose"
- numberOfLikes: 5
- price: "30"
- url: "https://firebasestorage.googleapis.com/v0/b/ga]

likes

- SQsHwpX103cWcN6JhdWYlwbRhJB2: true
- VuTkUc5y0DUh4BGoJqAlafil0U92: true
- WqyYhjlUNoQ4Px5Vs03BGnuGlj72: true
- hZDAIalksSRR3hY3SaqjQtMByvq1: true
- rXAJxwHIBPUxgPakoSpjulf3xyY2: true

firebase.auth().currentUser.uid + "-" +
Date.now()

Struktura baze podataka

```
- comments
  - rXAJxwHIBPUxgPakoSpjulf3xyY2-1503902841785
    by: "Tijana Gajic"
    date: "08/28/2017"
    text: "comment1"
    userid: "rXAJxwHIBPUxgPakoSpjuIf3xy\"
```

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```
+ category
+ paymentMethod
+ pictures
+ shippingInfo
- users
  + DnAyYeEAu9R3DWLX61emSjiZDYH3
  + ly7RiDcsfJNFc9uxBDm0ntaLckD2
  + SQsHwpX103cWcN6JhdWYlwbRhJB2
  + VuTkUc5y0DUh4BGoJqAlafIl0U92
  + WqyYhjlUNoQ4Px5Vs03BGNuGlj72
  + hZDAIalksSRR3hY3SaqjQtMByvq1
  + rXAJxwHIBPUxgPakoSpjulf3xyY2
```

```
- WqyYhjlUNoQ4Px5Vs03BGNuGlj72
  about: "biografija Milan Mila"
  - cart
    ly7RiDcsfJNFc9uxBDm0ntaLckD2-1504195405439: true
    SQsHwpX103cWcN6JhdWYlwbRhJB2-1504197453088: true
  email: "milanmilanovic@test.co"
  name: "Milan Milanovic"
  - shippingInfo
    city: "Novi Sad"
    country: "Serbia"
    email: "milan@test.com"
    firstName: "Milan"
    lastName: "Milanovic"
    - payment
      method: "paypal"
    state: ""
    street: "street no.1"
    zip: "21000"
```


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```
+ category
- paymentMethod
  cash on delivery: true
  debit card: true
  paypal: true
+ pictures
+ shippingInfo
+ users
```






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```
+ category
+ paymentMethod
+ pictures
- shippingInfo
  cost: 10
+ users
```


Struktura Cloud Storage-a

| <input type="checkbox"/> | Name | Size | Type | Last modified |
|--------------------------|--|------|--------|---------------|
| <input type="checkbox"/> |  image/ | — | Folder | — |

| <input type="checkbox"/> | Name | Size | Type | Last modified |
|--------------------------|---|------|--------|---------------|
| <input type="checkbox"/> |  ly7RiDcsfJNFc9uxBDm0ntaLckD2/ | — | Folder | — |
| <input type="checkbox"/> |  Rjl94cAWIKVn5Bc8b5TYPyWHUbQ2/ | — | Folder | — |

| <input type="checkbox"/> | Name | Size | Type | Last modified |  |
|--------------------------|--|---------|------------|---------------|--|
| <input type="checkbox"/> |  1504195201240.jpeg | 205.... | image/jpeg | Aug 31, 2... | |
| <input type="checkbox"/> |  1504195404062.jpeg | 99.5... | image/jpeg | Aug 31, 2... | |
| <input type="checkbox"/> |  1504195470702.jpeg | 433.... | image/jpeg | Aug 31, 2... | |
| <input type="checkbox"/> |  1504195472544.jpeg | 433.... | image/jpeg | Aug 31, 2... | |

Log-in korisnika

```
<script id="header-template-loggedout" type="text/html">
  <a href="customer-register.html">
    <i class="fa fa-user"></i>
    <span class="hidden-xs text-uppercase">Log in</span>
  </a>
  <a href="customer-register.html">
    <i class="fa fa-cart-plus "> </i>
    <span class="hidden-xs text-uppercase">Cart</span>
  </a>
</script>

<script id="header-template-loggedin" type="text/html">
  <a href="{{#if admin}} admin.html {{else}} author-edit.html {{/if}}">
    <span class="hidden-xs text-uppercase"> {{ username }} </span>
  </a>
  <a href="logout.html"><i class="fa fa-user"></i>
    <span class="hidden-xs text-uppercase">Log out</span>
  </a>
  <a href="{{#if admin}} # {{else}} shop-basket.html?{{userid}} {{/if}}">
    {{#if admin}} {{else}} <i class="fa fa-cart-plus "> </i>
    <span class="hidden-xs text-uppercase">Cart</span> {{/if}}
  </a>
</script>
```

Log-in korisnika

```
firebase.auth().onAuthStateChanged(function(user) {  
  if(user) {  
  
    firebase.database().ref('users/' + user.uid).on('value', function(snapshot) {  
  
      var template = Handlebars.compile($("#header-template-loggedin").html());  
      $("#header .login").html(template({  
        username: user.displayName,  
        userid : user.uid,  
        admin : snapshot.val().admin  
      }));  
    });  
  }  
  else if(!user) {  
    var template = Handlebars.compile($("#header-template-loggedout").html());  
    $("#header .login").html(template());  
  }  
});
```

Prikaz i izmena korisničkog profila

- dodavanje biografije:

```
firebase.database().ref("users/" +  
firebase.auth().currentUser.uid + "/about").set(text)
```

- ubacivanje slike u portfolio:

```
firebase.database().ref("pictures/" + id).set({  
  name: name,  
  author: firebase.auth().currentUser.displayName,  
  authorid: firebase.auth().currentUser.uid,  
  description: description,  
  category: category,  
  price: price,  
  url: data.downloadURL,  
  numberOfLikes : zero,  
  date: today,  
  dateNow: Date.now()  
}).then(function() {  
  $('#addNewPicture-modal').modal('hide');  
  alert("successfully added a picture");  
})
```

- edit slike:

```
$('#.editForm').submit(function() {  
  var formID = $(this).data("id");  
  var namePic = $(this).find(".namePic").val().trim();  
  var description = $(this).find(".description").val().trim();  
  var price = $(this).find(".price").val().trim();  
  var category = $(this).find(".category").val().trim();  
  if(namePic.length==0) {  
    alert("name can not be empty");  
    return false;  
  }  
  if(description.length==0) {  
    alert("description can not be empty");  
    return false;  
  }  
  if(category=="noCategory") {  
    alert("you must choose a category");  
    return false;  
  }  
  if(parseFloat(price)==0 || parseFloat(price)==NaN) {  
    alert("you must enter the price");  
    return false;  
  }  
  firebase.database().ref("pictures/" + formID).update({  
    name: namePic,  
    description : description,  
    price : price,  
    category : category  
  }).then(function() {  
    alert("edited");  
  })  
  return false;  
});
```

Pretraga slika

```
var ref = firebase.database().ref("pictures");

ref.on("value", function(data) {

    var picturesObject = data.val();
    var picturesArray = [];
    _.each(picturesObject, function(picture, id) {
        picture.id = id;
        picturesArray.push(picture);
    });

    pictures = picturesArray;
    updatePictures();
});

function updatePictures() {

    var pics = pictures.filter(function(pic) {
        return pic.name.toLowerCase().indexOf(search.toLowerCase()) >= 0;
    });

    var template = Handlebars.compile($("#pictureTemplate").html());
    $(".products").html(template({
        pictures: pics
    }));
}
```

Prikaz pojedinačne slike

URL: `http://localhost:5000/shop-detail.html?pictureID`

`pictureID` = `window.location.search.substr(1)`

- prosleđujemo pictureID tempjeltu

- **Postavljanje komentara:**

```
ref.child('pictures/' + id + '/comments/' + commentid).set({
  by: firebase.auth().currentUser.displayName,
  userid: firebase.auth().currentUser.uid,
  date: today,
  text : commentText
})
```

- **Like na sliku:**

```
ref.child('pictures/' + id).transaction(function(picture) {
  if(_.isEmpty(picture.likes))
    picture.likes = {};

  var userLike = _.find(picture.likes, function(liked, userid) {
    return userid == currentUser.uid;
  });

  if(userLike) {
    picture.numberOfLikes--;
    picture.likes[currentUser.uid] = null;
  }
  else {
    picture.numberOfLikes++;
    picture.likes[currentUser.uid] = true;
  }

  return picture;
});
```

Realizacija korpe za kupovinu

- dodavanje slike u korpu:

```
firebase.database().ref("users/" + firebase.auth().currentUser.uid + "/cart/" + id).set(true)
```

- potvrda kupovine / brisanje slike iz baze:

```
_.each(basketObject, function(value, id){
  promiseArray.push(firebase.database().ref("pictures/" + id).remove())
});

firebase.Promise.all(promiseArray).then(function(){
  firebase.database().ref('users/' + cuID + '/cart').remove()
  .then(function(){
    firebase.database().ref('users').once('value').then(function(data) {
      var users = data.val()
      var obj = {}
      _.each(basketObject, function(value, idslike) {
        _.each(users, function(user, userid) {
          obj['users/' + userid + '/cart/' + idslike] = null
        })
      })
      firebase.database().ref("/").update(obj).then(function(){
        window.location = 'shop-checkout5.html?' + cuID;
      })
    })
  })
  .catch(function(error){
    console.log("remove failed : " + error.message)
  })
});
```


Prikaz slika sa najviše *like*-ova

```
var ref = firebase.database().ref("pictures");
ref.orderByChild("numberOfLikes").limitToLast(3).on("value", function(snapshot) {
  var picturesObject = snapshot.val();
  var picturesArray = [];
  _.each(picturesObject, function(picture, id){
    picture.id = id;
    picturesArray.push(picture);
  });

  picturesArray.sort(function(a, b){return b.numberOfLikes-a.numberOfLikes});

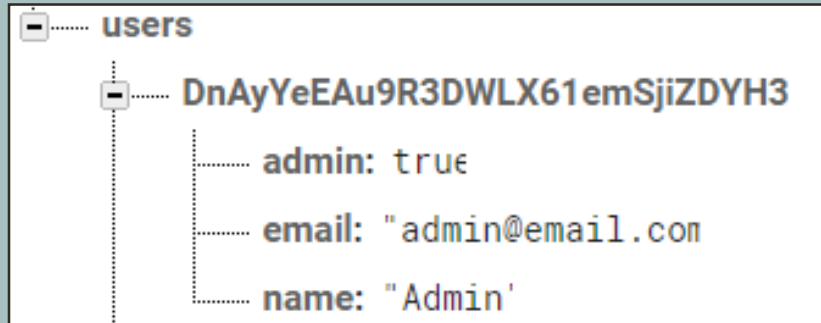
  var template = Handlebars.compile($("#mostLikedPictures-template").html());
  $("#mostLikedPictures").html(template({
    pictures: picturesArray
  }));
});
```

```
<script id="mostLikedPictures-template" type="text/html">
  {{#each pictures}}
  <div class="item">
    <div class="row">
      <div class="col-sm-5 right">
        <h1>{{name}}, {{author}}</h1>
        <p> <small> likes : {{numberOfLikes}}</small> <p>
        <br><br>
        <a href="shop-detail.html?{{id}}">
          <button type="button" class="btn btn-lg
            btn-template-transparent-primary">
            Buy this picture</button>
        </a>
      </div>
      <div class="col-sm-7">
        
      </div>
    </div>
  </div>
  {{/each}}
</script>
```

- **orderByChild()** - uređuje objekte po naznačenom ključu
- **limitToLast()** - ograničava broj objekata

Realizacija admin panel-a

- *admin* u bazi:



- dodavanje nove kategorije slike:

```
$('#categoryForm').submit(function() {
    var name= $('#name').val().trim();
    if(name.length==0) {
        alert("name can not be empty");
        return false;
    }
    firebase.database().ref('category/' + name)
    .set(true).then(function() {
        $('#addNewCategory-modal').modal('hide');
        alert("success");
    });
    return false;
});
```

- brisanje slike:

```
$(".deleteBtn").click(function() {
    var id = $(this).data("id");

    firebase.database().ref("pictures/" + id).remove().then(function() {
        firebase.database().ref('users').once('value').then(function(data) {
            var users = data.val()
            var obj = {}
            $.each(users, function(user, userid) {
                obj['users/' + userid + '/cart/' + id] = null;
            })
            firebase.database().ref("/").update(obj).then(function() {
                alert("deleted");
            })
        })
    })
    return false;
});
```

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