**Izrada aplikacije za blog platformu**

**sa pripadnom bazom podataka u MongoDB**

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1.Uvod

Blog platforma je web stranica koja – nalik dnevniku – omogućuje njenom korisniku pisanje tekstova o proizvoljnim temama, koji se na stranici prikazuju u obrnutom kronološkom redu (tako da se najnoviji objavljeni tekstovi pojavljuju prvi po redu). Doduše, za razliku od dnevnika, blog platforma je javna – dakle svaki tekst koji registrirani korisnik objavi je dostupan javnosti za pregled, te je dostupan drugim korisnicima blog – platforme za komentiranje.

Primjer Blog Platforme:A screenshot of a social media post

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Naša aplikacija će biti oblika *MAB („Multi-Author Blog“)* jer će tekstovi *(„posts“)* na njoj biti djelo ne jednog, nego grupi više registriranih korisnika blog platforme, u koju se novi potencijalni korisnik može lako uključiti korištenjem *log-in* forme.

Pritom će svaki korisnik blog-platforme imati svoj „dnevnik“, to jest svaki registirani korisnik koji je objavljivao tekstove će imati vlastitu web-stranicu na kojoj će se prikazivati svi njegovi tekstovi, zajedno s komentarima na njih.

Informacije o svakom tekstu te popratne informacije koje idu uz tekst (vrijeme objave, naslov, komentari, podaci o autoru...), te informacije o registriranim korisnicima (username, šifre...) će biti pohranjeni kao baza podataka u programu za baze podataka MongoDB.

Sama aplikacija je napravljena u programskom jeziku Java (koji se spaja na MongoDB te preko upita obrađuje dobivene podatke), budući Java kao objektno-orjentirani jezik nam lako pruža mogućnosti učitavanja podataka.

Front-end dio aplikacije, to jest korisničko sučelje, je izvedeno sa kombinacijom HTML+CSS programskih jezika.

2. Podatkovni model

Odlučili smo kreirati dvije kolekcije koje će tvoriti našu bazu podataka:

* Kolekcija *login*, koja će spremati podatke o svim registriranim korisnicima na blog platformi. ( autor je određen sa svojim korisničkim imenom )

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* Kolekcija *tekstovi,* koja će spremati podatke o objavljenim tekstovima

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ViaHZB/A/iBFutPia+MBtoptQgjdgkjFsqzgjA9cZ7Zoeg/wCv69OphNoT/wDCNHWor21liSZYJYE8wSRMwYjOVCnhT0Y1l111nYt/wrW+iN3p6zTXkNykLahAJDGscgY7C+c/MPlxk56Vv3ms2aeFli04Leac+krA1rJrMEUcUu35nNqyBzIJAW3AktkYODgOWl/66f5gtUv66/5anmVWbrT7qyhtZrqLYl3F50B3A703Fc8HjlT19K67Xb27n8P2K+HtWhg0dNOjSexj1BIWMo/1m+EsrOxbJztORjFO17W9W1jwfpckPiB5YY7Nor+2l1MLI7iVjlomcNJlSuCAentSel/X/PUF5/1scpPpnkaLa6j9us5PtDsn2WObM0W3u644B7HvVGu81DzJ/B2gjW9Stb0WN5I1xF/akU0iW7eUFVVEhboG+Ucj2rV1PVkP9rHU9Zs73T5723bR4IrlJBAokzuVAcwhY8qQQuc45qra2/roJu0eb+up5dV+80e5sNLs727aOMXoZoYST5hjHHmEY4UnIGTk4PGOa7HxT4gGsaf4pgutSiuUh1WJ9Oj81SAmZVYxgdsbckcHOTyc1jeP1z4kiuIQRZXFjbPZ+nleUqgD6EMMeoNRfT7vyv8A18ymrO39b2Odtbdru8htkZVaaRY1ZzhQScZPtWzrXhC/0M2wuJrWZ7m5mtUWCQk74nCNnIHBJGP1xWDV7RtRm0rWLa8trma2aOQbpIXKsFz8wyOeR2qopNpMiTai2iC9s59Pvp7O8Ty7i3kaORMg7WBwRkcHmrGiaPca9qqWFm8aSujuDKSFwiFz0B7Ka72fUy3xQS91vW4rzTGnuH05/wC0UmjgZlPlkj5/JAJTllwCM4IBqaz1y3Hi7RG1fy1FtBdq97ca3BeSSq0TbUeWMDGCSF3ZPzcUl8N32f5P+rGjSvoeW1Z0/T7nVdQhsbCLzbmdtkabgu4/UkCu7n1d18YaTqWkXFjd6THExsbCS9jtfsa7SrIdzfu5ATkOfvEBhnoFg1hdF+JOj3n/AAkd5NFMkYvWm1AXJhBJzE8yHbIoOG4GBnpkU+qTIldJtdEedkFWIPUHBpK9B0+81GG81hdQ1+B9ckswmmX0mqpKEXzMuqzbysbFc4yQee2eZ7jVbS+1FtFv9RtpJNQ0aOC9vWlQxm8jy8bNLnDEABC2ec9TS3X9ef8Al97Kdk2v66f5/gcFpWn/ANqapDZfa7Wz80kefdyeXEnBPzNg46Yq9pHhq51mS+W1urRBZBS7ySEK4aQICpAOeWHpxXV6LrUk3xQgubDVI7PSbF4rXdLfJAr2sfyj7zDeDjcQM9a4XUrV7PUZoZXhdg2d0E6SqQeeGQkH86NNGKzs/K3/AARdU06XSNXu9OuHjeW1maF2jJKkqcHBIHHFP0/SLjU7a8ltGjZ7OLznhLYd0H3mUd9o5PfHPrVGul+H24eOLCXIWGEvJcMfurEEbfn225H40LYJPqjmqKVsFzsGFzwD6UlA3uFFFFAgooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAq1LqV3PpsFhNMXtrZ2eFGUExlsbgD1AOM4zjPOMmqtFABRRRQAUUUUAFFFFABRRRQAUUUUAFWrbUruztLq2tZjFFdqEnCgZdQcgZ64z2HXjNVaKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigD//2Q==)

3. Punjenje baze podataka

Bazu podataka smo napunili sa podacima koristeći klasičnu naredbu db.collection\_name.insert({...}).

Primjer naredbe za punjenje kolekcije login:

db.login.insert{

"korisnicko\_ime" : "Luka",

"sifra" : "lukinasifra"

});

Primjer naredbe za punjenje kolekcije tekstovi:

db.tekstovi.insert({

"text\_id" : 4,

"text" : "Sve je počelo tamo negdje još u vrtiću i protegnulo se kroz osnovnu školu i nastupe na Lidranu. Zatim su se u Miocu moji javni nastupi prorijedili, da bih im se ponovno vratila tijekom faksa i eSTUDENTa. Moja priča s javnim nastupima je eskalirala tijekom proteklih nekoliko godina kada sam se zaposlila kao trenerica poslovnih vještina zbog čega “pričam pred ljudima” barem jedan dan u tjednu.",

"naslov" : "15 trikova kako steći samopouzdanje za javni nastup",

"autor" : {"id" : 1,"ime" : "Tea","sifra" : "teinasifra"},

"teme" : ["osobni razvoj","organizacija","trema","javni nastup","posao“ ],

"komentari" : [

{"korisnicko\_ime" : "Ana","text" : "Ajme ja se bojim nastupati! >< "},

{"korisnicko\_ime" : "Marko", "text" : "Ovo mi je spasilo život. Hvala."}

],

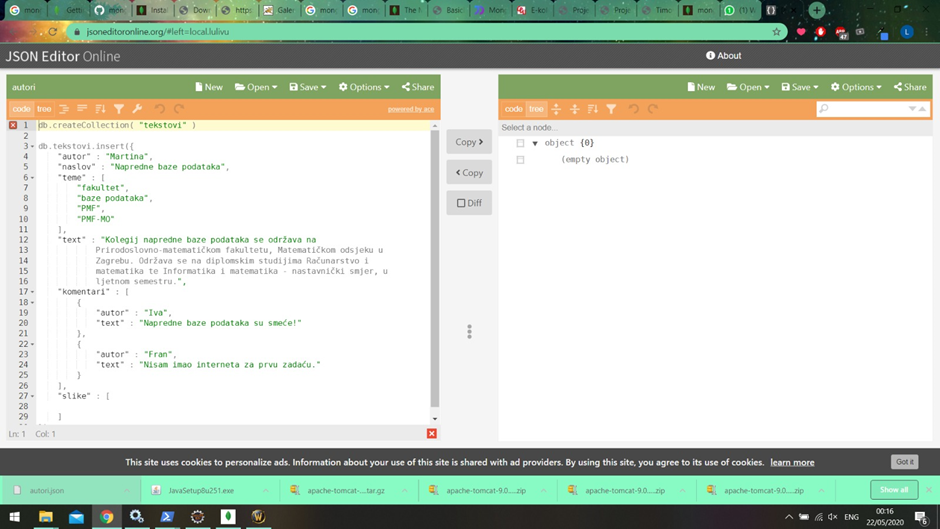
"slike" : []

});

Za konstrukciju naših podatke s kojima će se baza puniti smo koristili nasumične objave sa blog-a https://markozupanic.hr/blogovi/ (i malo mašte.)

Iz tih podataka, s naredbama za kreiranje i stavljanje podataka u kolekcije smo konstruirali datoteke *login.csv* i *test.csv*, sa kojima mongo može automatski napuniti pripadne kolekcije.

3.2 Pokretanje baze podataka



Pod pretpostavkom da Docker i MongoDB nisu instalirani, pratiti poveznicu u Izvori(7.).

1. pokrenuti mongo sa `docker start nbp-mongo`

2. kopirati dokumente **\_\_test.csv\_\_** i **\_\_login.csv\_\_**  (u npr. na linuxima: /home/user/)

3. kopirati navedene datoteke u kontejner naredbama:

 `docker cp test.csv nbp-mongo:/home/`

`docker cp login.csv nbp-mongo:/home/`

4. Pokrenuti bash shell naredbom: `docker exec -it nbp-mongo bash`

5. učitati podatke u novu bazu, nbp, kolekcije tekstovi i login:

`root@43180e0447ea:/# mongoimport -d nbp -c tekstovi --file/home/test.csv`

`root@43180e0447ea:/# mongoimport -d nbp -c login --file/home/login.csv`

4. Potrebni upiti u MongoDB

Za razvoj aplikacije smo determinirali potrebu za određenim upitima.

4.1 Nad kolekcijom *login*

* Dohvaćanje svih korisnika aplikacije

db.login.find()

* Dohvaćanje svih (različitih) imena korisnika aplikacije

db.login.distinct("korisnicko\_ime")

* Dohvatiti šifru korisnika ako imamo njegovo ime

db.login.findOne(

{ "korisnicko\_ime" : "korisnicko\_ime" }, { "\_id":0, ".sifra" : 1 }

)

4.2 Nad kolekcijom *tekstovi*

* Promijeni naslov teksta

db.tekstovi.update(

{ "text\_id" : text\_id }, { $set: { "naslov": "naslov" } }

)

* Promijeni temu teksta

db.tekstovi.update(

{ "text\_id" : text\_id }, { $set: { "teme": [ "tema1", "tema2" , ...] } }

)

* Dodaj novu temu

db.tekstovi.update(

{ "text\_id" : text\_id }, { $push: { "teme": "tema" } }

)

* Promijeni tekst
  + Ako dodajemo skroz novi tekst

db.tekstovi.update(

{ "text\_id" : text\_id }, { $set: { "text": "Novi text" } }

)

* + Ako zelimo samo nesto promijeniti u tekstu trebamo prvo dohvatiti tekst:

db.tekstovi.find(

{ "text\_id" : text\_id }, { "\_id":0, "text" : 1 }

)

* + Zatim spremiti promijenjeni tekst:

db.tekstovi.update(

{ "text\_id" : text\_id }, { $set: { "text": "Promijenjeni text" } }

)

* Dodati novi komentar na određeni tekst:

db.tekstovi.update(

{ "text\_id" : text\_id },

{ $push: {

"komentari": { "korisnicko\_ime" : "korisnicko\_ime", text" : "Novi komentar" }

} }

)

* Dohvatiti određeni tekst

db.tekstovi.find(

{ "text\_id" : text\_id }

)

* Dohvatiti sve komentare na određeni tekst

db.tekstovi.find(

{ "text\_id" : text\_id }, { "\_id":0, "komentari" : 1 }

)

* Svi tekstovi određenog autora

db.tekstovi.find(

{ "autor.korisnicko\_ime" : "korisnicko\_ime" }

)

* Analizirati tekstove po temama (*Map/Reduce* framework)

U našoj bazi podatka će tekstovi biti raspodijeljeni po ukupno 6 tema:

*biznis & karijera, marketing & SEO, digitalno poslovanje, osobni razvoj, trening & prehrana* i *putovanja*.

Ukoliko želimo dohvatiti sve tekstove (identificirane sa text\_id) koji imaju neku zadanu temu, dovoljno nam je koristiti Map/Reduce framework, koji će spremati listu identifikacija tekstova po temama u novu kolekciju *tekstovi\_po\_temama*

var mapFunction1 = function() {

for(var i=0; i<this.teme.length; i++){

var key = (this.teme[i]).product;

var value = new Array(this.text\_id);

emit(key, value);

};

};

var reduceFunction1 = function(key, values\_list) {

//values\_list je lista jednoclanih listi.

//zelimo umjesto toga imati listu text\_id-eva

var reduced\_value=new Array();

for (var i=0; i<values\_list.length; i++){

var current\_value=values\_list[i];

reduced\_value.push(current\_value[0]);

};

return reduced\_value;

};

db.tekstovi.mapReduce(

mapFunction1,

reduceFunction1,

{ out: {merge: "tekstovi\_po\_temama"}}

);

Sada imamo novu kolekciju s elementima oblika:

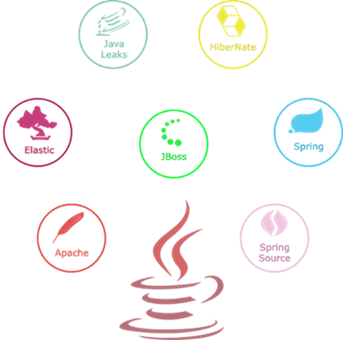
![A screenshot of a cell phone

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4RD0RXhpZgAATU0AKgAAAAgABAE7AAIAAAAOAAAISodpAAQAAAABAAAIWJydAAEAAAAcAAAQ0OocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAEl2YWNoIE5hbGxpYWgAAAWQAwACAAAAFAAAEKaQBAACAAAAFAAAELqSkQACAAAAAzIzAACSkgACAAAAAzIzAADqHAAHAAAIDAAACJoAAAAAHOoAAAAIAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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1ijVUVEjQdFVFAVR7ACi1tu4evYTSrxtP1a3ulER8twT50KyrjvlWBB49uK9E1OznvvivGniKwhh0ee+le2uDYxxJdZBaMeaAvmBjt6tznrzXmFFVvbyF0fn/X6np0liza1o8SeGpHvfMlFw2paLHYW8ttgbiVUsoKZJ8wAEZHXjJBJa6H448Ly6RBZpoMxRYL6S3R2my/7wu7LlXDDHB+UYwQCc+Y0ULRpjlqmu5t+KItYh1PZrunCwkBYRqLBLYOuevyKob68/Wl8H295c+J7SOxsBfZkUTRtZrcARFgGJVlYAc/exx61n6fe29k0hudLtNQDAYFy0o2fTy3X9c0uoX9veiP7NpNnp+3OTbPM2/6+ZI3T2x1pR92w5++2dunh+e01zxb9m0QSalBJv02zmsxIDC05UyJCwwwC4wcEDNYvxGEg8YMJhGJBZ2ocRhdoPkJnG35cfTj0rlav6fqNrZwslxo1jfszZD3LzgqPQeXIox9RmklokCdm33/AOB/kbPgrw9qPiC5uFt5buPTbXZPe/ZQzu2CdgVF+855xxxyaTVrHWfFvj69jj0qS21G6kaUWUxETqNucHfjnaM+/WsK/u4byZXt9PtrBQuDHbNIVY+p8x2OfxxUmmaxfaPJLJpsqwSyIUMoiUyICCDsYglDgnlSDT3f9f12FsLpGh6jrt3LbaVb+fNFE0zrvVMIvU/MR69OtGmaJqGsJdvptv5y2UDXE53quyMdTyRn6DmqFFAF/TtF1DVoL2bT7fzo7GA3Fwd6rsjHU8kZ+gya1/A3/IT1L/sEXn/oo1zNauj68+iwXa29jayzXMMkBuJfMLxo67WCgOF6HuDR0foxdV6r8GjKooooGFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAauh3L2keozxLGzpaqQJYlkU/vouqsCD+Irb8W2K28F5d2lqsNhez2k1u8S4hcmFy4Q9MByRgdOnFZHh2ybUW1C1RxG0lqBvZHcL++jOcIrMenYGtjxkXmfUbhYrhbdri0ihknhaPzRHA6FgGGccZx7jNInXmOOoooplBRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFAH//Z)

Iz koje lako dohvatimo listu tekstova o nekoj temi sa:

db.tekstovi\_po\_temama.find({"\_id ":naša\_tema}, { "\_id":0, "value":1})

5. Pokretanje (*setup*) Aplikacije



Da bi uspješno pokrenuli aplikaciju u Javi, potrebni su nam neki popratni instalirani programi:

* *jdk*:

https://www.oracle.com/java/technologies/javase-downloads.html

* *jre*:

https://www.java.com/en/download/

* *apache maven*:

https://maven.apache.org/download.cgi

* *apache tomcat*:

https://tomcat.apache.org/download-80.cgi

Zatim, unutar direktorija u kojem se nalazi kod aplikacije, treba pokrenuti naredbu:

mvn package

Nakon toga će se tamo pojaviti datoteka koju trebamo premjestiti:

1. za pokretanje aplikacije: u folderu /apachetomcate, unutar poddirektorija /webapps kopirati stvorenu datoteku pa pokrenuti apache tomcat naredbom iz izvršnog direktorija:

bin/startup.bat

1. aplikacija se pokreće uz pomoć internet preglednika, preko linka:

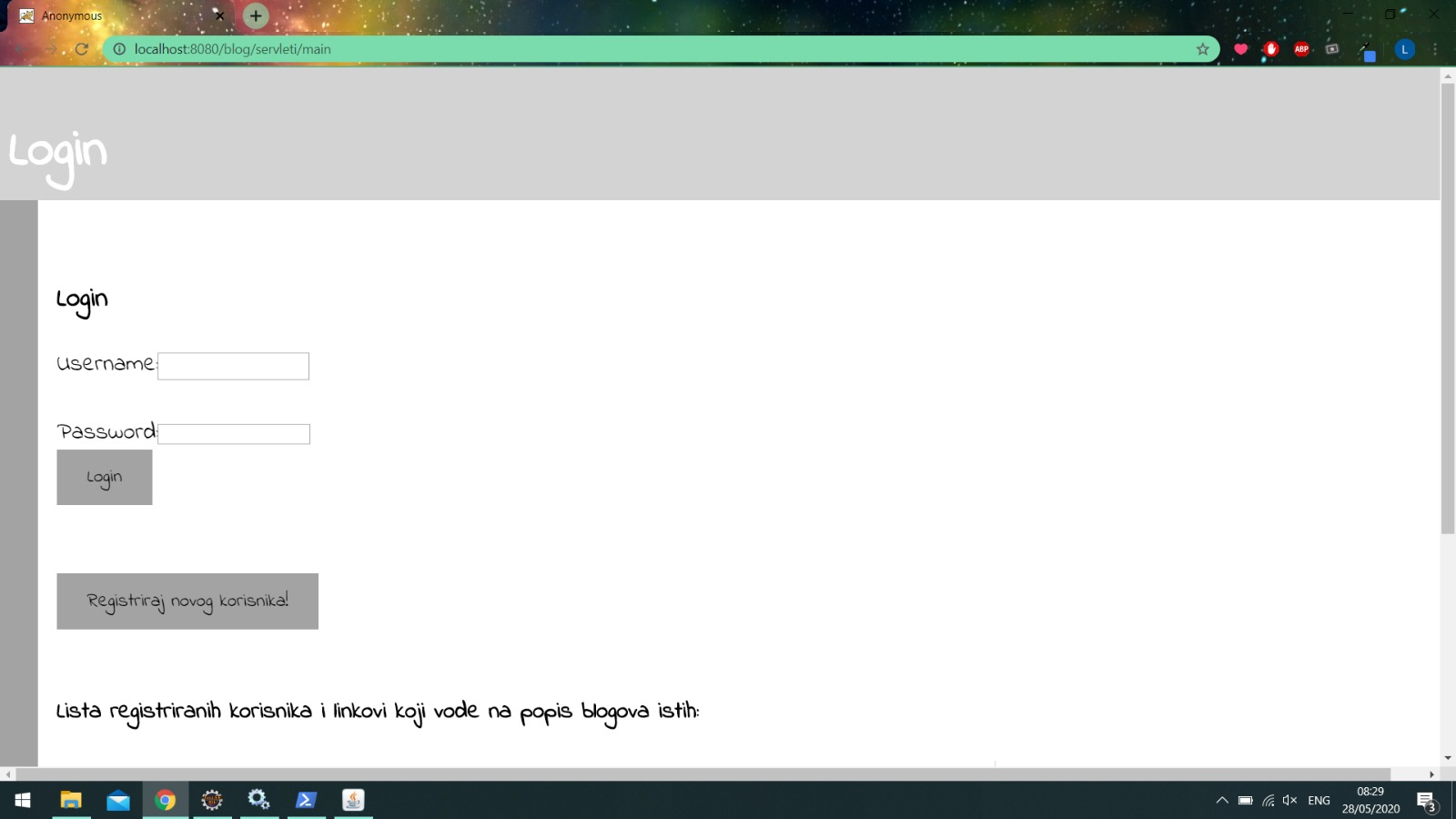
http://localhost:8080/blog/index.jsp

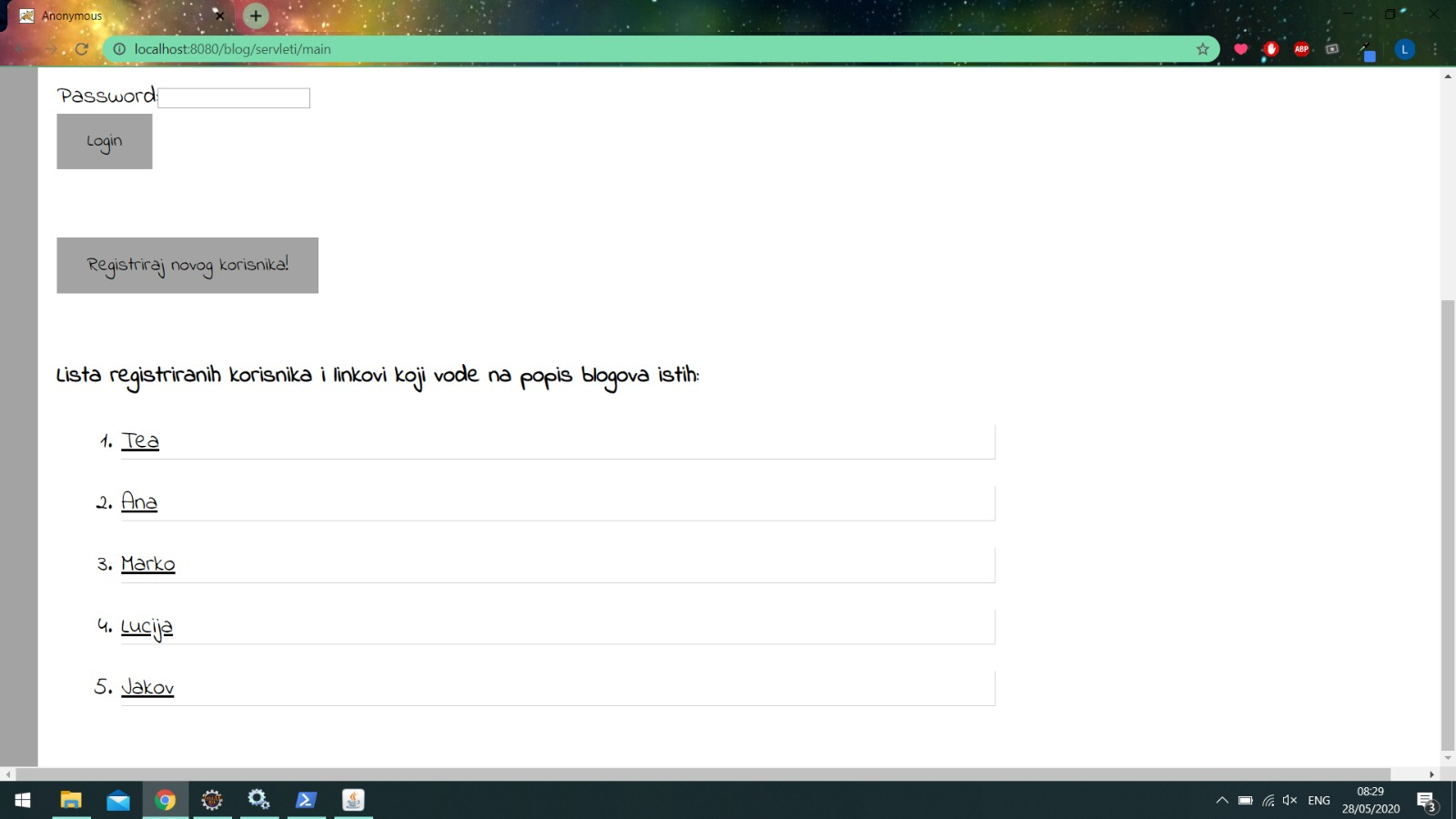
Nakon što je aplikacija završi sa radom, apache tomcat se može isključiti uz pomoć naredbe:

bin/shutdown.bat

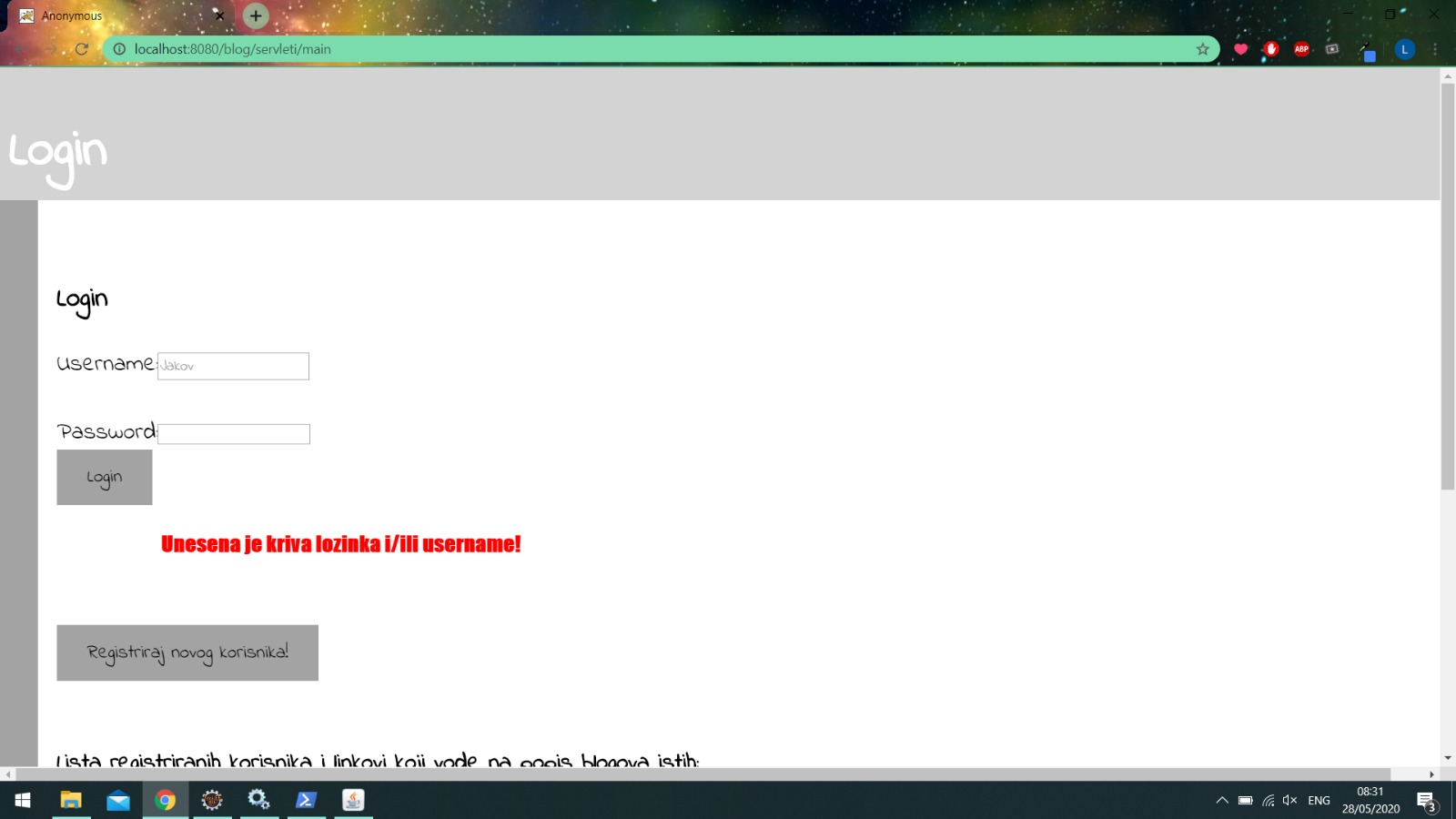
6. Izgled Aplikacije

6.1 Login form

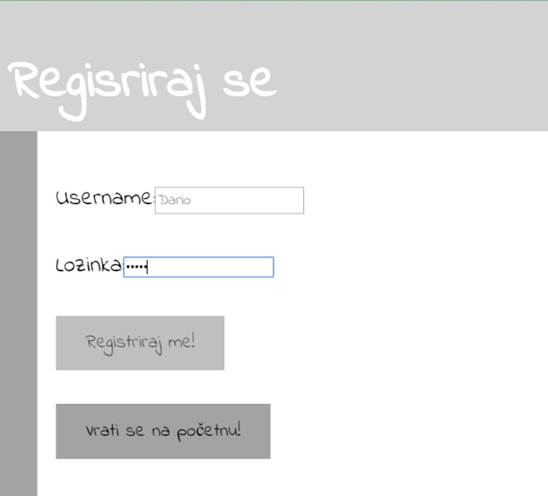
6.1.1 Log-in postojećeg korisnika



Ukoliko se unese kriva šifra za već postojećeg korisnika, ili nepostojeće ime korisnika, aplikacija javlja grešku.



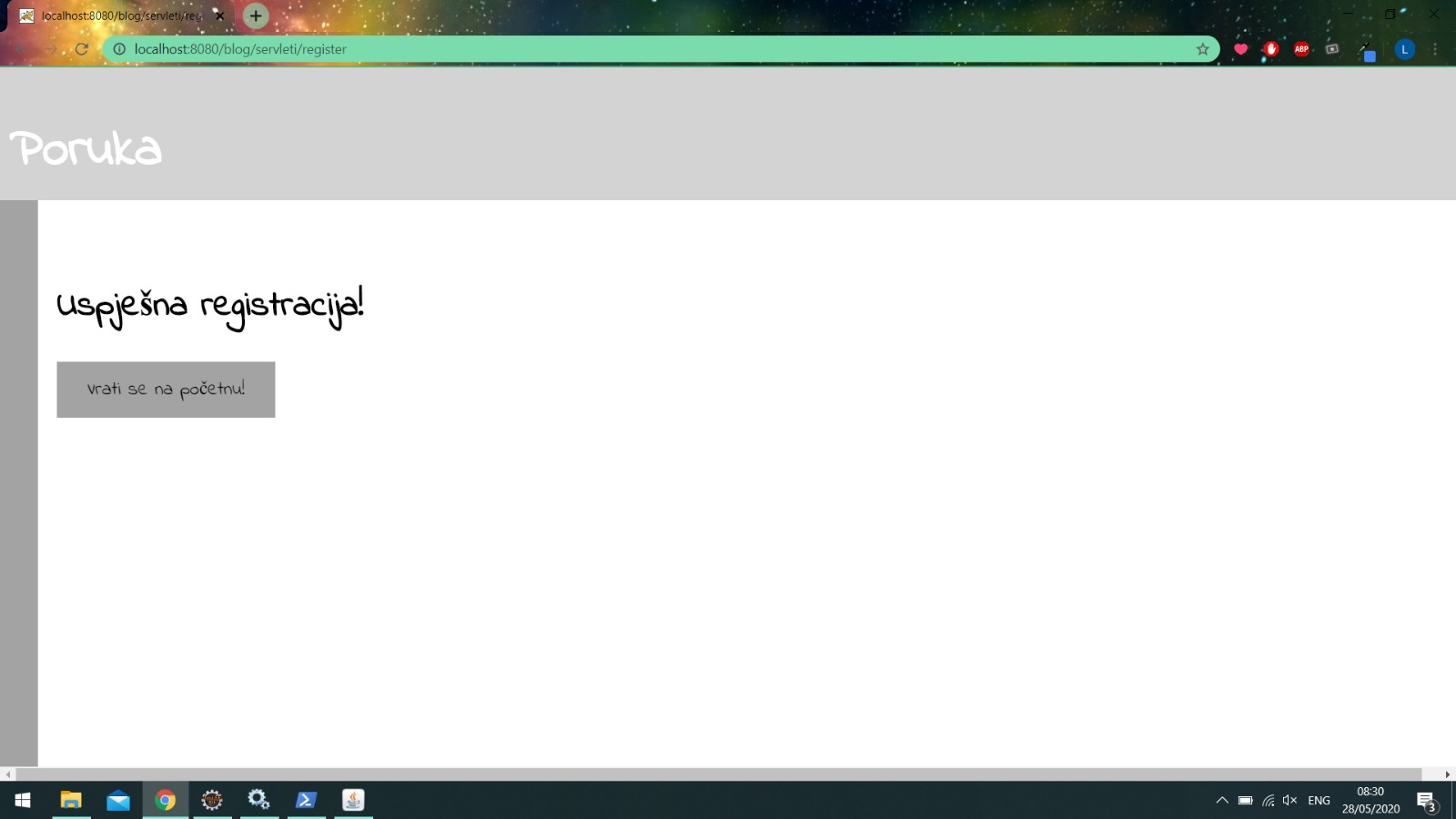
6.1.2 Registracija novog korisnika



Korisnik se registrira upisom željenog usernamea i novog passworda.

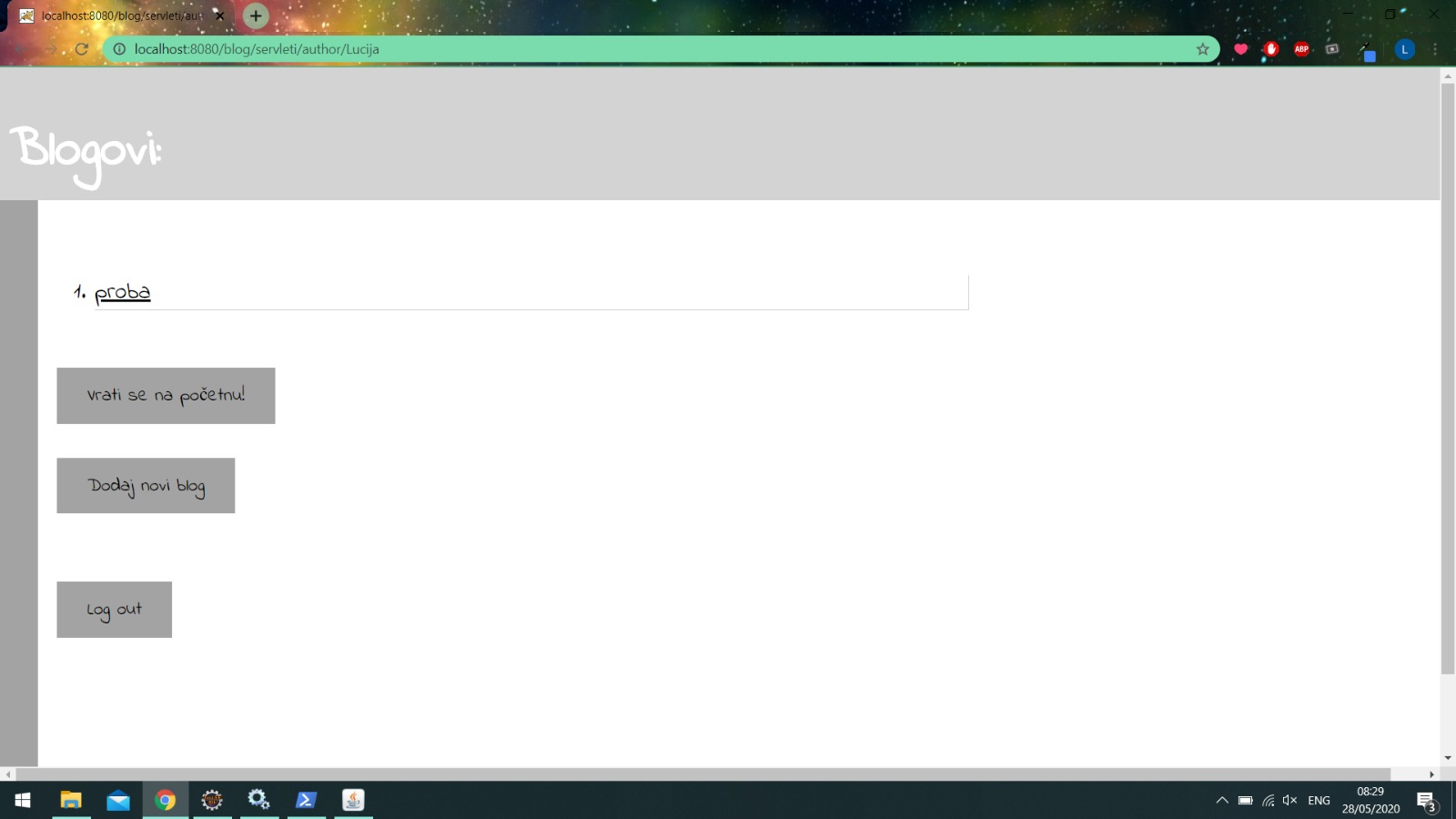
Ukoliko već postoji korisnik sa zadanim username-om, aplikacija će javiti grešku.

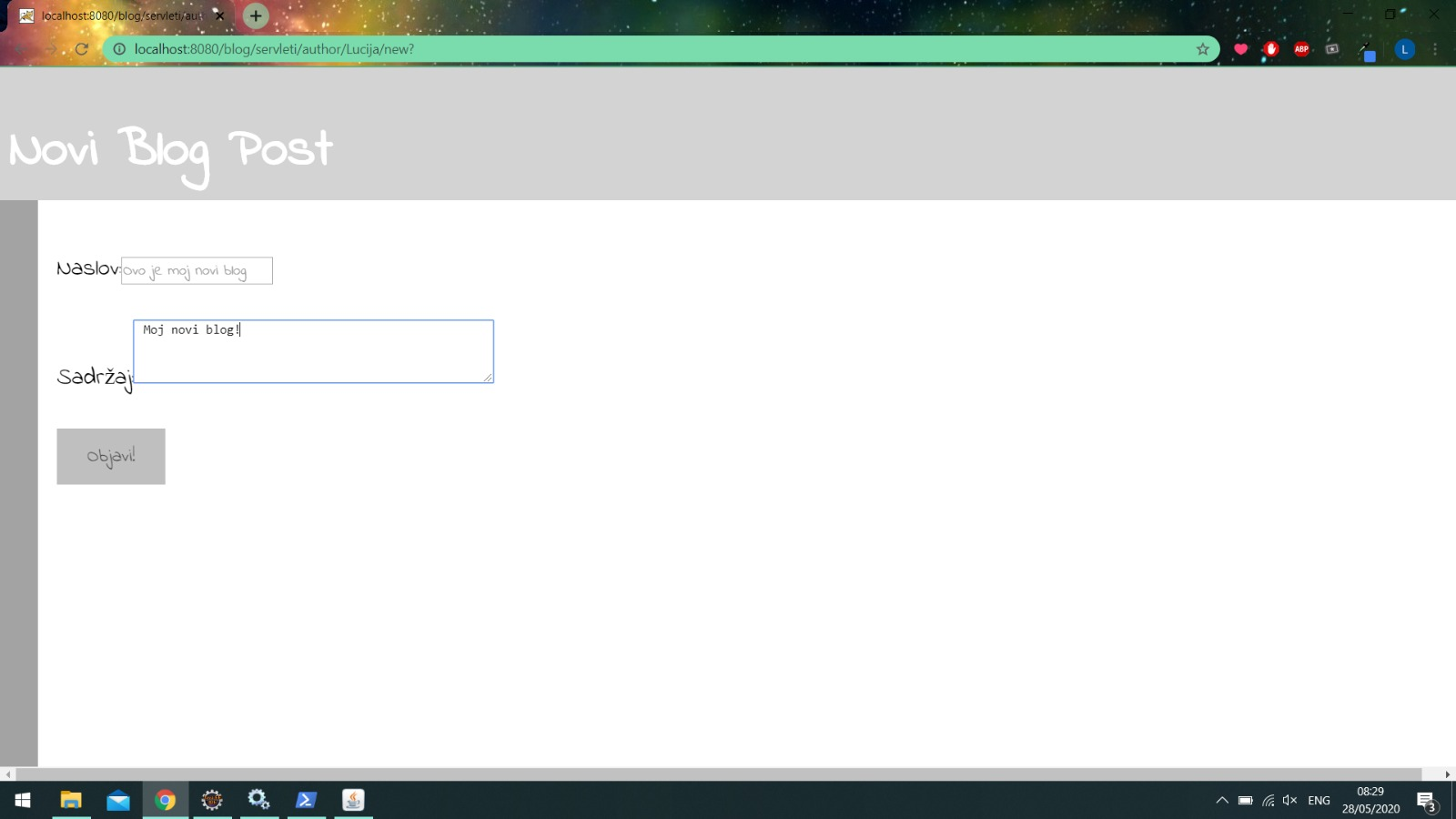
U suprotnom, uspjeh.

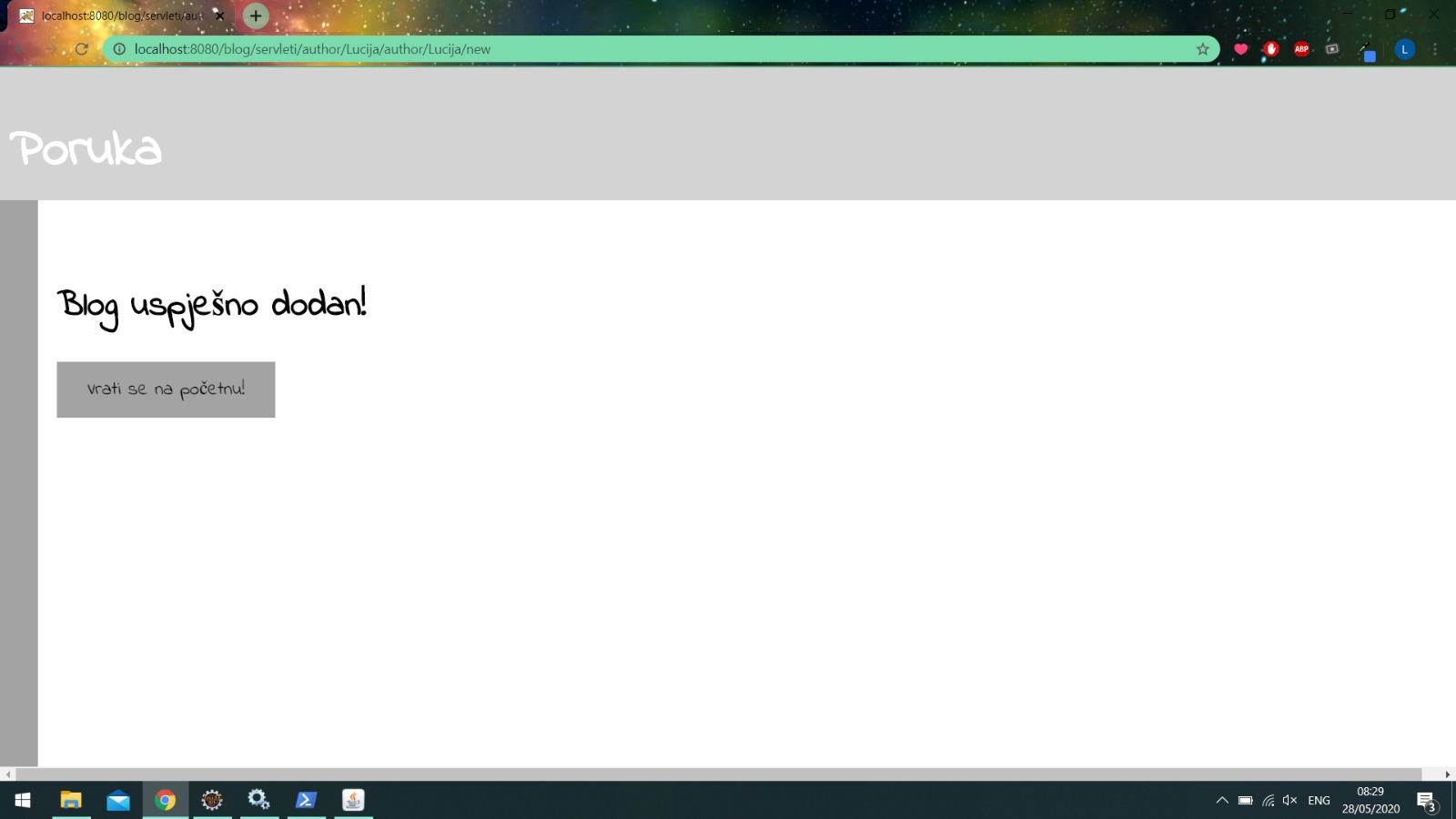


6.2 Pisanje tekstualne objave na blog-u korisnika (novi „post“)

Ukoliko smo mi registrirani korisnik, na svojoj stranici s listom blogova možemo dodati novi blog.



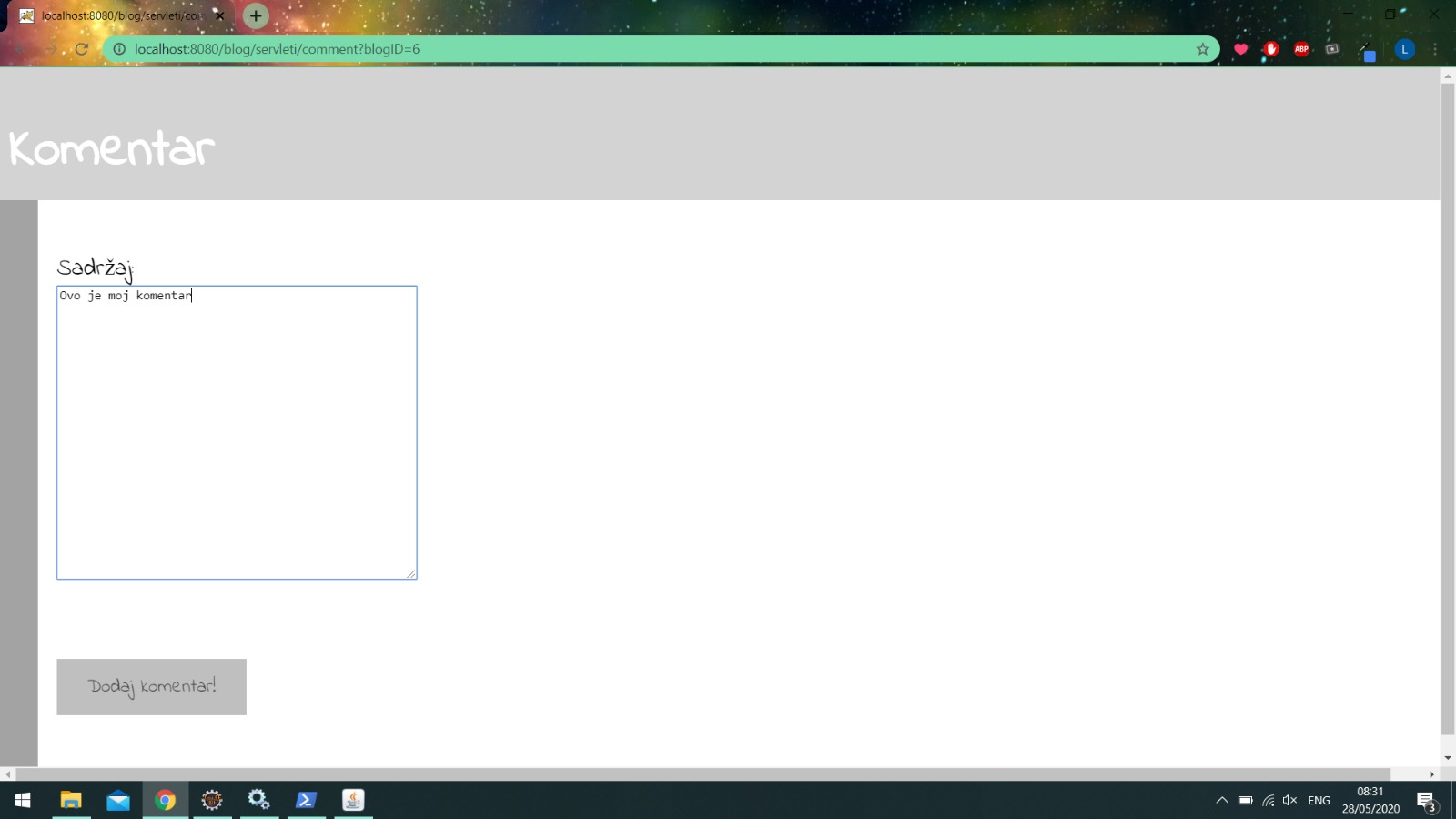


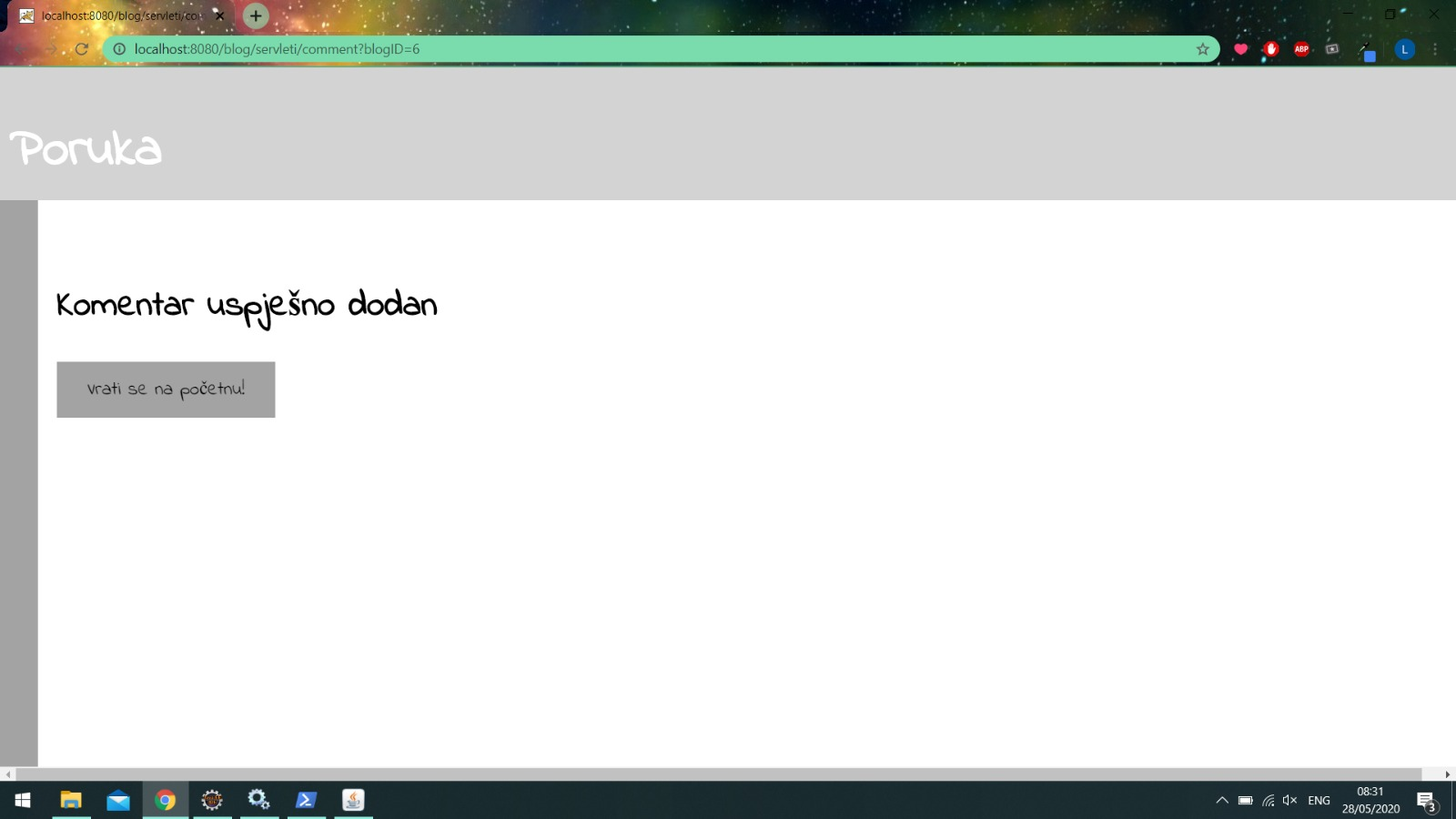


Po objavi, možemo vidjeti blog i naći ga ubuduće kroz listu blogova korisnika.

6.3 Dodavanje komentara

Na svaki blog (kao registrirani korisnik!) možemo ostaviti komentar.

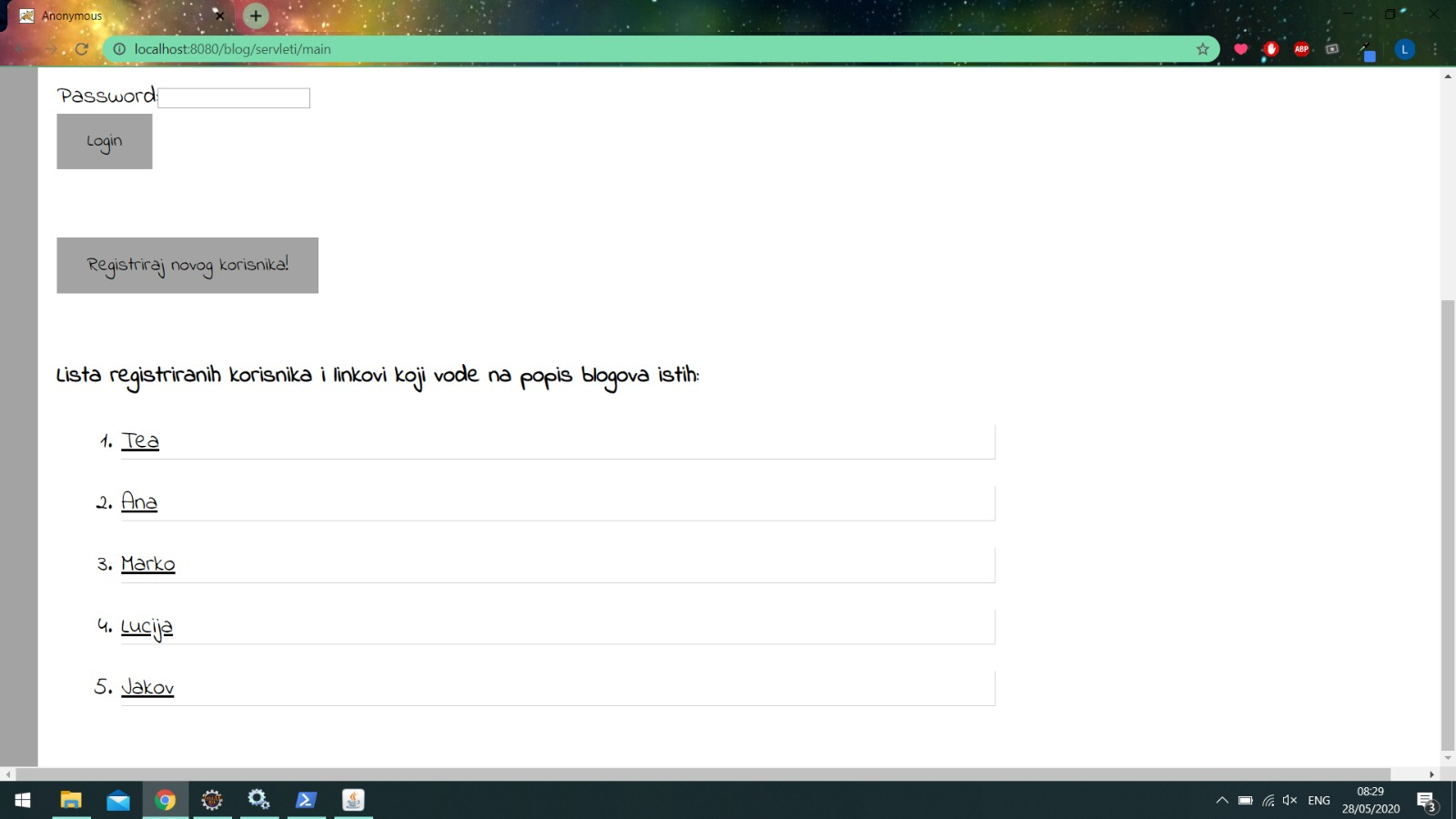




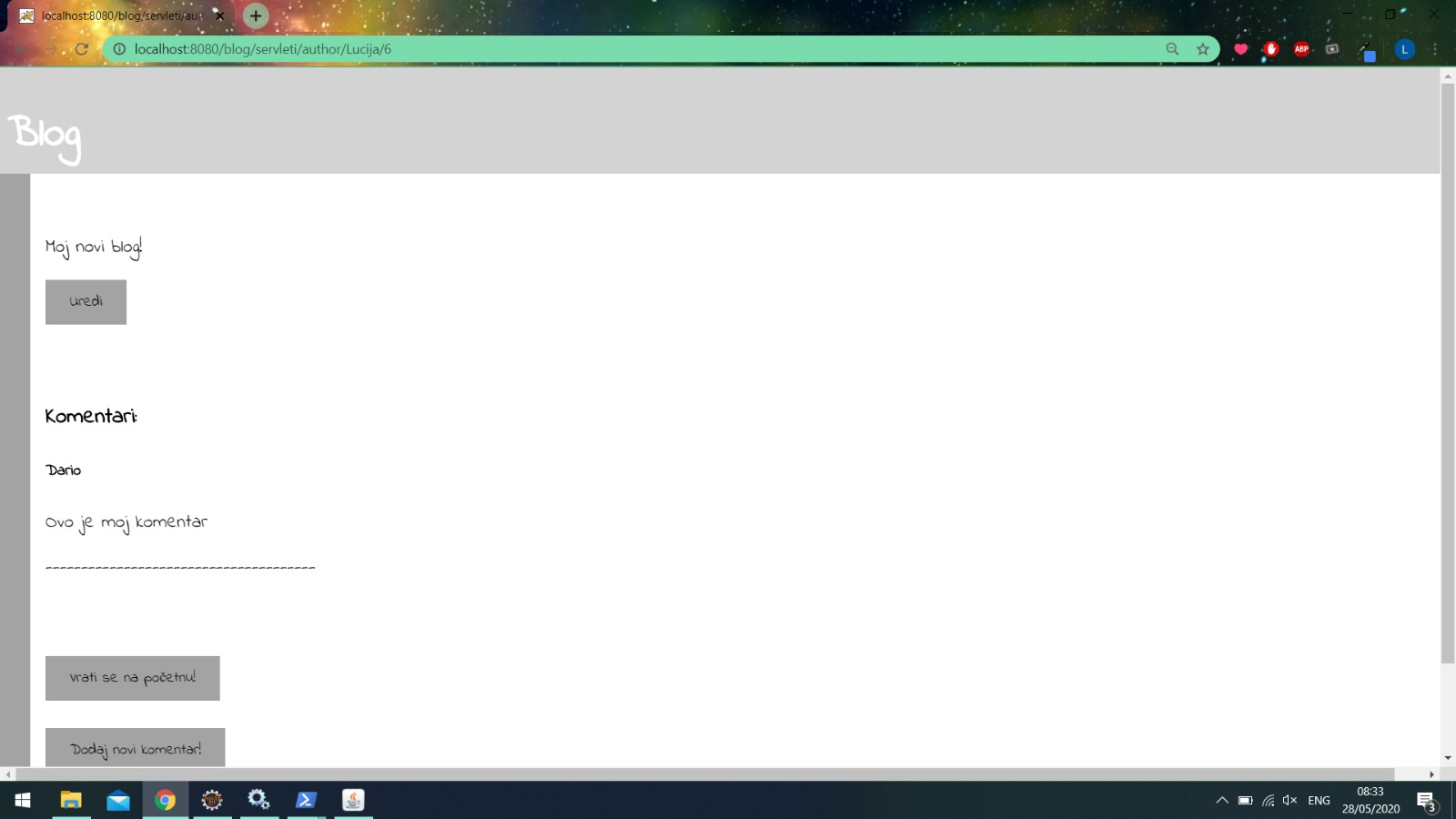
Nakon uspješnog dodavanja komentara, isti se vidi ispod teksta blog-a.

6.4 Pogled na tekst (izgled *blog*-a)

Popis blogova (po korisniku) se može vidjeti u glavnom izborniku.



Kliknemo li na nekog autora, te potom i na željenu temu bloga, možemo čitati tekst bloga, te vidjeti komentare pripadne tom blog-post-u.



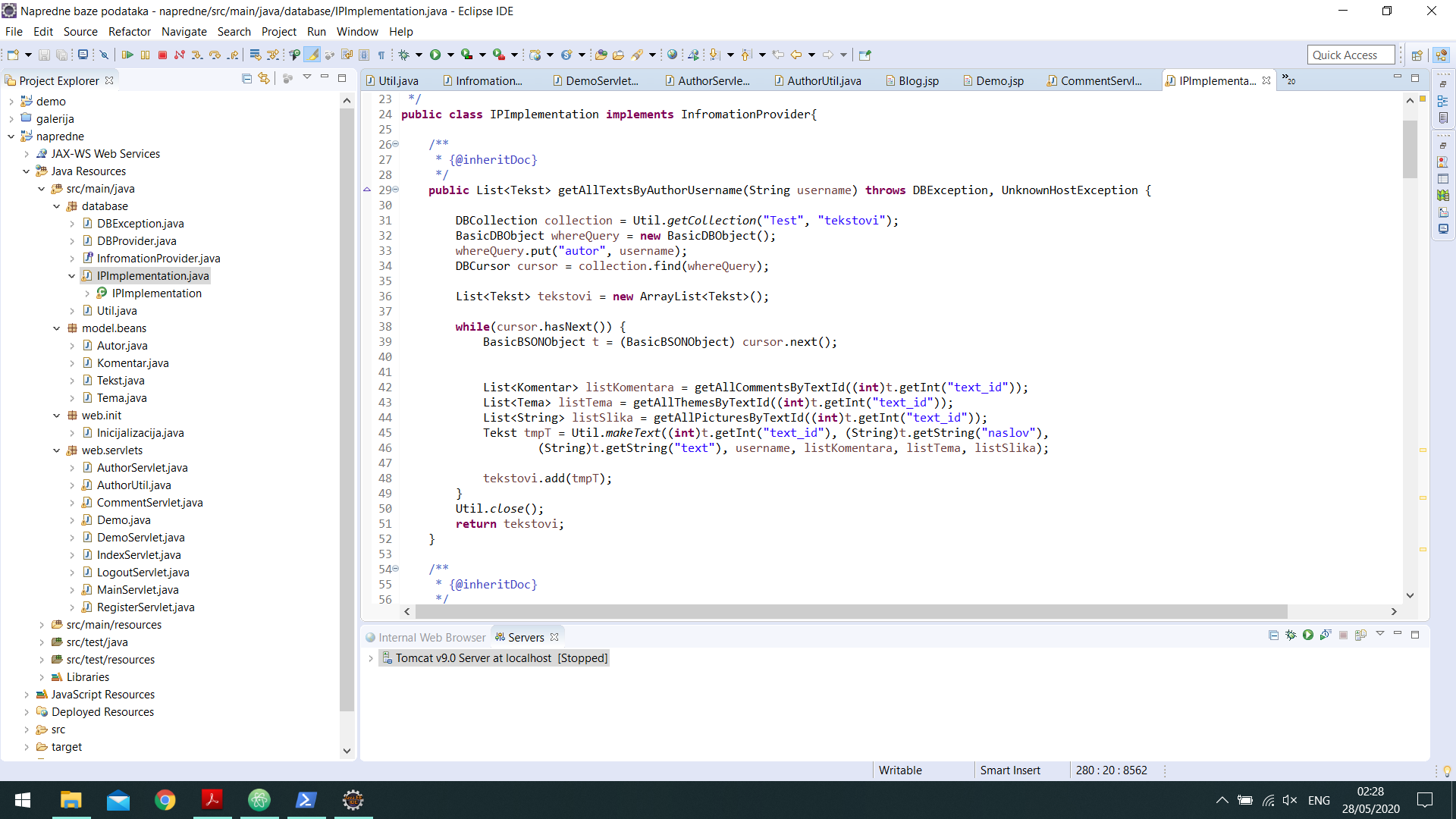
7.Kod u Javi (kod aplikacije)

Nakon što smo vidjeli izgled i „layout“ aplikacije, biti će nam jednostavnije razumjeti kod koji slijedi.

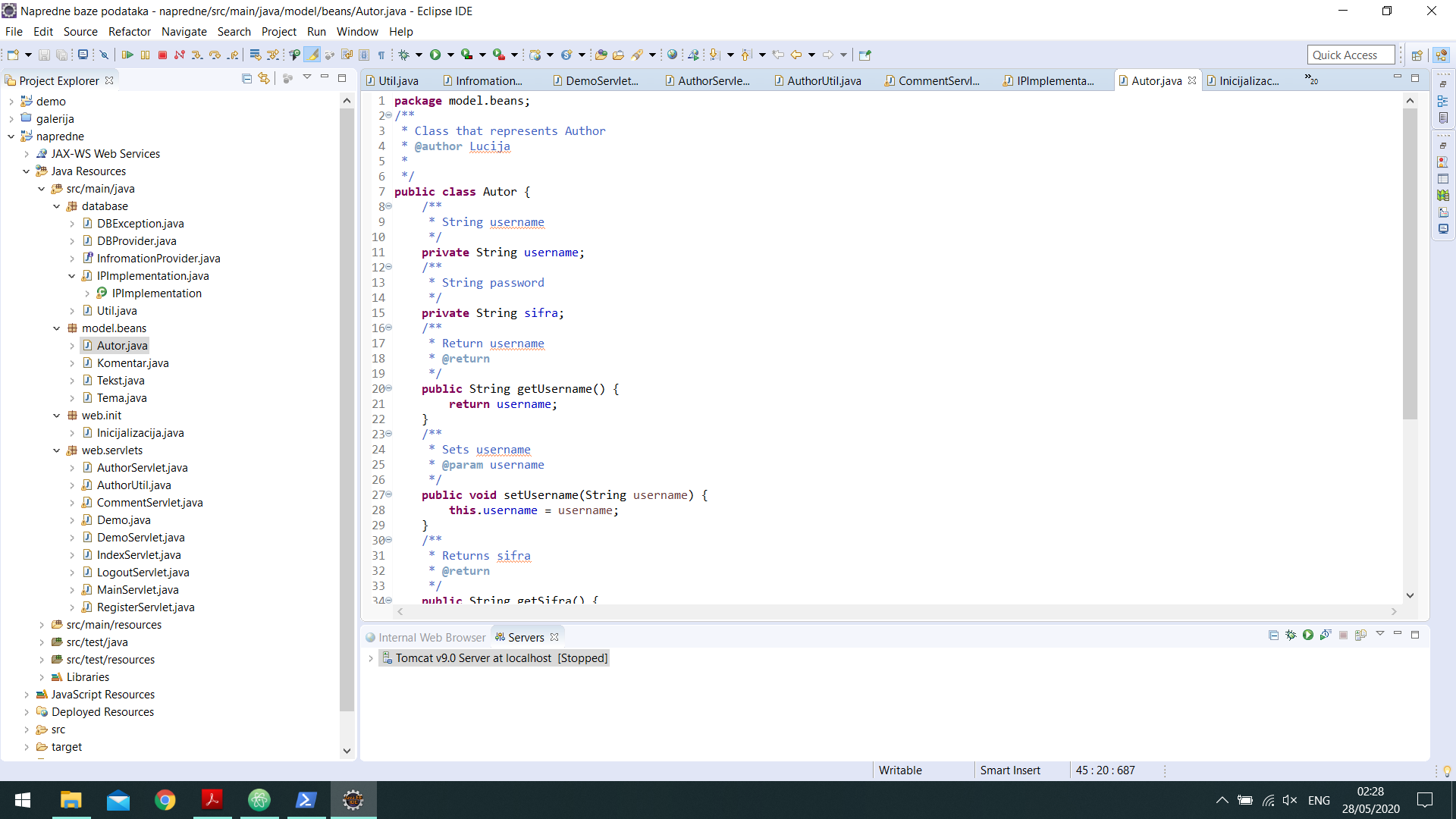
Kod je organiziran u 3 funkcionalna dijela. Jedan dio se bavi bazama podataka, jedan dio priprema podatke koji se trebaju prikazati u aplikaciji ili koje treba nekako spremiti u bazu podataka.

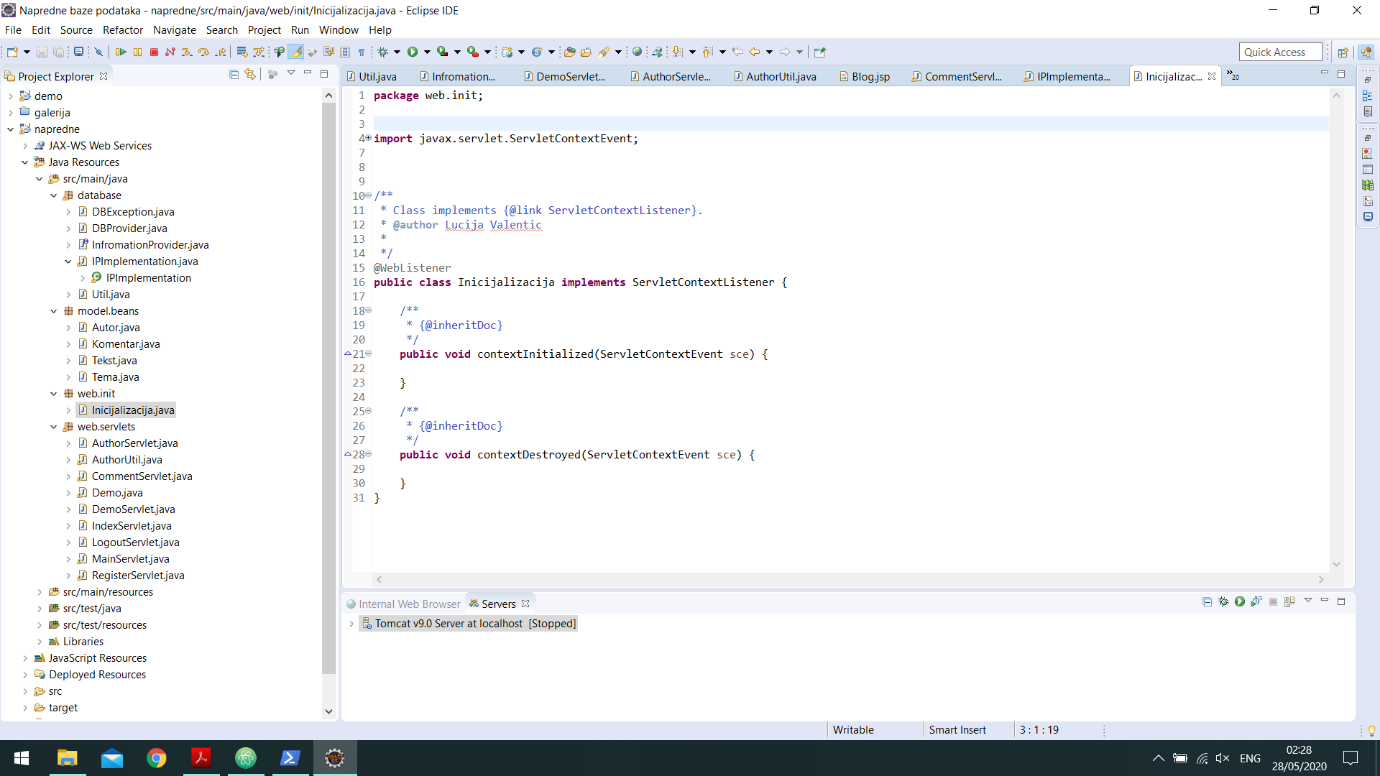
Sve web stranice same aplikacije se nalaze u posebnoj datoteci. Ostali kod je organiziran u 4 paketa, od čega se:

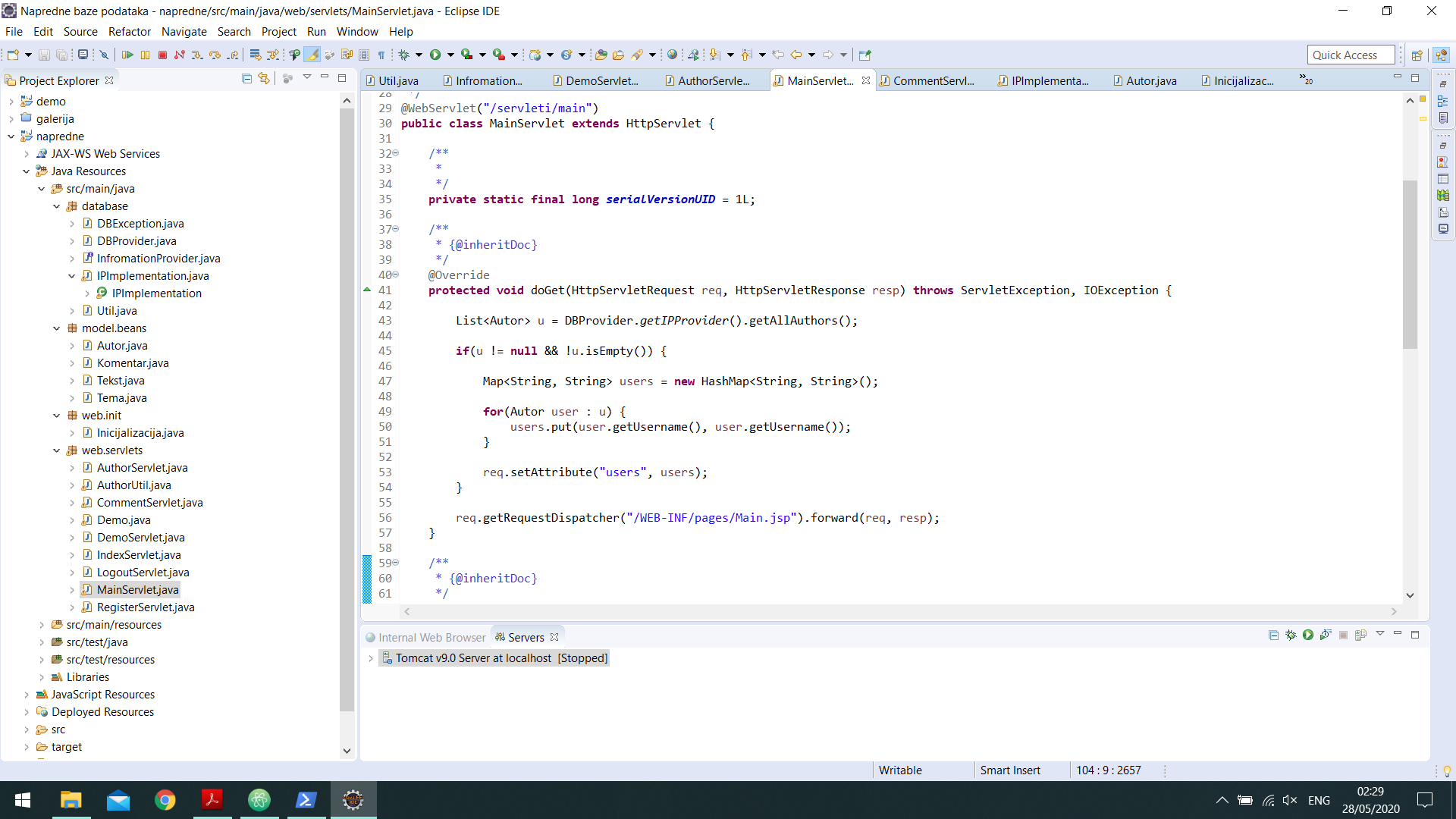
* jedan *(database)* bavi isključivo bazama podataka



* drugi *(model.beans)* drži objekte baze podataka u obliku kojeg Java prepoznaje



* treći *(web.init)* služi samo za trenutak pokretanja aplikacije
* i u četvrtom paketu *(web.servlets)* su razredi, to jest servleti koji pripremaju podatke za stranice aplikacije.



Također, prije navedeni servleti mogu komunicirati i sa stranicama i sa bazom podataka preko objekta koji je posebno napravljen za tu svrhu (koji se nalazi u paketu za baze podataka).

8. Korisničko sučelje (*HTML, CSS*)

Kod za prikaz samih web stranica, kao i njihova stilska obilježja, se nalazi u programu sa kodom, u folderu *\napredne\src\main\webapp\WEB-INF\pages.*

Dolje u nastavku je primjer isječka koda iz *Register.jsp* koji definira izgled korisničkog sučelja stranice za registraciju korisnika:

<title>

<c:choose>

<c:when test="${currentUserId == null }">

Anonymous

</c:when>

<c:otherwise>

${currentUserName }

</c:otherwise>

</c:choose>

</title>

</head>

<body>

<div class="pravokutnik"></div>

<div class="header"><h1>Regisriraj se</h1></div>

<div class="sadrzaj">

<br>

<br>

<br>

<br>

<form action="register" method="post">

Username:<input type="text" name="username">

<div class="error">

<c:if test="${errors.get('username')!=null }">

<br>

Promotrimo i stilski prikaz nekog objekta uz pomoć CSS-a u istoj datoteci, npr.

input[type="text"]

{

    font-size:16px;

    font-family: "Indie Flower";

    color: #a3a3a3;

}

8. Zaključak

Programiranje ove aplikacije je bilo novo i poučno iskustvo, budući da većina studenata nije bila upoznata sa programskim jezikom Java prije početka projekta.

Sama interakcija baze podataka i koda u Javi je bila relativno jednostavna za provedbu nakon jasnog definiranja potreba (tj. potrebnih upita) i zahtjeva na podatke.

Pri konstruiranju aplikacije je oblik modela velikim dijelom diktirala forma (tada još zamišljene) aplikacije, tako da je bilo interesantno promatrati *„top-down approach“* - ovdje u smislu - od finalnog produkta do potrebnog prikladnog modela baze podataka.

Sam oblik baze je očito i diktirala sama činjenica da MongoDB kao program za interakciju s bazama podataka nije primarno prilagođen relacijskim bazama – pa smo shodno i tome završili samo sa dvije kolekcije (tri ako brojimo kolekciju nastalu sa *MapReduce* frameworkom iz jedne od prvotnih), puno manje u odnosu na broj mogućih kategorija *podataka (slike, komentari, teme, tekstovi, autori...).*

Iako je konačni izgled aplikacije sasvim bazičan, sa ispunjenom funkcionalnošću te mogućnostima pohrane novih podataka i manipulacije starih, te novim iskustvom sa jezikom Java i prvim korištenjem MongoDB van njega samoga, uz konstrukciju prve vlastite veće baze podataka, projekt izrade blog-platforme je bio vrijedno i zanimljivo iskustvo.

9. Izvori

* <https://moodle.srce.hr/2019-2020/>
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* <https://markozupanic.hr/blogovi/>
* <https://www.oracle.com/java/technologies/javase-downloads.html>
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