Cosaic

Team #38

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Project Overview

Cosaic is a social networking application that allows users to share their daily lives through online image posts. When users login to Cosaic, they will be able to view their previous posts on their own profile page as well as update their status, post pictures, and add captions and hashtags. Additionally, Cosaic will allow users to connect with other users by searching for their profile name and viewing their posts. Cosaic is designed to be a fun, casual platform that allows users to share their story with the world and view the stories of others.

The stakeholders of this project will include the members of the project team (Ahmed Darkazanli, Albert Ong, and Chloe Phan), project manager (Professor Mike Wu), and every user who loves to share their interests and activities and regularly follow their favorite people. The individuals who most enjoy interacting through social media will be the end-users that our application is targeted at. Therefore, our team must ensure that our software is functional, secure, and bug-free in order to provide the best user experience and maintain a positive image of the people working on the project.

System Environment

| Presentation Layer Tier 1 | Application Layer Tier 2 | Data Layer Tier 3 |
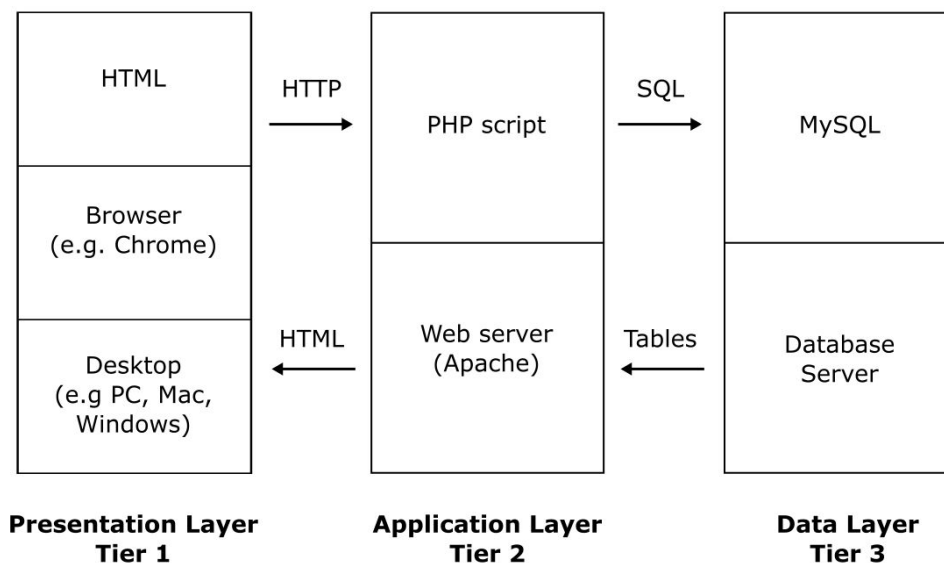
Hardware and Software used

Apache web server
Mac/PC

RDBMS

MySql

Application Languages

HTML/CSS, PHP, SQL

Functional Requirements

- Describe users:
    - End users will be people who are interested in using social networking services to share photos and captions that describe their lives.
- How users can access the system:
    - Users will need a PC or laptop to connect to the browser such as Safari, Google Chrome, or Internet Explorer. Users will be required to sign up for a new account or log in if they have already created an account previously with Cosaic.
- Describe each functionality/features, functional processes and I/O(s).
    - View profile
        - After users log in their account, they will initially be shown a list of all their posts on the home page with a shortened version of their caption (one that fits within one line). Users will be able to view their profile details, including their profile picture, name, username and bio.
    - Edit profile
        - Users can edit their profile picture and bio by clicking the "edit profile" link below their profile picture, and either uploading a new picture or a new bio.
    - Create Posts
        - On the navbar of the Cosaic's website, there is an option to create a post. By clicking on the "➕" button, a status popup will appear on the screen and prompt users to upload a photo. Users can add their information that they want to share in the "caption" box. The message can be anything what's going on in their lives, what's changed, or simply how they're

feeling or what they're thinking. Users can post their message on their homepage by simply clicking on the "Save" button at the bottom of the popup.

- ○ Tag users in posts
  - Users can tag other users in posts by putting the "@" symbol before their username within the caption. Once posted, it will present a link to that users profile.
- ○ Delete Posts
  - Users can delete their posts by clicking the "edit" button underneath each post and selecting "delete" on the popup that follows. After deleting the posts, users will see their home page with an updated view.
- ○ Edit Posts
  - Users can edit the caption of any post by choosing "edit" button underneath the post. The user will then be able to enter in a new caption in an input field in the popup that follows. To successfully edit the chosen post, users will need to click on the "Save" button at the bottom at the popup to publish their changes.
- ○ View other users posts
  - Users can search for other people who have an account on Cosaic by inputting another users' first name, last name, or username in the search bar and selecting the user in the dynamic dropdown. If the user is still not visible in the drop down, a user can hit "search" and it will show the search results in a separate page. Because ids on Cosaic are unique for each user and each account, users will immediately be brought to the searched user's home page. The searched users' homepage layout is the same style as users' homepage, but there is no option to Create Posts, Delete Posts, and or Posts.
- ○ Comment on posts
  - Users will be able to comment on posts added by themselves or others. They must simply click on the posts, then type their response within the input field shown in the modal.
- ○ Like posts
  - Each post will have a thumbs up button at the bottom of the posts. A user can just click on this button and the page will refresh showing the new changes. This will work on either the user's post or on other users' posts.

Non-functional Issues

Graphic User Interface (GUI)

The fundamental graphic user interface (GUI) of Cosaic will consist of HTML files, which contain content such as dividers, buttons, and input fields, combined with CSS files which are used to style the documents for presentation aesthetics. An integrated development environment (IDE), such as Microsoft Visual Studio Code, will be used to write, edit, and maintain these documents. Additionally, graphic design assets, including images, logos, icons, and other branding necessities, will be drawing using a vector based imaging program such as Adobe Illustrator or Inkscape. If further image editing capabilities are required to complete the project, then tools such as Adobe Photoshop and GIMP may be deployed.

The user interface of Cosiac will abide by the fundamental graphic design principles of contrast, repetition, alignment, and proximity to ensure and aesthetically pleasing user experience. The main page will double as the login page and include the Cosaic logo, input fields for a user's email and password, the login button, as well as a button that links to the signup page. The signup page will have a similar layout to the login page, with the most significant distinction being functionality rather than aesthetics. After logging in, a user will be presenting with their user profile page, which will include a search bar, logout button, profile description, post button, and image posts alongside image captions. The logout button will simply return the user to the login screen while the search bar will allow the user to search for the profiles of other users on the platform. The post button will redirect the user to another page that allows them to upload an image and write a caption to said image that will be posted to their own profile.

Because the main feature of Cosaic is the ability to share photos will the public, the majority of the screen will be occupied by the images of image posts while the minority will be occupied by the remaining features. When viewing either their own profile or ther profile of another user, users will be able to scroll down the page and view posts chronologically by earliest post first. The use of repetition will be clearly defined in this aspect of the user interface because image files will be repeated in the same manner while ordered in a vertical fashion.

Example user interface
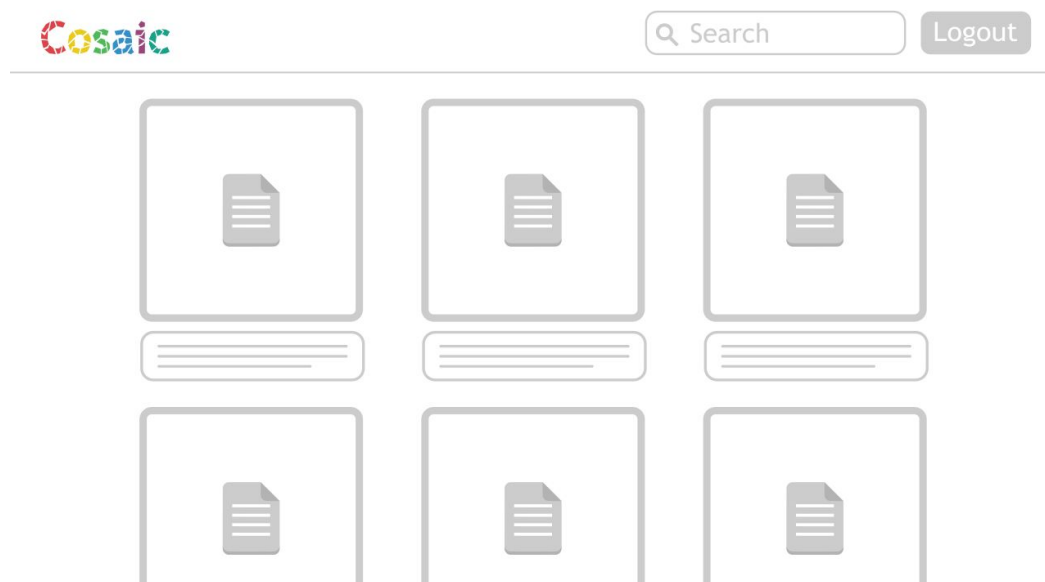
Security

Accounts will be identified by their respective email and passwords, therefore security measures should be implemented to ensure the safety of the platform. One method of security that will be implemented is SQL injection, which will involve filtered data using mysql[i]_real_escape_string() command to ensure that dangerous characters will not be passed into the SQL query. Additional, user input will be sanitized by filtering the user's data by context. Furthermore, passwords will be secured using some type of cryptographic function, such as RIPEMD, and utilize salting, the practice of adding random data before and after user input to confuse attackers. To avoid cross-site scripting (XSS), our project will filter output to the browser through the htmlentities() command. Finally, the project will avoid session fixation and hijacking by regenerating session IDs and by utilizing secure socket layers (SSL).

Access Control

A user's profile along with all images and captions posted to said profile will be visible to other Cosaic users as well as the general public. However, control over an individual user profile will be limited to the user themself. The system of access control that has been described is designed to ensure that all users can read the profiles of others, and the owner of a user account will be able to read/write the content of their own profile.