Database Course Work 3: Individual Report

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Group Member	Contribution (%)
Durgesh Kumar Moolchand Pareva	33.3
Liam Wardle	33.3
Jack Williams	33.3

This Coursework was really interesting, we started off very well initially but could not complete all the three tasks as we had expected because I got down with chicken pox, which meant no work for almost a week. But I am happy with the way our team managed to get most of the functions working.

Initially I took the lead in the project and designed the following:

a. Inserted data into various Forum, Topic, Post and Person Tables.
b. Designed the core code for communication of java code with the database using JDBC.
c. Added three functions for getUsers, getPersonView and getSimpleForums
d. All this done using preparedStatments for efficiency and protection from SQL injection.

Based on this other functions were written and tweaked.

Later managed to add Input Validator class which checks for right input type while inserting data into person table (quotes, space and dots are avoided). However it has not been used for forums/topics/posts as someone may want to enter these values there.

Further created functions for createPerson and createForums.
We saw each other's work, tweaked a bit or gave suggestions to one another and implemented it successfully using github repository services.

I really liked working with my team (Jack and Liam) and would look forward to work with them in future as well.

Which tasks were particularly easy/hard or interesting/boring?

Hard: Getting to work around with how JDBC works with Sqlite along with keeping in my mind it should be SQL injection proofing (using prepared statements and few more classes created for input validation of person)

Easy: Once the JDBC connectivity was set, Getting views were comparatively easy as you only had to execute queries on database and store result in map and show as Result.success(), however inserting data into table wasn't too difficult as well as we had to executeUpdate this time.

What did you learn during this coursework?
Learnings:

- Working with JDBC library (Integration of Java and Sqlite).
    - executeQuery to fetch data
    - executeUpdate to Insert Data
    - ? and setString with SQL prepared Statement to make sure of avoiding SQL injection.
    - Using prepared Statement with in try and catch to avoid closing down the statements individually.
- Learnt of ways to avoid SQL Injection (user prepared Statement and wrote class input validator).
- Understood structure of web development and interconnection between Server side, free maker java templates, java (api's, handlers, views etc.), sqlite3 database and JDBC.
- Group work, learnt Time Stamping from Liam (Group mate).

What is your opinion of JDBC now that you have worked with it for a while? If you were designing your own database API what would you de1nitely do the same, or de1nitely do differently?

I know java and sqlite3 but considering my limited knowledge on the subject of how the java files are connected to a web server, I can't think of any better way than the way provided probably because this is the only way I have seen and learnt.

To me all the packages seemed at right places:

Web : Event Handler and Serve
Util : Parameter related files
APi : All the APIs and Result class
Cwk3 : All the newly created files that make use of Apis.

In future if I make any java based web application I am sure to use the structure provided in this coursework though I might try some other free template or create my own.

Anything else you would like to mention (relating to the coursework).

I think the coursework was good but it would have been better if some guidance was given on how to use java code to fetch basic query from the database using JDBC as I spent almost two days to figure out how to use it. Nonetheless it was a good experience and in the end I would say I learnt how the whole web environment is developed using Server side, free maker java templates, java (api's, handlers, views etc.), sqlite3 database and JDBC.

Also I would like to mention that database is one of the few subjects I never thought I would like so much, I learnt lot of things and I feel myself confident to talk about databases now. Had no idea before this course that databases are important as they are used almost everywhere from mobile applications to big data companies.