

Lab#2

List of students using DAO

In this laboratory work I have implemented Data Access Object pattern to create web-application where user can review list of students and also manage it: add new students, delete, update, and find them by id or name.

I store table STUDENTS1 in the MySQL database. For connecting and changing database I have *Queries class*. There are static functions for manipulating data:

- **static void** insertUser(String firstName, String lastName) – adding new fields in the table where STUDENT_ID is auto increment, last and first name are input;
- **static** ArrayList<User> findAll() – returns ArrayList of all students that are in the database;
- **static void** updateUser(String id, String firstName, String lastName) – according *id* function set new values for first and last name of student;
- **static void** deleteUser(String id) – using input id function finds needed student and deletes him from the table;
- **static** User findById(String id) – using id function finds data about certain student, and returns appropriate user;
- **static** Vector<User> findByName(String name, String column) – function finds student by the column: last or first name, and returns appropriate student(user);

Here I have following statements to connect with database:

```
Class.forName("com.mysql.jdbc.Driver");
conn = DriverManager.getConnection(Main.DB_URL, Main.USER, Main.PASS);
```

and to manage data I have SQL statements as

```
String sql = "insert into students1 (first_name, last_name) values ('"+firstName+"', '"+lastName+"')";
```

As a *model* I have User class. Its objects have id, last name and first name.

For good representation I have used Transform view and Two Step view patterns. So *Transform class* have next functions:

```
public static String viewStudents(User user) – returns html code for one student data;
```

```
static String viewForUpdating(String id, String firstName, String lastName) – returns view for updating page;
```

```
static String viewForDeleting(String id) – returns view for deleting page;
```

```
static String listOfStudents() – returns view for list of all students of database;
```

In the Main class runs HttpServer.

Thus Data Access Object pattern than works independently, and java code is not attached to SQL code.

User interface:

- [List of students](#)
- [Find student](#)
- [Registration](#)

null

Personal information:

ID: 1
First Name: Svetlana
Last Name: Kirillova

Update student:

ID:

ID:
First name:
Last name:

null

Personal information:

ID: 3
First Name: Ivanov
Last Name: Ivan

Update student:

ID:

localhost:8000/find.html

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- [List of students](#)
- [Find student](#)
- [Registration](#)

null

Find student by id:

ID:

Find student by last name:

Last Name:

Find student by first name:

First Name:

null

- [List of students](#)
- [Find student](#)
- [Registration](#)

null

Please fill in all fields

First Name
Last name

Data transaction:

