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Project Summary

We are designing and developing a student forum mobile web application. The purpose of the project is to create a resource that provides a means of networking, help and support, and general educational news strictly for students. We will be using a database backend for data persistency so that students can be registered and be able to keep track of their posts, topics and conversations, as well as create a custom profile to represent themselves. When we are done the application will be accessible by the public and available for use by students. We hope to accomplish a working application by the end of the semester.

Project Requirements

- Be able to handle large numbers of users (hundreds/thousands)
- Be accessible any time of the day (early morning, afternoon, evening)
- Database backend for data and state persistency and user individuality
- The ability to create and edit topics/categories
- The ability to create and edit subtopics/subcategories
- The ability to create and edit posts
- A WSYWIG text editor for posts
- jQuery integration
- CSS/CSS3 for styling
- HTML/HTML5 for visual representation
- PHP for database access and backend architecture

Users and Tasks

1. Users & Tasks
    a. Users Must:
        i. Create Account
        ii. Login/Logout
        iii. Change Account Information
        iv. View Categories
        v. View/Add Topics & Posts

2. Permission Levels
    a. 1 – Inactive
        i. Must be activated to login
    b. 2 – Active
        i. Can edit own personal information
        ii. Can Edit/Delete their own Topics/Posts
    c. 3 – Moderator
        i. Can edit own personal information

ii. Can edit/delete all Topics/Posts

d. 4 – Admin
   i. Can edit/delete all Users/Topics/Posts

3. Use Cases
   a. All users
      i. User creates account
         1. Problem: User tries to create account with incorrect formatting. Does not meet the requirements of Username/Password length or other invalid information.
      ii. User logs in
         1. Problem: User enters a Username/Password combination that is not found in the database.
      iii. User logs out
         1. Problem: User is not already logged in.
      iv. User creates Topic
         1. Problem: User creates a Topic with an empty body, no title, or any other invalid format that may be used.
      v. User edits Topic
         1. Problem: User tries to edit Topic that is not in their permission level.
         2. Problem: User tries to use invalid input.
      vi. User deletes Topic
         1. Problem: User tries to delete Topic that is not in their permission level.
      vii. User creates Post
         1. Problem: User tries to create a Post with an empty body, or other invalid formats.
         2. Problem: User tries to use invalid input.
      viii. User edits Post
         1. Problem: User tries to edit Post that is not in their permission level.
         2. Problem: User tries to use invalid input.
      ix. User deletes Post
         1. Problem: User tries to delete Post that is not in their permission level.
      x. User edits personal information
         1. Problem: User edits personal information with incorrect formatting, such as changing their password to one with an invalid length or providing a false email address.
   b. Admin users
      i. User edits/activates/deactivates another user
         1. Problem: User account being altered might not exist.

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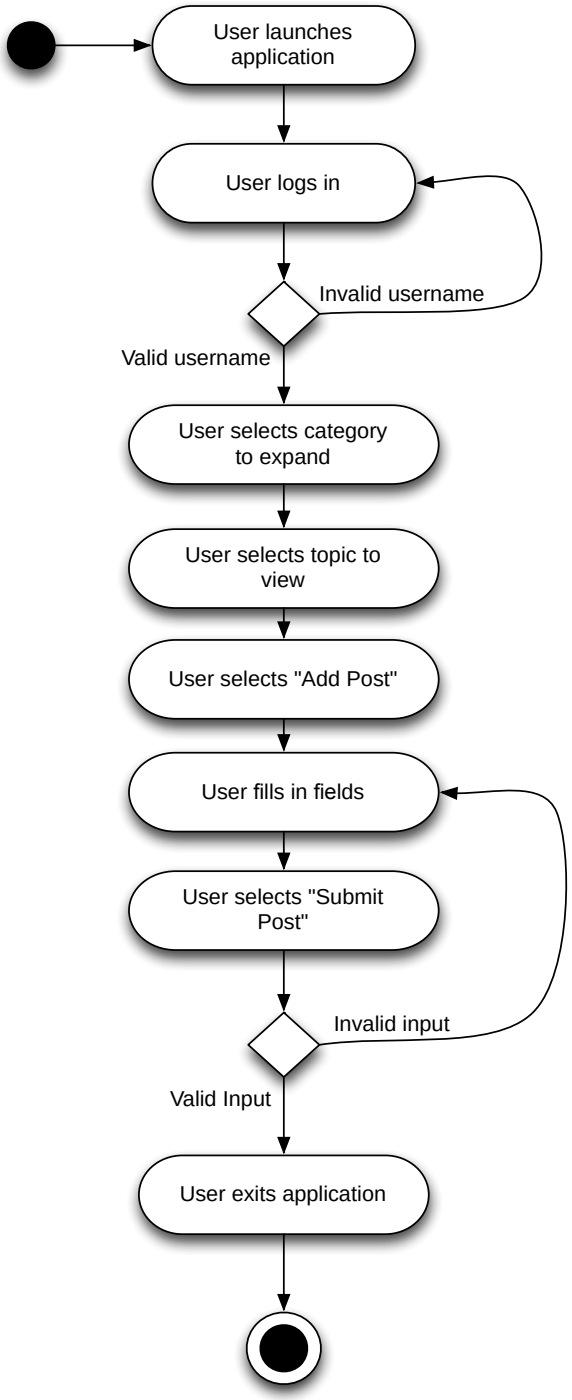
Activity Diagram

Activity Diagram: User Adding Post



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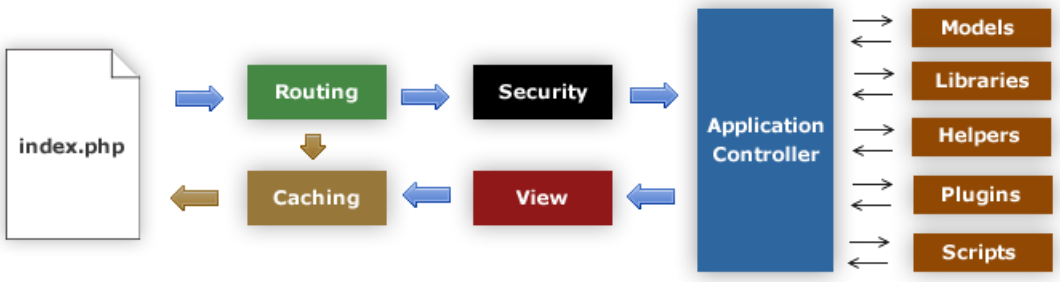
Architecture Framework

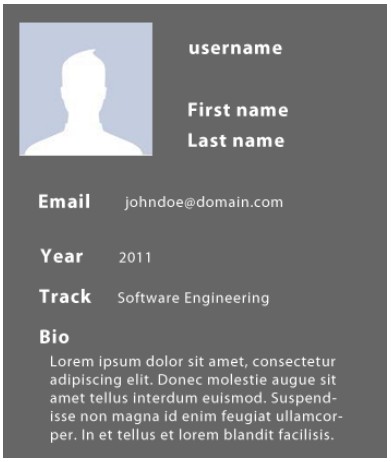
We are using the CodeIgniter framework for our web application

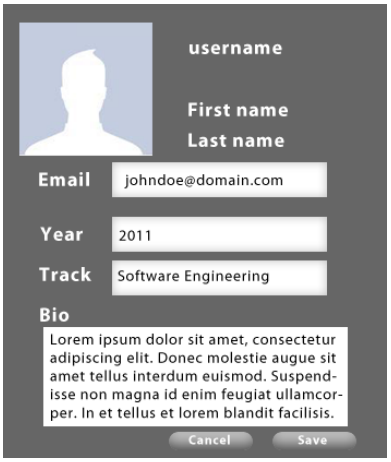


Data Storage

For data storage and persistency, our application will use a MySQL Database. This database will be located on the same server the mobile web application will be hosted on, so we will be able to access it via "localhost". The classes that will be persisted in this database are: User, Category, Topic, and Post. Accordingly there will be a MySQL table for each persisted class.

UI Mockups





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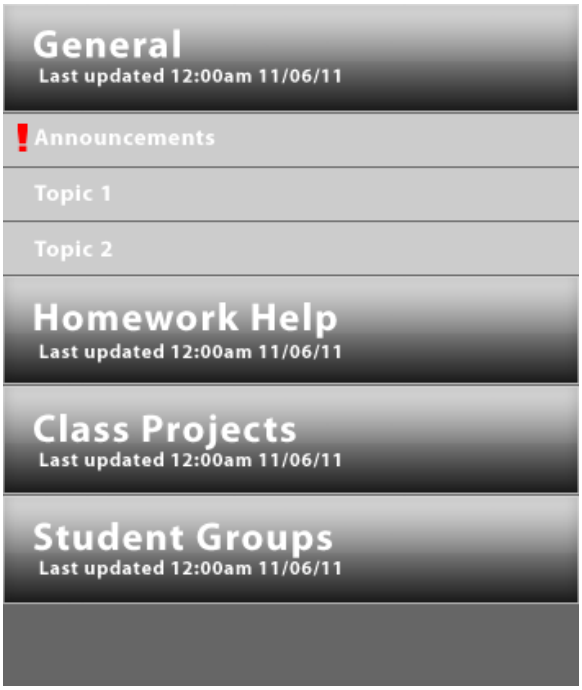

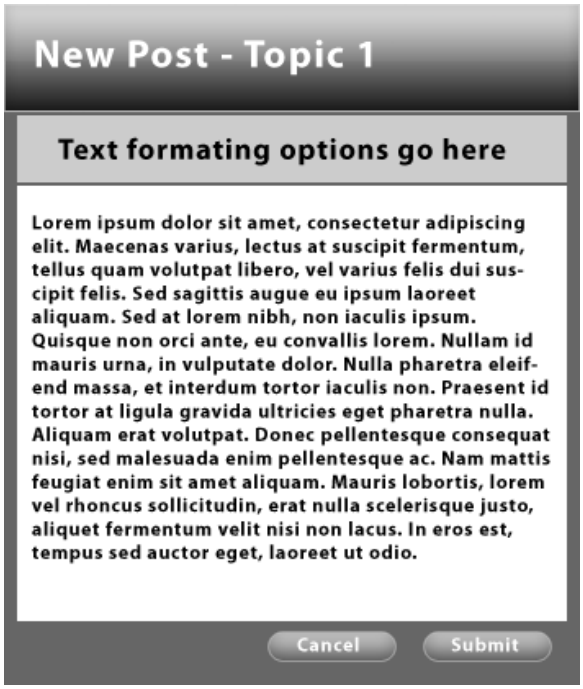

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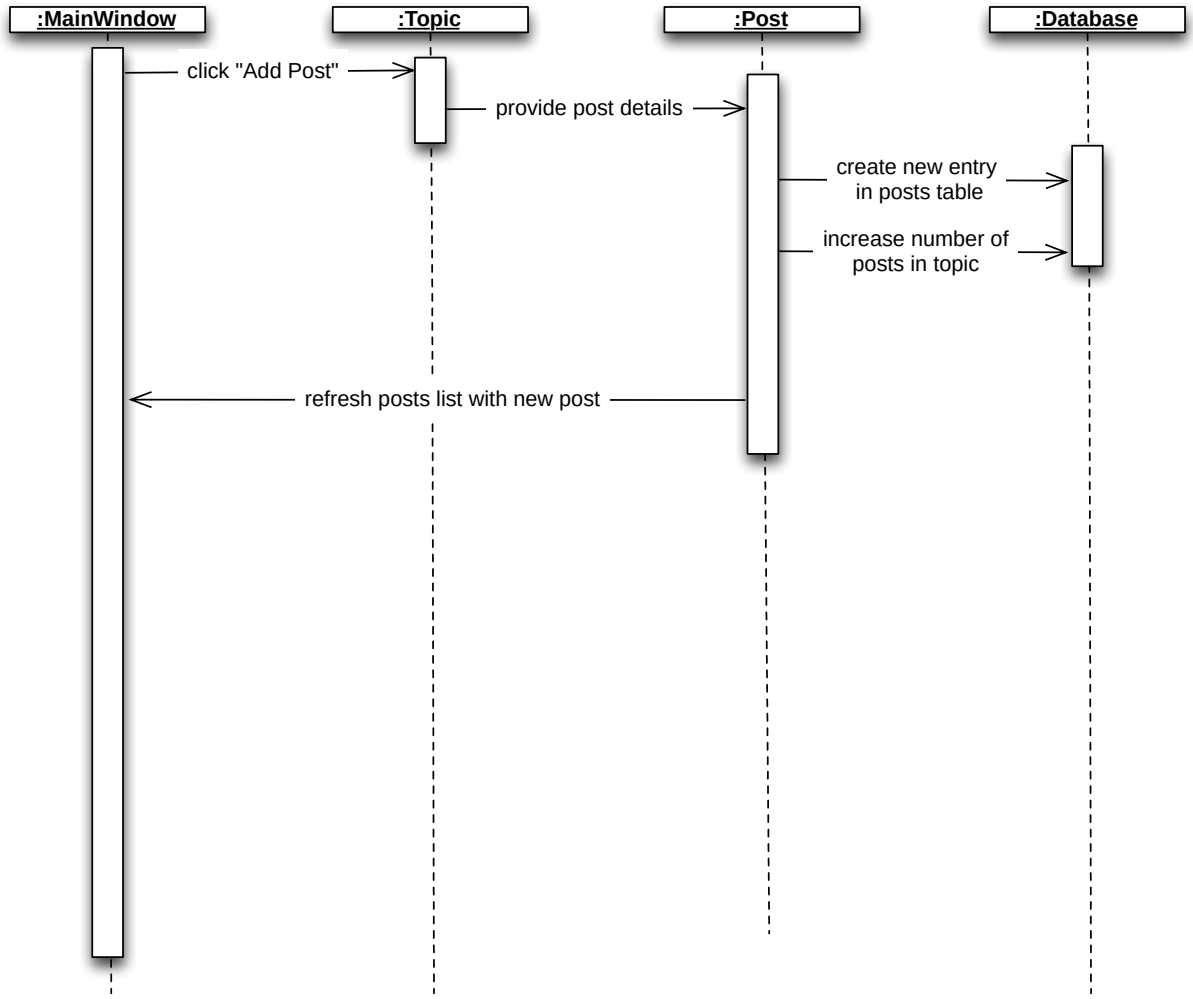
User Interactions

To add a post, a user will click the on-screen “Add Post” button. From there our system will display the proper entry page to take the users input. Once the user has filled out what is needed, the post will be checked for validity and added to our database for persistence. The list will then be refreshed and will contain the new post that will be displayed on screen.

Sequence Diagram: User Creates Post



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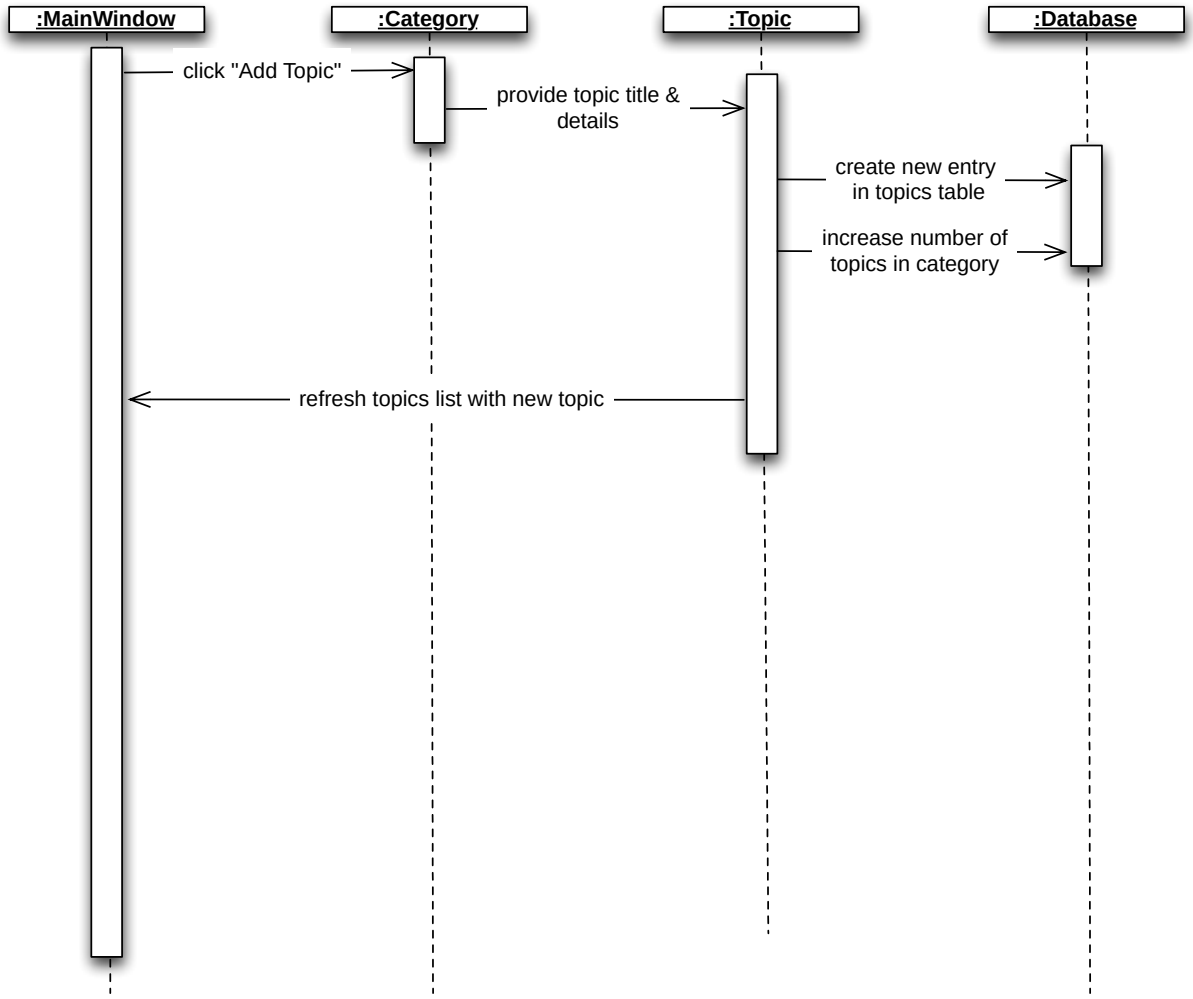
When a user creates a topic, there is a similar sequence that will be followed. The user will click on the “Add Topic” button on screen. Our system will then provide the proper fields for the user input. Once the user inputs all the necessary information our system will create a topic object and enter it into our database for persistence. The list will then refresh with the new topic added and displayed on screen.

Sequence Diagram: User Creates Topic



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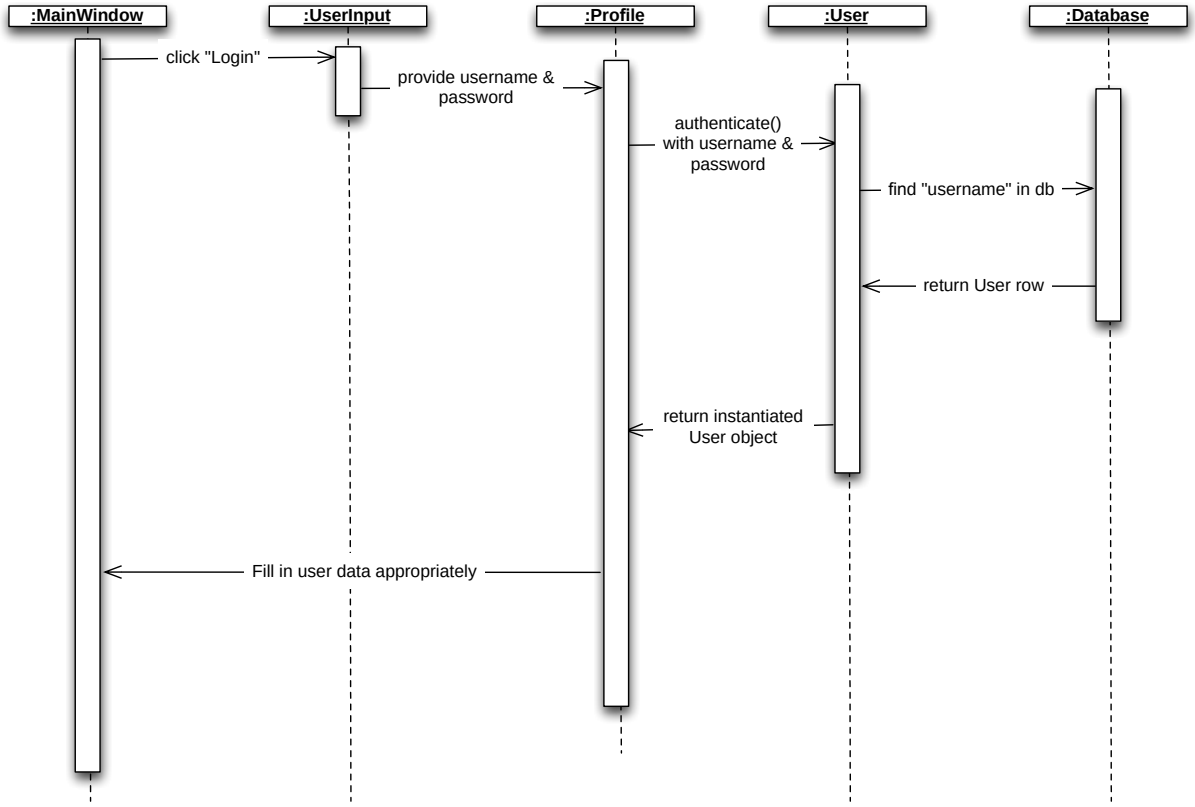
In order for the user to access any of the information in this mobile web application, they must be logged in. To log in, the user is prompted to provide their username and password on screen. After the user enters this information, it is passed to the profile class for authentication. To authenticate, it looks at the user object that finds the entry in our database. When the entry is found, it returns the user object back to the profile object. From there, the user data will be used in the application appropriately.

Sequence Diagram: User Logs In



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Class Diagram