6. domaća zadaća; OPRPP2

Introduction

For this homework you will integrate the structured web-application which is described in document "`10-uputa.txt`", Section 4, which is available in Ferko's repository with a JPA-based implementation of blog system. Let this new web application's name be *blog* so that it will be available using an URL such as http://localhost:8080/blog. Once you finish the application, you will prepare a ZIP archive of your eclipse project and upload it to Ferko (please note that in the document `10-uputa.txt` this aplication is named *webapp-bazaorm* so do not simply copy everything from this document but instead replace names where needed). Set project's *groupID* to `oprpp2.jmbag0000000000` (replace 0000000000 with your JMBAG), set *artefactID* to `hw06-0000000000`.

Problem 1.

As part of this problem you will implement a simple user-management functionality for your blog website. Start by creating a new web-application `/blog` which is based on previously described web-application.

Add new domain class `BlogUser` modeling a single user (place it into the same package as all other domain classes). For each blog user you should track the following properties: `id`, `firstName`, `lastName`, `nick`, `email` and `passwordHash`.

For example, some user can have `firstName="Pero"`, `lastName="Perić"`, `nick="perica"`, `email="pp@some.com"` and `passwordHash="22ffc727b1648e4ac073589d2659dec991918ec8"`. Property `passwordHash` is used for storing storing a hex-encoded hash value (calculated as SHA-1 hash) obtained from users password (you have already created a code for hashing binary data in one of your previous homeworks – search for `MessageDigest`). You are not allowed to store users' passwords in plain text into database since this would allow a database admin (and anyone who obtain the access to database) to easily see and steal users' passwords. Instead, during a user registration process you will:

1. ask a user to provide a `nick` and `password`,
2. `ep = calculate hexEncode(calcHash(password))`
3. store `ep` in database as `passwordHash`.

Also treat `nick` property as unique: no two users are allowed to have same nicks (set appropriate domain constraint; also check during the registration if user with given nickname already exists, and if it does, show user appropriate message and ask him to choose different nickname).

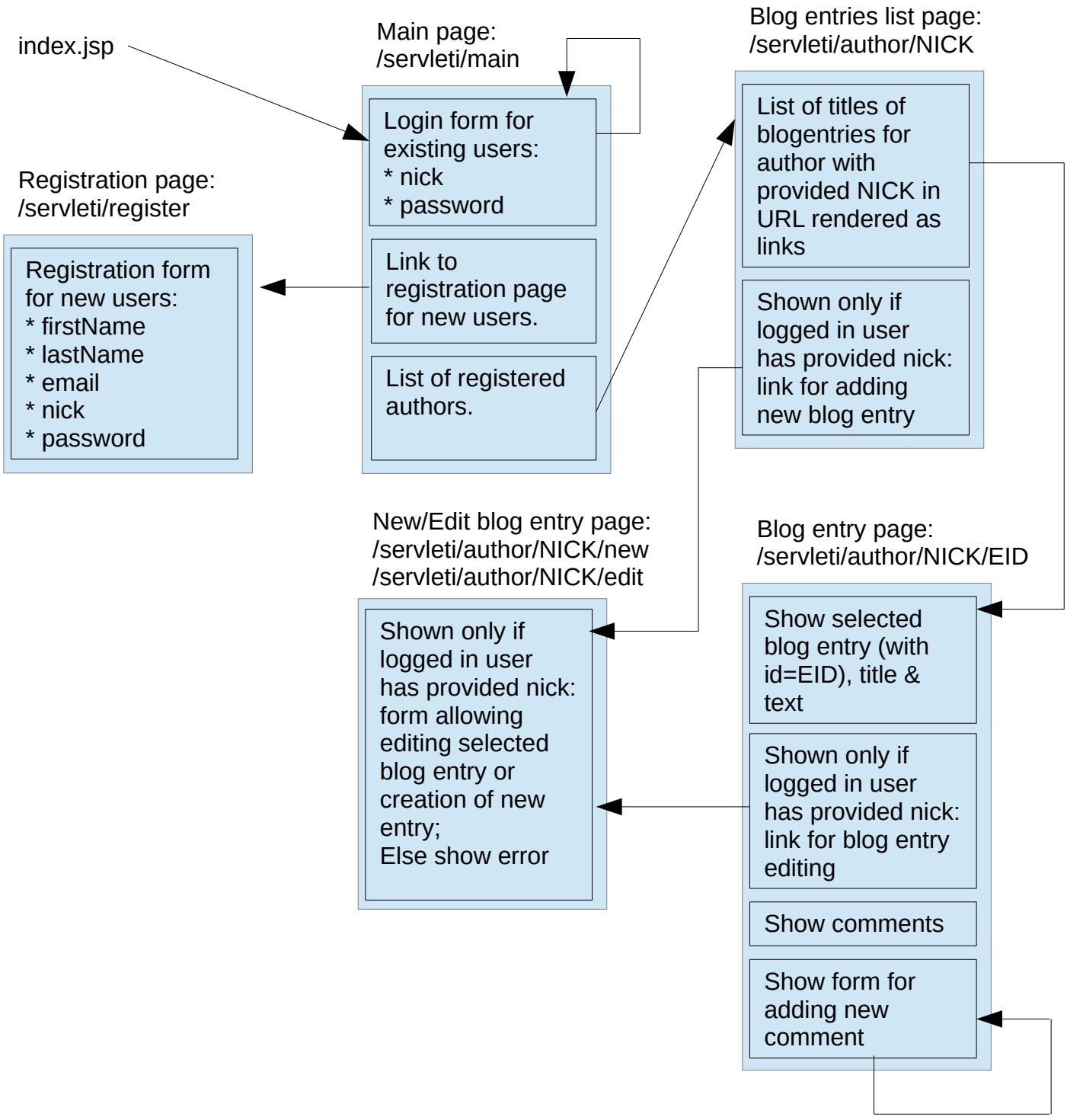
During a user's login process (handled by `/servleti/main` servlet, see diagram on the next page), you will:

1. ask user to provide `nick` and `password` **and send it via POST method**,
2. calculate `ep = calculate hexEncode(calcHash(password))`,
3. lookup user in database with provided `nick`,
4. compare stored `passwordHash` and calculated `ep` for match.

If comparison does not match, display appropriate error message, and render login form again but **without** provided password (username which the user provided should be filled in the form automatically). **If password matches existing record in database, redirect user to appropriate page so that F5 (or refresh) in browser will not resubmit authentication request - try it.**
Modify domain class `BlogEntry`: add property `creator` which will reference the `BlogUser` that created the entry. Make that relation bidirectional.

Problem 2.

You will adjust existing code and implement whats missing to obtain a web application with page-flow as given on following diagram.



You should create a servlet that will be mapped on "`/index.jsp`" and that will send to a client a redirection to page `/servleti/main` (in your web application context, of course). For example, if your application is deployed as *blog*, writing `http://localhost:8080/blog` should **produce redirection** to `http://localhost:8080/blog/servleti/main`. For redirection see: https://tomcat.apache.org/tomcat-7.0-doc/servletapi/javax/servlet/http/HttpServletResponse.html#sendRedirect(java.lang.String)

For our demo user `perica`, requesting:

http://localhost:8080/blog/servleti/author/perica

should bring a page with titles (and links) of all of his blog entries, while requesting:

http://localhost:8080/blog/servleti/author/perica/5

should bring a page with blog entry with `id=5` (assuming that the creator of that entry is indeed `perica`) – if not, produce an error.

The general idea of our application is that all users: anonymous and logged-in should see exactly the same page structure. However, logged in users also see additional functionality: adding a new blog entry on his blog page and editing his blog entries.

Anonymous users can obtain an account by filling in registration form – no restrictions should apply beside the fact that two users can not have the same nick.

In previous picture only a rough structure is presented (with some examples of URLs); all that is missing is left to you to implement as you deem appropriate (including parameters, back links, etc).

In a case where you wish to map a servlet to a partial URL (for example, to any URL that starts by `/servleti/author` regardless of which path was provided after that), you can get information on actual URL that triggered the servlet (for example, `/servleti/author/perica`, `/servleti/author/perica/5`, `/servleti/author/perica/new` etc) using `HttpServletRequest` methods `getServletPath()` and `getPathInfo()`. Take a look at these methods and what they return.

http://docs.oracle.com/javaee/6/api/javax/servlet/http/HttpServletRequest.html#getServletPath%28%29
http://docs.oracle.com/javaee/6/api/javax/servlet/http/HttpServletRequest.html#getPathInfo%28%29

Handling of the login process

Please observe that information on users is now stored in our web applications database. That means that we alone will handle authentication and authorization. This is what you should do.

When user provides nick and password, you will check them and if user is valid you will store `BlogUser.id` into current session (use, for example, key "`current.user.id`"); additionally, store current user nick, first name and last name under keys "`current.user.fn`", "`current.user.ln`" and "`current.user.nick`".

Each action that needs to check if there is logged-in user will simply check if there is "`current.user.id`" in session map. If no, we are working with anonymous user that can only browse all blogs and blog entries and add comments. If there is such key stored, we have logged-in user whose other commonly-used information can also obtained from session map.

Handling of the logout process

You should add to main page also a logout link. Starting associated action should simply invalidate current session (see `HttpServletRequest.getSession().invalidate()`) and **send back redirection** to `/servleti/main` (just as servlet mapped to `/index.jsp` did).

http://docs.oracle.com/javaee/6/api/javax/servlet/http/HttpServletRequest.html
http://docs.oracle.com/javaee/6/api/javax/servlet/http/HttpSession.html

Additional note:

In header of each rendered page (not in `<head>...</head>` of HTML itself but in "visual" header – top of rendered page) please write first name and last name of loged-in user or "not loged in", and provide link for logout (if user is loged-in).

Any graphical design (e.g. CSS styles) is optional. Also, you don't have to implement editing of users profile (e.g. allowing user to change fist name, last name, email or password).

Finally, anything that is not strictly prescribed in this document you are free to solve as you deem appropriate. However, please note that you are expected to create a high-quality code and an application that is layered and conceptually clear, just as we explained on lectures and in previous homework.

Also, it is expected that by default, `persistence.xml` is configured to use:

- **Url:** jdbc:derby://localhost:1527/blogBaza
- **Username:** blogDBAdmin
- **Password:** blogDBPassword

Važno. Smijete se konzultirati s Vašim kolegama i razmijenjivati ideje od trenutka kada ste pročitali uputu pa sve do trenutka kada krenete rješavati zadatake. Od trenutka kada napišete prvu liniju koda rješenja daljnja komunikacija je zabranjena. Naravno, u slučaju bilo kakvih nejasnoća, mene uvijek možete kontaktirati.

Dokumentirajte Vaš kod. Projekt i sav izvorni kod mora biti pohranjen uporabom kodne stranice UTF-8.

Kada ste završili sa zadaćom, zapakirajte projekt u ZIP-arhivu imena `hw06-0000000000.zip` (zamijenite nule Vašim stvarnim JMBAG-om). U ZIP-arhivu **ne pakirate** datoteke koje nastaju prevođenjem (tipa: direktorij `target`).

Arhivu na Ferka uploadajte **prije** isteka roka. Ako ne stignete predati rješenje do tog roka, na zasebnom mjestu u Ferku bit će omogućena zakašnjela predaja koja će se prihvaćati još najviše 72 sata nakon izvornog roka (uvjeti su specificirani u početnoj prezentaciji).

Nemojte zaboraviti zaključati Vaš upload jer ga inače nećemo prihvatiti.