

COP290: User Registration App

Prabhu Prasad Panda (2013ME10859)

Sauhard Gupta (2013ME10117)

Yash Kumar Bansal (2013ME10742)

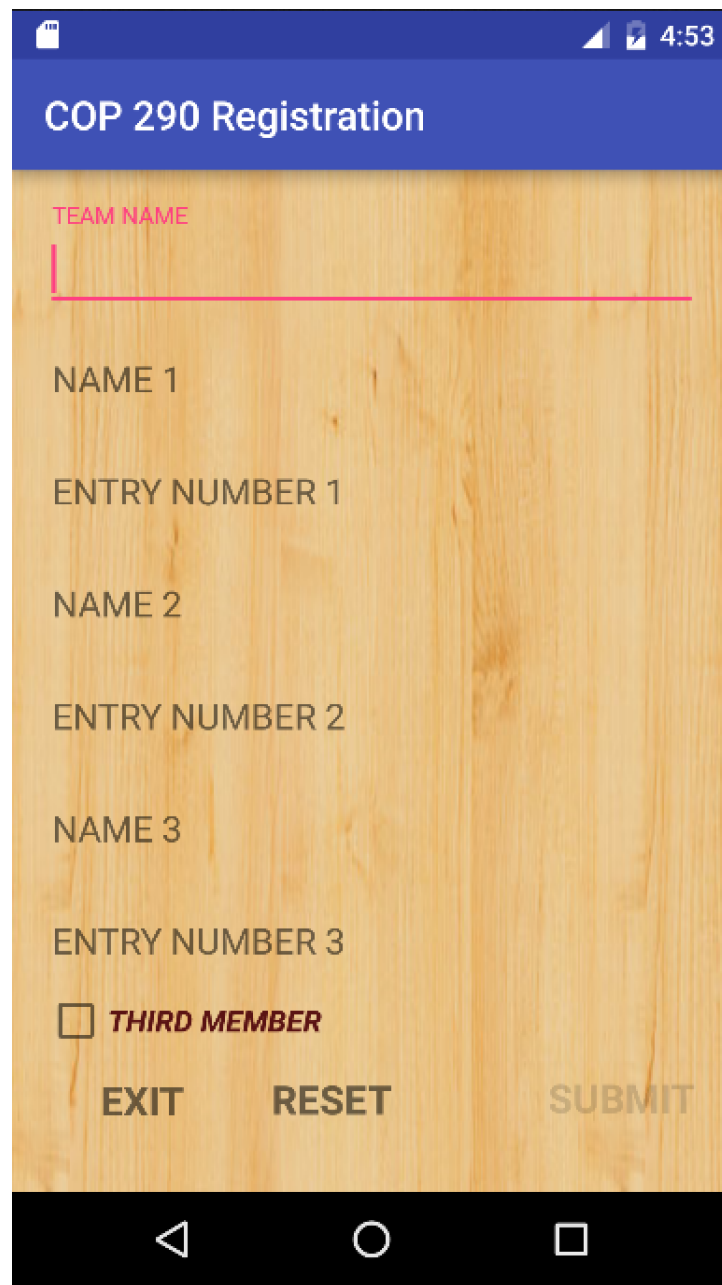
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The **COP Registration** App registers Team information. For User comfort the background is kept light and the text fields are made large to ensure an easy viewing experience . It guides the User through the various steps interactively and thus providing a user friendly interface. It makes the user enter the following information:-

1. Team name
2. Entry number of team member 1
3. Name of team member 1
4. Entry number of team member 2
5. Name of team member 2
6. Entry number of team member 3 (optional)
7. Name of team member 3 (optional)

This information is then authenticated for errors after which it is sent to a backend server which accepts and stores it in the database.

1 User Interface



The image shows a mobile application interface for "COP 290 Registration". The app has a blue header bar with the title "COP 290 Registration". The main content area has a light wood-grain background. It contains a pink input field for "TEAM NAME" with a pink label above it. Below this are three sets of labels for "NAME 1", "ENTRY NUMBER 1", "NAME 2", "ENTRY NUMBER 2", "NAME 3", and "ENTRY NUMBER 3". At the bottom of the form is a checkbox labeled "THIRD MEMBER". At the very bottom are three buttons: "EXIT", "RESET", and "SUBMIT". The status bar at the top shows a signal icon, a battery icon, and the time "4:53". The Android navigation bar is visible at the bottom.

4:53

COP 290 Registration

TEAM NAME

NAME 1

ENTRY NUMBER 1

NAME 2

ENTRY NUMBER 2

NAME 3

ENTRY NUMBER 3

☐ *THIRD MEMBER*

EXIT RESET SUBMIT

Figure 1: Main Screen



Figure 2: LOGO

- On opening the application the Main Screen (Figure 1), will be visible to the User. The screen contains the following fields:-
 1. **TEAM NAME:** This is the Text Field where the user enters the *TEAM NAME*.
 2. **NAME 1:** This is the Text Field where the user enters the *NAME OF FIRST MEMBER*. It is disabled initially.
 3. **ENTRY NUMBER 1:** This is the Text Field where the user enters the *ENTRY NUMBER OF FIRST MEMBER*. It is disabled initially.
 4. **NAME 2:** This is the Text Field where the user enters the *NAME OF SECOND MEMBER*. It is disabled initially.
 5. **ENTRY NUMBER 2:** This is the Text Field where the user enters the *ENTRY NUMBER OF SECOND MEMBER*. It is disabled initially.
 6. **NAME 3:** This is the Text Field where the user enters the *NAME OF THIRD MEMBER*. It is disabled initially.
 7. **ENTRY NUMBER 3:** This is the Text Field where the user enters the *ENTRY NUMBER OF THIRD MEMBER*. It is disabled initially.
 8. **CHECK BOX:** This is checked if the User wants to enter third member information.
 9. **SUBMIT:** On clicking this button the User information is *Submitted*.
 10. **RESET:** On clicking this button the form is reset.

The background has a wooden texture, with a light shade for easy visibility. Since the information of the third member can be entered only if the User checks the *CHECK BOX*, it gives the option to the

User to either register *TWO* or *THREE* Users.

Other than the Main Screen Dialog Boxes will appear once the User clicks the *SUBMIT BUTTON* depending on the information submitted by the User which is authenticated.

- The enable/disable conditions of the text fields and buttons are listed as follows:

ENABLE/DISABLE List		
FIELD	ENABLE	DISABLE
TEAM NAME	-	-
NAME 1	entering text in TEAM NAME	initially
ENTRY NO. 1	entering text in TEAM NAME	initially
NAME 2	entering text in NAME 1	initially
ENTRY NO. 2	entering text in NAME 1	initially
NAME 3	checking the CHECK BOX	unchecking the CHECK BOX
ENTRY NO. 3	checking the CHECK BOX	unchecking the CHECK BOX
CHECK BOX	-	-
SUBMIT BUT-TON	required fields are entered	any text field is empty

The text fields have been animated in the following ways:

ANIMATIONS LIST	
FIELD	ANIMATIONS
NAME 1	on entering text in TEAM NAME it flies in from left
ENTRY NO. 1	on entering text in TEAM NAME it flies in from left
NAME 2	on entering text in NAME 1 it flies in from left
ENTRY NO. 2	on entering text in NAME 1 it flies in from left
NAME 3	on checking the CHECK BOX it flies in from left
ENTRY NO. 3	checking the CHECK BOX

- In addition to at each a toast is raised indicating the User what he is doing and he is supposed to do next.

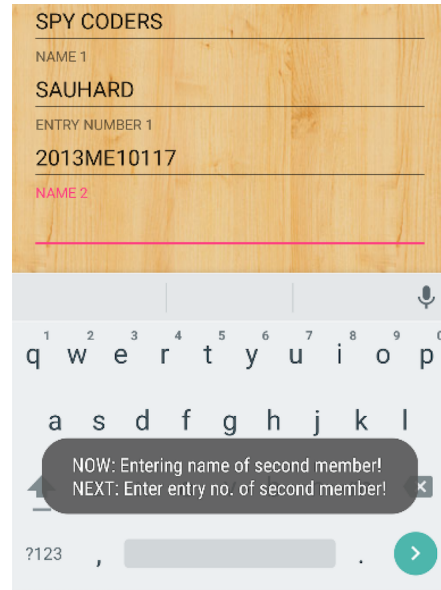


Figure 3: TOAST

- The screen has three click-able fields i.e. *CHECK BOX*, *EDIT BUTTON* and *SUBMIT BUTTON*. The actions are listed below:
 1. ***SUBMIT BUTTON***: It performs the dual function of sending the information to the server and authenticating it before sending it. Hence on clicking the *SUBMIT BUTTON* a dialog box will appear indicating the action undertaken. The various Dialog boxes and there conditions are listed below:
 2. ***CHECK BOX***: This when checked enables the user to enter the information for Third Member by enabling the Text Fields.
 3. ***RESET BUTTON***: This enables the User to Reset the entire form.

2 Implementation Details

- Functions were used to eliminate repetitive statements. We used an inbuilt data structure LinkedHashMap. This is a constructor that creates a linked hash map which iterates in the order in which its entries were last accessed, from least-recently accessed to most-recently (access-order).
- The error is handled in two stages:
 1. **WHILE ENTERING:** This feature checks the Format of the Name and Entry Number and raise an error in case its incorrect.

TEAM NAME
SPYCODERS

NAME 1
SAUHARD

ENTRY NUMBER 1
2

NAME 2

ENTRY NUMBER 2

NAME 3

INCORRECT ENTRY NUMBER
FORMAT. CORRECT FORMAT 20NN
CCC NNNN where
20NN - Year of entry
CCC - Branch Code
NNNN - Serial Number
N implies any digit from 0-9
C implies any character in A-Z or 0-9
No spaces (Spaces are provided here
for the purpose of illustration) !

Figure 4: WRONG ENTRY NUMBER-1

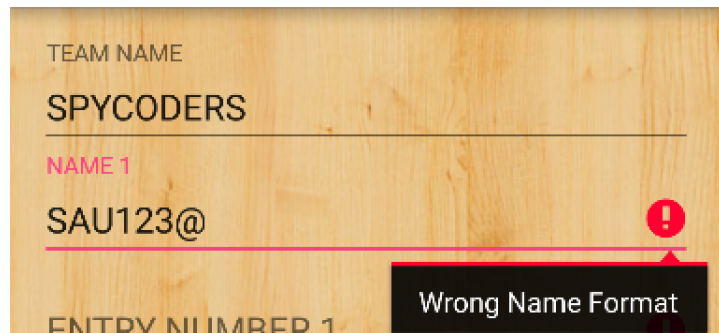


Figure 5: WRONG NAME

2. SUBMIT BUTTON

- (a) *INCORRECT ENTRY NUMBER FORMAT*: It indicates the User has entered a Entry Number in wrong format. The button **OK** is present, which can be pressed to go back to the form with focus to the text field with the error.

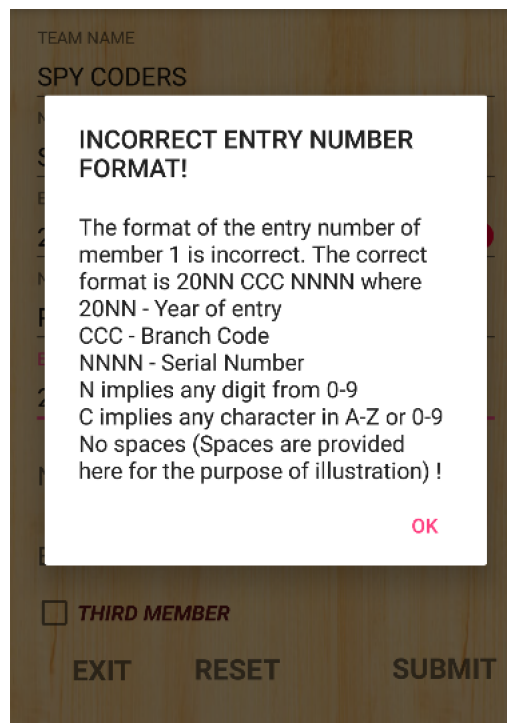
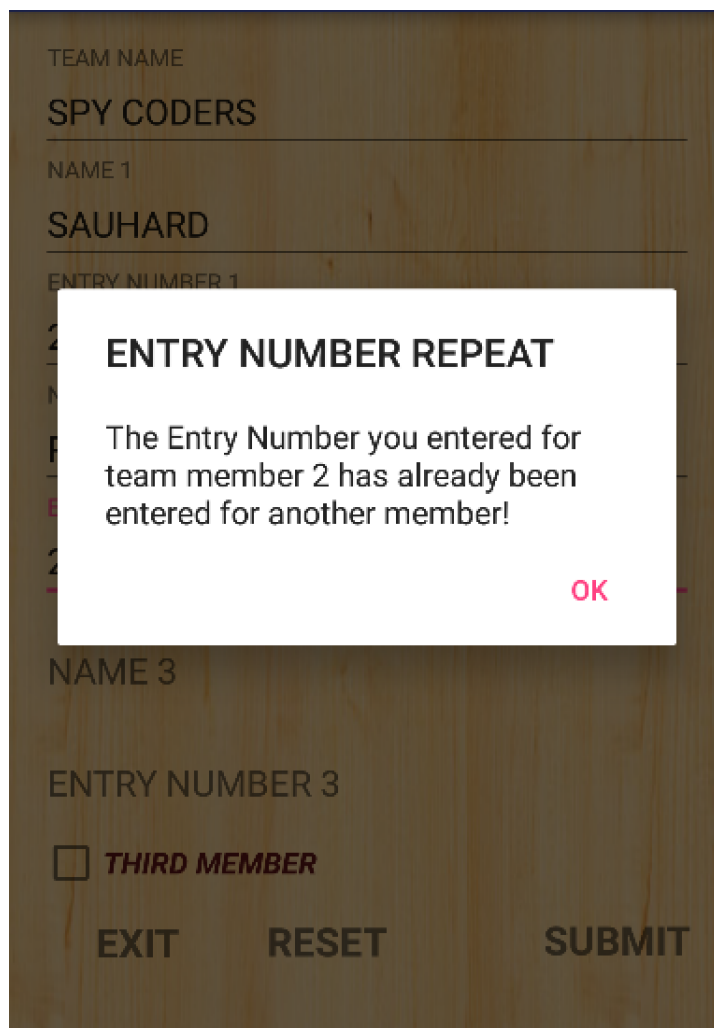


Figure 6: WRONG ENTRY NUMBER-2

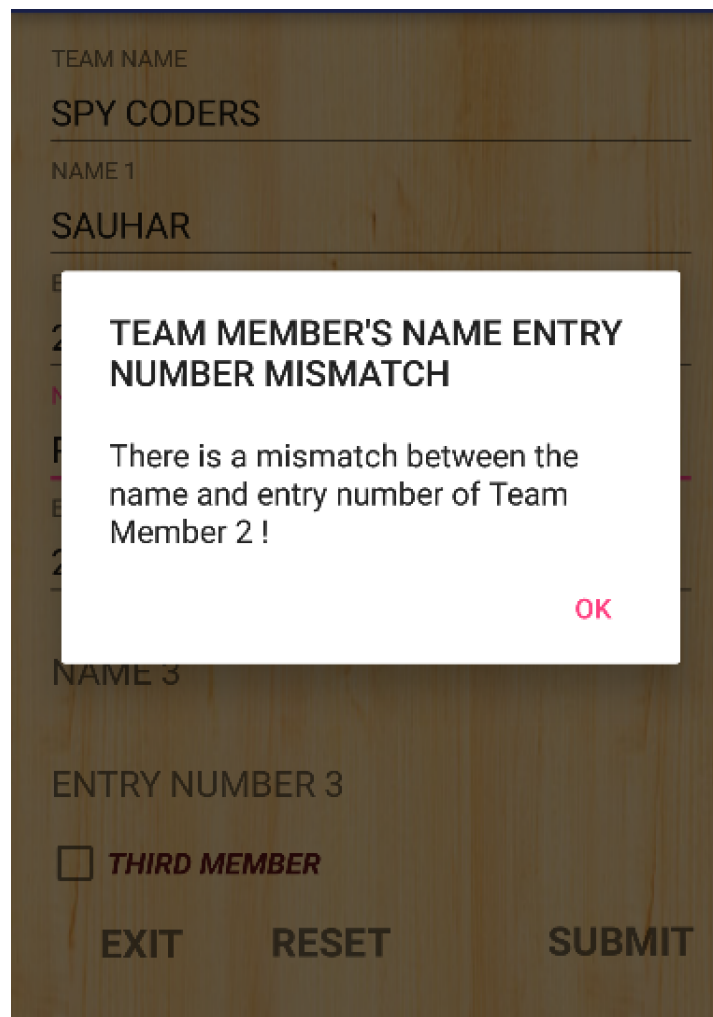
- (b) *ENTRY NUMBER REPEAT*: It indicates the User has entered an Entry Number that is already registered. The button **OK** is present, which can be pressed to go back to the form with focus to the text field with the error.



The image shows a form with a dark wood-grain background. The form contains the following fields and labels: "TEAM NAME" with the value "SPY CODERS", "NAME 1" with the value "SAUHARD", "ENTRY NUMBER 1" with the value "2", "NAME 2" with the value "N", "ENTRY NUMBER 2" with the value "6", "NAME 3" with the value "2", and "ENTRY NUMBER 3" with the value "2". There is a checkbox labeled "THIRD MEMBER" which is currently unchecked. At the bottom of the form are three buttons: "EXIT", "RESET", and "SUBMIT". A white dialog box is overlaid on the form, titled "ENTRY NUMBER REPEAT". The text inside the dialog box reads: "The Entry Number you entered for team member 2 has already been entered for another member!". There is a pink "OK" button in the bottom right corner of the dialog box.

Figure 7: ENTRY NUMBER REPEAT

- (c) *TEAM MEMBER'S NAME ENTRY NUMBER MISMATCH:*
It indicates the User has entered a Name and Entry Number that do not match. The button **OK** is present, which can be pressed to go back to the form with focus to the text field with the error.



The image shows a dark-themed form with a white error dialog box in the center. The form has the following visible elements:

- TEAM NAME**: SPY CODERS
- NAME 1**: SAUHAR
- NAME 2**: (partially visible)
- ENTRY NUMBER 2**: (partially visible)
- NAME 3**: (partially visible)
- ENTRY NUMBER 3**: (partially visible)
- ☐ **THIRD MEMBER**
- EXIT**, **RESET**, and **SUBMIT** buttons at the bottom.

The error dialog box contains the following text:

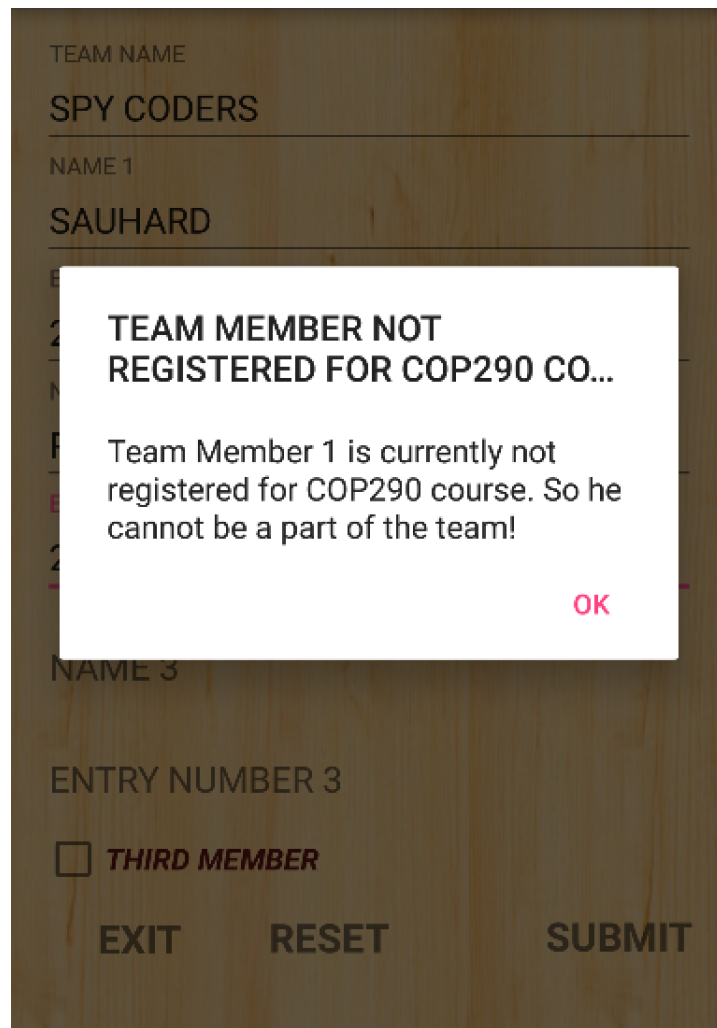
TEAM MEMBER'S NAME ENTRY NUMBER MISMATCH

There is a mismatch between the name and entry number of Team Member 2 !

OK

Figure 8: TEAM MEMBER'S NAME ENTRY NUMBER MISMATCH

- (d) *TEAM MEMBER NOT REGISTERED FOR COP290 COURSE:*
It indicates the User has entered a Name and Entry Number that are not registered for the course. The button **OK** is present, which can be pressed to go back to the form with focus to the text field with the error.



The image shows a web form for team registration. The form has the following fields and elements:

- TEAM NAME:** A text input field containing "SPY CODERS".
- NAME 1:** A text input field containing "SAUHARD".
- NAME 2:** A text input field (partially visible).
- NAME 3:** A text input field (partially visible).
- ENTRY NUMBER 1:** A text input field (partially visible).
- ENTRY NUMBER 2:** A text input field (partially visible).
- ENTRY NUMBER 3:** A text input field (partially visible).
- THIRD MEMBER:** A checkbox that is currently unchecked.
- Buttons:** "EXIT", "RESET", and "SUBMIT" are located at the bottom of the form.

An error message dialog box is overlaid on the form, containing the following text:

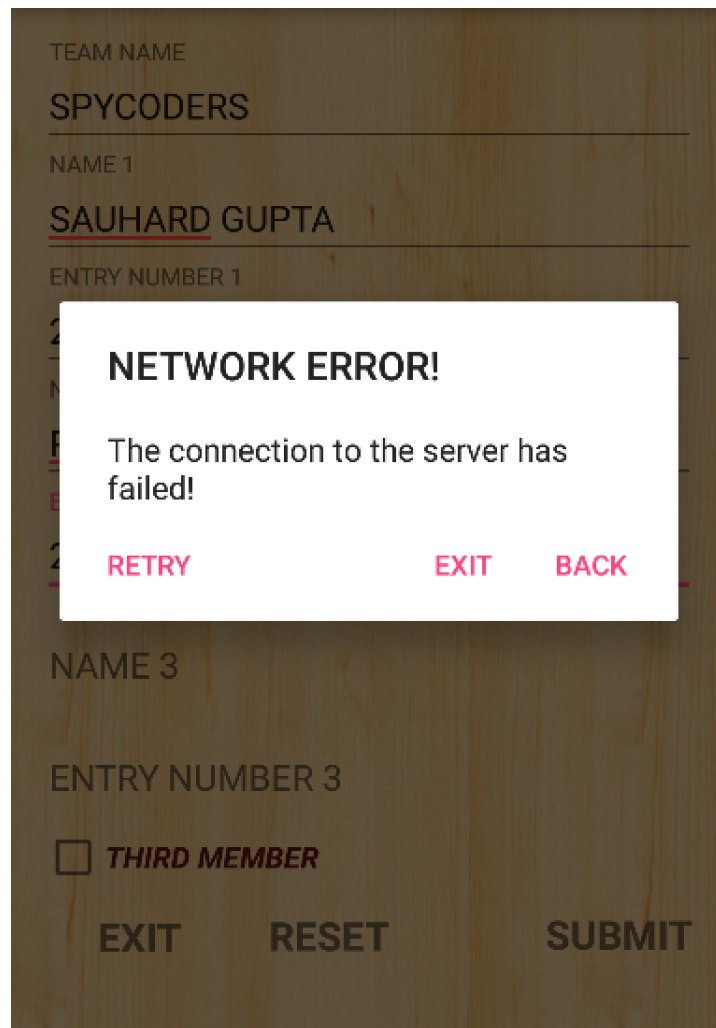
TEAM MEMBER NOT REGISTERED FOR COP290 CO...

Team Member 1 is currently not registered for COP290 course. So he cannot be a part of the team!

OK

Figure 9: TEAM MEMBER REGISTERED FOR COP

- (e) *CONNECTION ERROR*: It indicates the device is not connected to the network. The button **RETRY** enables the User to try to submit the form again, the button **BACK** enables the User to back to the form again and the button **EXIT** enables the User to exit from the form.



The image shows a web form with a dark background. The form contains the following fields and labels: "TEAM NAME" with the value "SPYCODERS", "NAME 1" with the value "SAUHARD GUPTA", and "ENTRY NUMBER 1" with the value "2". Below these, there are labels for "NAME 3", "ENTRY NUMBER 3", and a checkbox labeled "THIRD MEMBER". At the bottom, there are three buttons: "EXIT", "RESET", and "SUBMIT". A white dialog box is overlaid on the form, displaying the message "NETWORK ERROR!" and "The connection to the server has failed!". The dialog box has three buttons: "RETRY", "EXIT", and "BACK".

Figure 10: CONNECTION FAILED

- (f) *REGISTERED USER*: It indicates the User has entered a Entry Number that is already registered. The button **EDIT** enables the User to go back to the form again and edit it and the button **EXIT** enables the User to exit from the form.

TEAM NAME

SPY CODERS

NAME 1

SAUHARD GUPTA

ENTRY NUMBER 1

REGISTERED USER!

One or more users are already registered!

EXIT EDIT

NAME 3

ENTRY NUMBER 3

☐ **THIRD MEMBER**

EXIT RESET SUBMIT

Figure 11: ALREADY REGISTERED USER

- To send the User information to the server we first added the following libraries:

1. **java.net.URL** : to set the URL.
2. **java.net.HttpURLConnection** : to connect, post and receive.
3. **java.net.URLEncoder**

Next to post this information we used the ”**POST**” method of *HttpURLConnection*.

- All the Strings used in the app which will potentially get displayed to the User during run-time, are managed in a separate file `/res/file/strings.xml`. This helps in better management of the strings and provides scope for translation of app into various languages.

Report made and compiled by *Sauhard Gupta 2013ME10117*.

REFERENCES:-

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<https://github.com>
<https://slack.com> (<https://spycoderscop290.slack.com>)
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