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SW Engineering CSC648/848 Summer 2018

StockOverflow

Team 4

Milestone 1

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Version 1

1. Executive Summary

Many academic purposes require students to find and use images online. This ranges from history and literature courses, in which pictures might be used as a reference, to computer science, where such kind of data can be used in various software projects for computer vision and artificial intelligence applications. Many students find it challenging to find free images online, and sometimes legal problems can arise. Therefore, we design a secure and totally royalty-free website in which students can share their own material with others to benefit each others' academic work. While many similar products do exist, it is important to read their Terms of Service carefully to avoid any possible trouble. Our product takes care of that, and students can freely use any content without the fear of repercussion.

Stock Overflow is a stock photo website which allows students to share the visual content they own with their peers free of charge. Any registered user is able to upload their images, and once approved by our team on having appropriate content, these images will be available to browse from the web. While any visitor can see the available content browsing the website, the images shown to unregistered user will be limited to small thumbnail representations. While we require visitors to register on our website in order to access full resolution images, all the content is free of charge. Registration serves the purpose of better knowing the customer base as well as for the possible monetization of this website by selling limited amounts of advertisements that could be targeted by country, gender and age.

Our team consists of six dedicated Computer Science students at San Francisco State University that share the passion for making information easy to use and access. We will be working hard to make the Stock Overflow website a reality and help students share their content freely. Our Team Lead Andrew Andrawos is managing the Back-end and Front-end teams to deliver the product on time. The Back-end team consists of three people with Back-end Lead Scott Penn and team members Ann Dao and Anita Zhen who will focus on making sure the website database is working reliably and securely. The Front-end team with Front-end Lead Brandon Tong and Nicholas Stepanov will be responsible for the client-side responsiveness of the website.

2. Personas and Use Cases

Persona 1 : Guest

- Student working on school project.
- Wants easily accessible stock photos without worrying about plagiarism or fees.
- Likes to browse photos and will click on related images.
- Has never touched a camera that is not attached to a phone.
- Is comfortable with technology but rarely uses advanced features.
- Dislikes ads and obtrusive content, especially on mobile devices.
- Knows about the main competitors to Stock Overflow, but has never used them.

Scenario and Goals: Working on school project, requires professional photography to complete it. She's on a time constraint, so prefers convenience to quality. Has only a rough idea of which type of photo she wants, so would browse and search extensively.

Persona 2 : User

- Freelance photographer looking to showcase and advertise his work.
- Has technical knowledge that is limited to cameras and photo editing software.
- Has used competitors' sites before, but is still looking for alternatives.
- Wants quick response times to his postings and questions.
- Motivated by comments and ratings on his work.
- Would like control over how his photos are presented and searched for.
- Visibility is a big concern of his, wants to be seen by many guests.

Scenario and Goals: Freelance photographer looking for exposure. He is used to other stock photography websites but is always looking for alternatives. He would be very active on the site as a content provider.

Persona 3 : Admin

- Amateur photographer and early user of Stock Overflow.
- Can only moderate for 8 hours a week, with other obligations.
- Would like to post to the site as well as moderate.
- Is not great at navigating technology but is willing to learn.
- Has an eye for detail, can catch mistakes quickly.
- Wants to work quickly and efficiently.
- Has never used a competitor site, or worked as an admin before.
- Easily distracted when focus is lost or has to click too many things.

Scenario and Goals: Amateur photographer working as site admin part time. Needs to work quickly with many other obligations. Wants to contribute to content as well.

Use Cases

- **Register in the system**

The guest wants to register in the system and have login credentials. He clicks “Registration” button and is redirected to the Registration page. The only required fields he needs to enter are: nickname, email and password. The email is not used for any other purpose, but to prevent bots from massively occupying the website. The email has to be valid and there shall at most be only one nickname per email. If the information entered is valid, a new account is created and new credentials are added to the system that shall be recognized on login. A valid registration does not require any authentication other than a valid email, and the login process is automatically handled upon registration.

- **Search**

The guest visits the site to find photos for a school project. They can search by category or search for specific words or phrases. They decide to search for ‘flower’ but make a typo, ‘flowre.’ The search still pulls up results for flowers as the search is not exact. The user sees their mistake on the result page and corrects it.

- **Search by Category**

The guest selects a category, ‘Nature’. On the result page, a list of postings in that category appear. If they search for ‘flower’ again, only results in the Nature category appear. They can switch categories or return to searching all categories, the default.

- **Post as Guest**

The guest decides to upload a photo to the site. They navigate to the Upload Photos page, and follow the required steps. They give the photo a name, some descriptive tags, and upload the file. When they select the Post option, they are prompted to login or register. Information is saved when they return as a User. Once logged in, they can post the photo and receive information about the approval process.

- **Download as a Guest**

A guest has selected a posting he is interested in downloading. Upon clicking “Download full image” button he is prompted to login or register. Once the User has been logged in, the download of the appropriate image shall begin.

- **Admin Features**

An admin visits the site's administration page. They are prompted to login. They return to the main admin page, which shows a list of photos requiring approval. When selecting a photo, they can analyze its content, tags, and description. If they approve the photo, it will be displayed on the user side. If they deny the photo, they must provide a reason for doing so, which will be sent to the photo uploader. After approving or denying a photo, the admin can either go straight to the next photo to be approved, or return to the main administration page.

3. Data Definitions

Guest: Unregistered user visiting the website. Can browse through approved postings with only thumbnail representations of content visible, but cannot upload or download content.

User: Registered user who logged into the website with own email and password. User has his own ID that can be used to access a unique user page for the particular user. A User has all the privileges of Guest, in addition can submit Postings and download the content of all Approved Postings. The User can delete any posting uploaded by himself.

Admin: A type of user who was pre-approved by the website management and has all the privileges of a User, in addition can view all Pending Postings and has the privileges to Approve or Reject postings made by users based on their content.

Posting: An individual submission of an image to be posted on the website. The posting is composed of the posting ID, media content (photo), its category and search tags as well as the reference to the author - the user who uploaded the posting. A posting can be visible/invisible to visitors of the website based on its Post Status and visitor type: Guest/User/Admin.

Posting Status: Possible values: Pending, Approved, Rejected. A Pending Posting is visible only to the User who posted it and an Admin. The Admin is able to change the Post Status of a Pending Posting to Approved or Rejected. An Approved Posting is visible to all visitors of the website. A Rejected Posting is only visible to the User who submitted the posting and can be modified and resubmitted or deleted. Once a Rejected Posting is resubmitted its Posting Status is Changed to Pending.

Registration page: The page that prompts a Guest to enter his nickname which is used for login, name and password, as well as an optional description. When all fields are completed with valid entries the Guest can complete the registration and have his information saved in the system.

When registration is complete the Guest can log in through Login page with his credentials and become User.

Login page: The page that prompts a Guest to enter previously registered nickname and password. Once Guest enters valid credentials and clicks login button, the Guest will become a User and will be recognized by the system to be granted appropriate privileges.

4. Initial list of functional requirements: Brandon

Priority 1 (P1): Critical, do not launch without.

Priority 2 (P2): Important, it would be really good to have. Don't delay ship date if not available.

Priority 3 (P3): Opportunistic, nice to have. Candidate for next release.

System

- (P1) System shall have a homepage.
- (P1) System shall have about pages.
- (P1) System shall have a login page.
- (P1) System shall have a list of categories.
- (P1) System shall have a user page.
- (P2) System shall have search bar.

Guest

- (P1) Guests shall be able to search using image categories.
- (P2) Guests shall be able to search using search bar.

User

- (P1) User shall be able to do all the functions of the guest.
- (P1) User shall be able to create an account.
 - (P1) User shall be able to download images.
 - (P1) User shall be able to upload images.
 - (P2) User shall be able to favorite images.
 - (P2) User shall be able to rank images.

Admin

- (P1) Admin shall be able to do all functions of the user.
- (P1) Admin shall be able to approve pending photos.
- (P1) Admin shall be able to manage photos by directly adding, editing, and deleting.
- (P1) Admin shall be able to manage users and user data.

5. Initial list of non-functional requirements

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team but all tools and servers have to be approved by class CTO).
2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of all major browsers: Mozilla, Safari, Chrome.
3. Data shall be stored in the team's chosen database technology on the team's deployment server.
4. No more than 50 concurrent users shall be accessing the application at any time
5. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
6. The language used shall be English.
7. Application shall be very easy to use and intuitive.
8. Application shall render well on mobile devices (UI shall be responsive)
9. Google analytics shall be added
10. No e-mail clients shall be allowed
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated.
12. Site security: basic best practices shall be applied (as covered in the class)
13. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
14. The website shall prominently display the following exact text on all pages *"SFSU Software Engineering Project CSC 648-848, Summer 2018. For Demonstration Only"* at the top of the WWW page. (Important so as to not confuse this with a real application).

6. Competitive analysis: AN

Sites	About	Subscribe	Editing Tools	3rd Party Image Hosting	Appropriate-Filtered Images
Flickr	✓	x	✓	✓	x
Google Photos	✓	✓	✓	x	x
Imgur	✓	x	x	✓	✓
Photobucket	✓	✓	✓	✓	✓
Stock-Overflow	✓	x	✓	✓	✓

The landscape of web image hosting is competitive, but we believe our product has features that provide some competitive advantages that will lead to success. As with most of these image hosting websites, a user registration is required. Ours will be no different, but our registration will be simple and straightforward without an email requirement, making it quick and easy as well eliminating the possibility of users receiving spam. The website will also be completely free compared to some other websites that require a premium membership. Additionally, many of the other websites do not offer the ability of for an admin to approve of a photo before it is posted, resulting in the possibility of inappropriate photos posted for public view. All photos hosted on our site will be needed to be approved before getting posted for public use.

*Unfinished will add more.

7. High-level system architecture

Server Host: Heroku 1xCPU 512 MB RAM

Operating System: Ubuntu 16.04 Server

Database: PostgreSQL 10

Web Server: Heroku

Server-Side Language: Node.js version 8.11.3

Additional Technologies: Web Framework: Flask

IDE: Netbeans,

Web Analytics: Google Analytics

8. Team

Team Lead

Andrew Andrawos

Backend Team

Lead: Scott Penn

An Dao

Anita Zhen

Frontend Team

Lead: Brandon Tong

Nick Stepanov

9. Checklist

- Team found a time slot to meet outside of the class ✓
- Github master chosen ✓
- Team decided and agreed together on using the listed SW tools and deployment server ✓
- Team ready and able to use the chosen back and front end frameworks and those who need to learn and working on it ✓
- Team lead ensured that all team members read the final M1 and agree/understand it before submission