COP 290 Assignment 0

COP 290

Assignment 0 : Team Registration

**(8th January to 20th January)**

All the assignments of COP290 must be done in a team of 2 or 3 students. In *Assignment 0*, you will develop an Android application that will register your team information with us.  We have developed a server backend that will accept the team information and store this information in our database. The team information includes the following fields:

* Team name
* Entry number of team member 1
* Name of team member 1
* Entry number of team member 2
* Name of team member 2
* Entry number of team member 3 (optional)
* Name of team member 3 (optional)

Your front end could look like this:

However, we allow you entire freedom to be creative with the front end of the application. The only constraint is that the information entry should not be ambiguous and it should display appropriate messages in case of an error.

**Implementation details:**

Our server is hosted at this URL: [http://agni.iitd.ernet.in/cop290/assign0/register/](https://www.google.com/url?q=http://agni.iitd.ernet.in/cop290/assign0/register/&sa=D&usg=AFQjCNEQNiplQIjbV3k3w2p8_9EV97RYTg). Note that the server is using a *HTTP*protocol.

“The Hypertext Transfer Protocol (HTTP) is designed to enable communications between clients and servers. HTTP works as a request-response protocol between a client and server. The client can be a web browser or an Android application, and the server can be an application on a computer that hosts a web site.

Example: A client (browser or an android application) submits an HTTP request to the server; then the server returns a response to the client. The response contains status information about the request and may also contain the requested content.”

There are numerous methods for the client to send a request to the server, and the server to respond to a client. In this assignment, the client will use the *POST* method to submit a request and the server will send the response in *JSON format*to respond to the client request.

* Here is the format of the *POST*request that our server is expecting:

*{*

*“teamname” : “<value>”*

*“entry1” : ”<value>”*

*“name1” : ”<value>”*

*“entry2” : ”<value>”*

*“name2” : ”<value>”*

*“entry3” : ”<value>”*

*“name3” : ”<value>”*

*}*

* The *JSON*response of the server will contain two keys :  *RESPONSE\_SUCCESS* and*RESPONSE\_MESSAGE*. Here are the possible interpretations of the reply:
* *{"RESPONSE\_MESSAGE": "Data not posted!", "RESPONSE\_SUCCESS": 0}* : Means the required fields are missing and therefore registration is unsuccessful.
* *{"RESPONSE\_MESSAGE": "Registration completed", "RESPONSE\_SUCCESS": 1}* : Means registration is successful
* *{"RESPONSE\_MESSAGE": "User Already Registered", "RESPONSE\_SUCCESS": 0}* : Means one or more users with given details have already registered.

You can use any library to develop this application. However, we would recommend the usage of the Volley (Android built in library to send JSON/String/etc  Request and response) library for this assignment. Kindly refer to this link for information regarding the Volley library:[https://developer.android.com/training/volley/index.html](https://www.google.com/url?q=https://developer.android.com/training/volley/index.html&sa=D&usg=AFQjCNEeOlG8cFzqONd-TAJvWU-fm_ZNug).

**Grading:**

The grading for each assignment will be done on a scale of 100. For this assignment, the breakup of the grade is:

1. Design document [20 marks]: You should submit the design of the application in the latex format. The design should highlight the basic user interface, the high level functions used in the code, and the possible error scenarios that the application handles.
2. Basic code [40 marks]: This should contain the source code of your application.
3. Software practices
4. Code indentation [5 marks]: A badly indented code is difficult to maintain as well as debug. Use a proper editor to write your code.
5. Commenting [5 marks]: We expect at least one meaningful comment describing each function and each source file.
6. Modularity [5 marks]: All the big modules of the code should be maintained in separate source files. For example, if you are developing a Stack data structure using a Linked list, you are focussing on two separate modules; the stack and the linked list. This should be maintained in two different files.
7. Version control system [5 marks]: Create a repository to maintain your code. We advise you to use either of this two options:*bitbucket.org*, and *github.com*. Use this repository to exchange code between team partners, and to create multiple revisions of the code. At the time of demo, we will check the commits of all the team members, and if we found that a team member is not contributing to the submission, he/she will receive 0 marks for the assignment.
8. Usability of the application [20 marks]: If the application is easy to use and has a nice interface, you will get 20 marks.

**Submission:**

You should submit the assignment on Moodle. The assignment should be bundled in a zip file whose name is *entryno1\_entryno2\_entryno3.zip*. The zip must contain three folders:

1. *src:* This contains the entire source of your Android application
2. *apk:* This contains the apk file which will run on the mobile
3. *doc:* This contains a file main.tex that contains the design of the application.

If your submission does not adhere to the given submission format, you will receive a penalty of 10 marks.

At the time of demo, you should bring your laptop and an Android based mobile on which this application can run. We will use your Moodle submission to create an apk file and we will evaluate your assignment for this apk file.

**Academic Integrity:**All the submissions will be checked for plagiarism. If a student group is found to be copying code from other group or a third party source, all the concerned students (including the students who made their code available to other groups) will get ‘F’ grade and a disciplinary action will be initiated against them. You can use the code obtained from Android examples on the Internet; however, while doing so, you must clearly mention the source of the code in comments.

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