# Purdue Course Ratings

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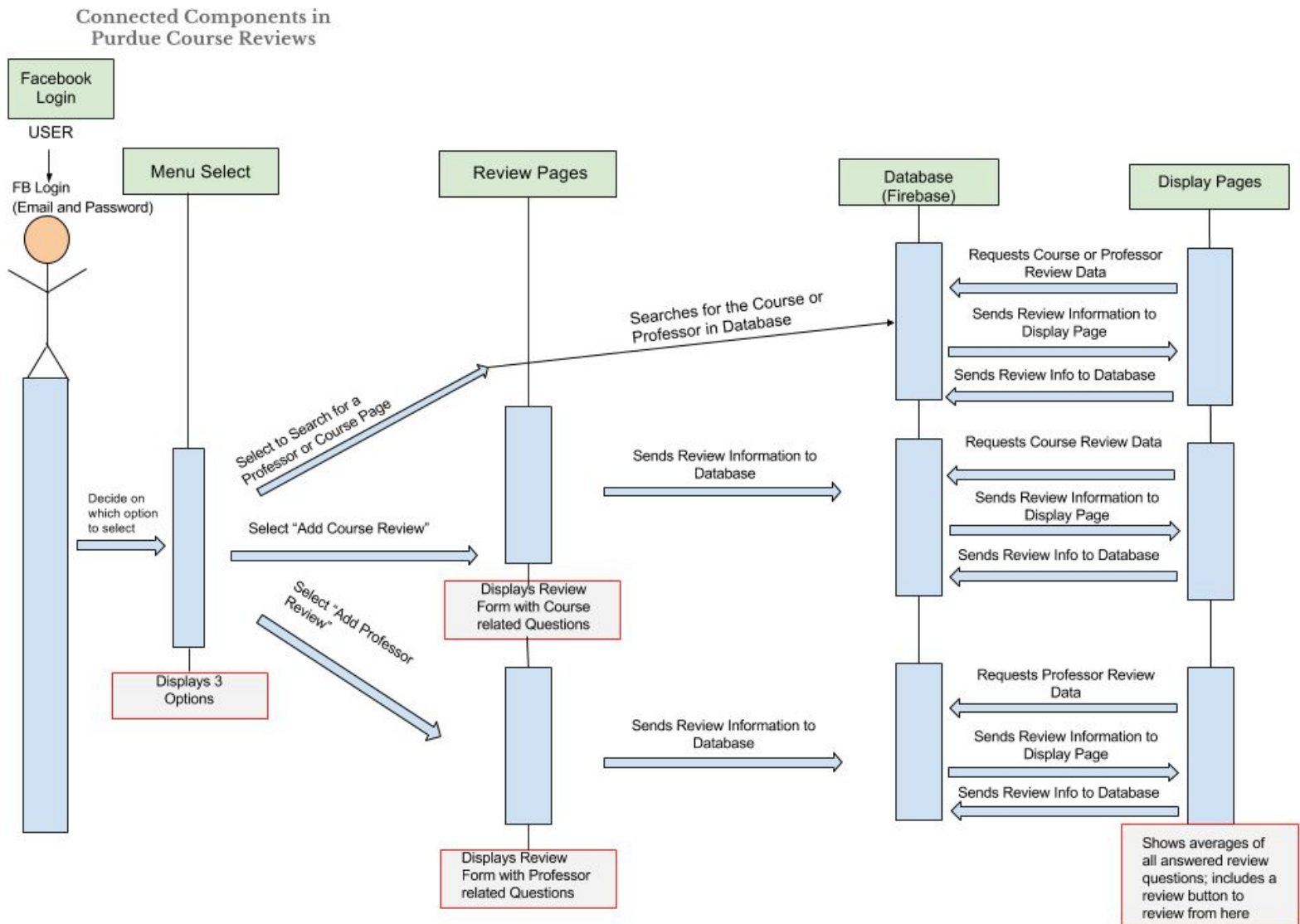
## Use cases worked on so far in sprint 1:

1. As a user, I would like to login through Facebook.
2. As a user, I would like to select if I want to write a review for an instructor or course.
3. As a user, I would like to fill out a questionnaire that rates an instructor.
4. As a user, I would like to fill out a questionnaire that rates a course.
5. As a user, I would like to view a course's rating (front end only).
6. As a user, I would like to view an instructor's rating (front end only).
7. As a user, I would like to search for a course or instructor (front end only).

**Note:** Throughout this document, we will use a severity of 1 as the lowest severity. As the numbers increase, so does the severity.

## Classification of Components

Our components are database (Firebase), facebook login, writing an instructor/course review, selecting the type of review from login, search for a course or instructor and displaying an instructor/course review page. Their interactions, inputs, and outputs are outlined in the following diagram:



We are using top down incremental testing. We have completed more frontend work than backend work and so we can more easily work top down. We could substitute unavailable components with stubs.

## Incremental and Regression Testing

We automated testing by using Espresso which helps automate unit testing for Android Studio. As we added more modules, we tested if going through them was smooth and without error. We created rules for different activities/pages and intents and then wrote tests for various UI components to make sure they are functioning properly altogether as we add more tests for regression testing. This automation can be seen in the folder: "CS_408_Project/app/src/androidTest/java/com/mango/cs_408_project/"

| Module | Database (Firebase) | | |
|---|---|---|---|
| **Incremental Testing** | | | |
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | The database does not store IDs for each unique user with each review. We have hard coded a value as a place holder. | 2 | We intend on using Facebook's unique ID per user in order to keep track of users. This way we can make sure each user can only write one review per course/instructor. |
| 2 | The database does not have strict rules about types so any information of any type can be stored anywhere. | 1 | We have formatted our reviews when we add them to the database so everything is uniform and information of the same type is in the same place in every review. |
| **Regression Testing** | | | |
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | Adding course reviews and instructor reviews both caused an issue because we could not have both types of reviews in the same place. | 2 | We created two different sets of reviews. One is for instructors and the other is for courses. This keeps our database more organized. |
| 2 | If there were any empty instructor names for the name field when someone wrote a review, it would not get added into the area in the database for the specific instructor. This made the database | 3 | We now check that this field cannot be empty and display an error message if it is. We also added automated tests to make sure that nothing gets added to the database if the name is missing. |

| | disorganized and the review inaccessible in the future. | | |
|---|---|---|---|
| 3 | If the user did not answer a question when writing a review, a default value of 0 or false would get added to the database when that might not represent the reviewer's opinions. | 3 | We now check to make sure every question is answered and display an error message otherwise. We also added several tests to make sure a review does not get added to the database if any of the fields are empty. |

| **Module** | Facebook Login |
|---|---|

| **Incremental Testing** | | | |
|---|---|---|---|
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | Nothing happens after clicking "login" | 4 | I made sure it checks for a login access token, and then it showed the login fields afterwards |
| 2 | The app wouldn't lead to the starting activity | 3 | I made sure the app went to the homescreen in the success case method. |
| **Regression Testing** | | | |
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | As we added more tests, they started to not work with the facebook activity | 2 | I separated the page the facebook login activity was from the starting activity. This way, no one had to start from the login page to run their tests |
| 2 | Was logged out fully after clearing the cache. Noticed this when restarting the facebook test and the user would still be signed in. | 1 | Made sure to explicitly sign user out from both facebook and firebase after each hit of the logout button. Included logout button click during testing. |

| **Module** | Writing an instructor/course review |
|---|---|

| Incremental Testing | | | |
|---|---|---|---|
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | The user could enter a review that had not answered most of the questions. | 2 | We check that the user has answered all the questions and display an error message if the user has not. We have also added automated tests to check this functionality. |
| 2 | The user's answers for understandability and other questions that had sliders to select in a range were not being captured. | 1 | We figured out how to get that information from the UI and use it to help build a review to add to the database. |
| Regression Testing | | | |
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | Preventing users from entering empty names for instructors so that our database can be set up using the instructor's name caused an issue. It encouraged them to enter random characters so they can progress. | 3 | We check the characters entered to make sure they are all alphabets for instructor names. |
| 2 | If a user clicked submit after writing a review, it would just stay on that same page with no indication of anything having happened. | 2 | We added a message to be displayed if the review was not formatted well and we send the user back to our home screen after submitting a review. This ties the review writing module to our home screen. We have tests to check this functionality is what we expect. |

| Module | Selecting the type of review from menu | | |
|---|---|---|---|
| Incremental Testing | | | |
| **Defect No.** | **Description** | **Severity** | **How to correct** |

| 1 | Changing to the review pages from the main menu would automatically focus on one of the textboxes on the new page, which is not the intended behavior. | 1 | A "focusable" property of an element of the review pages had to be marked as true. |
|---|---|---|---|

| Regression Testing | | | |
|---|---|---|---|
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | Opening the app will automatically jump to the page where users can add an instructor or TA | 2 | Add a homepage where users have the options to select which page to go to after signed into the app |
| 2 | The users will be directed to a page where they have the options to view a review or to logged in from Facebook, but the users can also edit / add reviews without logging in | 3 | Add a Facebook login page which will asks the users to login using their Facebook account before directing them to edit or view any reviews. |

| **Module** | Search for a course or instructor |
|---|---|

| Incremental Testing | | | |
|---|---|---|---|
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | The user could search with a poorly formatted search query that might include something other than alphanumerics. | 1 | We check, before a user submits, to see if the user has entered any special characters and display an error message if the user needs to change their search query. |
| 2 | The error message when a search query was bad would say "Please try again" which did not give the user any information about what needed to be done differently. | 2 | We changed the error message to "Please try again without any special characters" and updated our tests. |

| Regression Testing | | | |
|---|---|---|---|

| Defect No. | Description | Severity | How to correct |
|---|---|---|---|
| 1 | The search page was not connected to any of our other modules. There was no way for someone to search. | 5 | We added a button to the home screen so that instead of just selecting the type of review to write, users can also search for instructors/courses already in the database. |

| Module | Displaying an instructor/course review page |
|---|---|

| **Incremental Testing** | | | |
|---|---|---|---|
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | The data from the database sometimes comes out as false when the button hit has a value of true. | 3 | Intended to be fixed very soon by changing making sure one button is true while the other is false when submitting |
| 2 | The data is not displaying onto the course review page from the database. | 2 | Intended to be fixed by making sure an average is calculated and well displayed in view for each professor or course page. |

| **Regression Testing** | | | |
|---|---|---|---|
| **Defect No.** | **Description** | **Severity** | **How to correct** |
| 1 | The buttons in the instructor and course review pages have similar naming, which caused many test cases to fail during testing. | 2 | Renamed all the buttons in both instructor and course review page for better understanding and clarification |

## Updated Product Backlog

The updated list of requirements can be found in the updated backlog in our repository. The following is a copy of the table. Note: One of our group members is no longer taking this class so we have changed the status for some requirements to "if time permits".

| ID | Functional Requirement | Hours | Status |
|----|------------------------|-------|--------|
| 1 | As a user, I would like to login through Facebook. | 5 | Completed in sprint 1 |
| 2 | As a user, I would like to search for a course/professor/TA (through information pulled from the Purdue directory) | 20 | 'In-progress: moved to sprint 2 |
| 3 | As a user, I would like to filter my search further after seeing the initial results using different keywords | 5 | Planned for sprint 2 |
| 4 | As a user I would like to view ratings (averages of all students for different criterias) and reviews of a professor/course/TA | 10 | In-progress: moved to sprint 2 |
| 5 | As a user, I would like to write a review | 10 | Completed in sprint 1 |
| 6 | As a user, I would like to upvote or downvote a review as helpful. | 3 | Planned for sprint 2 |
| 7 | As a user, I would like to comment on reviews. | 10 | Planned for sprint 2 |
| 8 | As a user, I would like to sort the list of reviews based on how helpful they are. | 5 | Planned for sprint 2 |
| 9 | As a user, I would like to sort search results by ratings. | 5 | If time permits |
| 10 | As a user, I would like to edit/delete my own reviews or ratings | 10 | Planned for sprint 2 |
| 11 | As a user, I would like to answer yes or no questions related to the professor/course/TA (e.g. is the professor easy to understand, do you need a textbook, etc.) | 5 | Completed in sprint 1 |
| 12 | As a user, I would like to view different courses a professor teaches | 5 | If time permits |
| 14 | As a user, I would like to share a review on Facebook | 5 | If time permits |
| 15 | As a user, I would like to see who the highest rated professor for a specific course is. | 5 | If time permits |