Software Engineering
CSC648/848 Summer 2018

InfiniteImage

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1. Executive Summary

InfiniteImage is a California based startup focused on empowering people everywhere to create, discover, and interact through images and words. Founded in 2018, InfiniteImage is headquartered in San Francisco CA. We envisioned a platform through which ordinary people can exchange photos and ideas. With your support through investment, you could enable us to bring this vision to fruition.

InfiniteImage offers a unique opportunity to fund a development project and later provide investment capital for a photography exchange platform. The goal of the initial phase is to develop the website and all other systems necessary for functional operation. Though similar services such as GettyImages, ShutterStock, and Flicker among others exist, not many can boast the same level of functionality and ease of use as InfiniteImage. We enable our registered users to upload images by posting it according to category. Unregistered users will be able to browse through all publicly accessible pictures, however only registered users also will be able to download the images posted by other users given that they have permission from the owner. Users will also be able to search through all images that have been uploaded with public access, as well as use filters to narrow down their searches.

Our dedicated development team consists of seven highly motivated individuals. Each member of this team brings forward unique skills and experiences.They strive to create an image sharing platform which is user friendly, efficient, and marketable.

2. Personas and Use Cases

John—Visual Art Student
- About John:
  - Very diligent student
  - Loves photography. Especially taking pictures of nature
  - Embraces creativity
  - Familiar with photo editing tools
  - Impatient when looking for royalty-free images

- Goals and scenario:
  - Needed images for a project and decided to search the internet
  - He is starting to get irritated because he is spending too much time researching whether or not the images are free
  - John would appreciate it if the website separated the free images from the non-free images

Jason—Art Professor
- About Jason:
  - Very organized and precise
  - Good command of art software and applications
  - Enthusiastic about teaching
  - Helps students in and out of class
  - Develops his own unique assignments
  - Resents to dealing with cluttered websites

- Goals and scenario:
  - Need images to develop an assignment for his students so, he searches the internet
  - He gets annoyed when scouring images on unorganized websites and quickly looks elsewhere
  - He wishes there was a website that was well organized so he can swiftly find images relating to his needs

Steve—Website Administrator
- About Steve
    - Enthusiastic about work
    - Volunteered as an admin for small forums in his free time
    - Has proficient WWW skills
    - Often around his computer
    - Studious; very familiar with terms, rules, and guidelines
- Goals and Scenario
    - Recently hired for InfiniteImage
    - Works entirely from a web interface.
    - Does not know anything about the back-end of the website
    - Needs the proper tools and modules to carry out his duties as an administrator

Fred—Professional Photographer
- About Fred
    - Professional Photographer, specializing in nature photography
    - Travels all over the world to visit different countries to photograph
    - Blogs about his photography and travels
    - Has good WWW skills
    - Active member of online photography community
    - Browses many different competitors (sites, forums, etc.)
    - Expects professionalism; will quickly leave if sites lack basic functionalities or looks unprofessional
- Goals and Scenario
    - Wants to spread awareness of his portfolio
    - Decides to post sample photographs on the internet as royalty free
    - Wants his identity associated with his images
    - Wants to be able to advertise his blog on his image in the description

John is a visual arts student. He has already a decent understanding of how to use photography software materials and tools. However, he also needs to free **images** for his art project. He looks online for material and stumbles across InfiniteImage and immediately sees a wide variety of **image thumbnails**. John then **searches** the website and finds an abundance of quality images for him to use. He then places his most preferred into a **cart** and attempts to **download** the images at full resolution. Subsequently a **login/signup** window appears and he then starts entering his information which requires little to no effort. Afterwards, he logs right back in and is already **downloading** the images to use for his project.

Jason is an art professor currently working at a university. He often creates custom assignments for his students and requires **royalty free images** for his educational purposes. Jason often finds images that he likes but, runs into issues with images having **copyright restrictions**. Surfing the web he finds InfiniteImage a stock photo website. He begins **searching** the site for images that would pertain to the assignment he will be creating. After a quick search he finds an image that he would like to use and clicks on the **thumbnail.** A **login/signup** window appears and he enters his information, logs back in, and continues to gather images for his assignments. During his lecture he informs his students to go to InfiniteImages for quality and free images to use for their homework.

Steve is an an **administrator** hired for InfiniteImage. He enters his login credentials to an account specially marked as an **administrator**. From an **admin module** he is able to view **pending** images, awaiting approval before going live on the site. He reviews the image and decides whether or not to approve it, determining if it possibly violates any Terms and Conditions that are agreed upon when users sign up. During the review, he receives **admin** options to delete the image, and a message stating the violation.

Fred is a professional photographer. He wants to **post** some of his photographs to InfiniteImage. He is already very familiar with competing stock photography websites and knows he must own an account before posting and quickly locates the **login/signup** page. He creates his account and logs in. From the home screen, he is able to find the **post image** button. He is brought to a **post image window** where he may select an image file from his hard drive to post, as well as input information about the photo, such as description and categories/tags. When he is finished, he posts the image and waits for **approval**.

3. Data Definitions

Registered Users: shall able to view and download photos that are uploaded by photographers.
  Username: user's identifier.
  Password: user's password
  Friends: group of other registered users that a particular user will have an ease of access to their content.
  Cart: a selection of photos that the registered user will be able to add/remove photos to before downloading.

Non-Registered Users: shall only be able to view photos, must register in order to download any photos.

Administrative Users: shall be able to approve all photos before they go live on the site, as well as has access to view all content and is able to remove content as they see fit.
  Username: user's identifier.
  Password: user's password
  Pending: Photos that haven't gone live on the site waiting for approval.

Photographer: user that is able upload photos to website.
  Album: Collection of photos organized into a single group by Photographer
  Size*:* amount of photos in album
  Date: date of album upload

Photos: accessible to be viewed by all users, and downloadable by registered users.
  Thumbnail: smaller version of image.
  Date: date of the photos upload.
  Location: where the photo was taken
  Tags: keywords added to the image in order for search
  Photographer: name of photographer who took photo for searching purposes
  Caption: text description of photo.
  Licensing: license and copyright information for photo.

User Count: amount of users registered to the site.

4. Initial List of Functional Requirements:

Functional Requirement

Home Page - The homepage will be filled with a search engine and most popular photos for the non registered users. And in term of registered users, the home page will be filled with recent friends' uploaded photos, notifications, and also a search engine.

Upload - The ability to upload photos by posting it to a specific category so visitors can search for it and see it easily. That will include the ability to add tags associated with the post, and a title.

Download - The ability to download photos from the website. The user has to be registered and logged in in this case.

Register/Login - any user will be able to search and browse through the photos. However, in order to either upload or download photos, the user has to register by signing up and then log in to the website.

Category - Having categories will make the posts organized and easier to access through the web engine. The registered users will be able to categorize their photos if needed.

Admin - An administrator account who approves/disapproves user content(images and tags) that is uploaded. Notifies users of time taken to complete this request. Cannot alter tags once they are posted.

Search - The website will have the ability to search via the search engine to find photos and a specific registered user in order to find the photos he uploaded.

Tags - When registered users upload a photo they can post tags along with it describing relevant keywords to the photo.

Watermark - In order to preview an image full-size and require users to log in, display watermark as an overlay.

Filters - To help users search for a more relevant results. Filters can be the upload date, category, user, and size of the photo.

Friends - Once registered and logged in, one can add friends via their username so he can get notified whenever a friend uploads a new photo and see his uploaded photo.

5. 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 <u>prominently</u> display the following <u>exact</u> 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

Feature/Name of competitor	GettyImages	ShutterStock	Fotolia	InfiniteImage
Simple & Effective Home Page	Y	Y	Y	Y
Images / Other products like Videos	Y/Y	Y/Y	Y/Y	Y/N
Search/Adv Search	Y	Y	Y	Y
Categories (Nature, Animals, etc.)	N	N	N	Y
# of Search Results	Y	Y	Y	Y
Watermark	Y	Y	Y	N
Lazy Registration	Y	Y	Y	Y

Although there are many similar products available out there, at first glance they are all too similar, primarily a paid service, and usually under some parent company. What InfiniteImage offers to users is: a free image library, with seamless navigation and an intuitive website layout. Many competitors offer additional products such as Videos and, Editing tools and even Music., but sometimes to stand out its better to focus on one aspect and make it great. We plan to distinguish also by adding Categories for browsed search and allow users to "window shop", and adding a watermark is a possibility but not of the highest priority yet.

7. High-level System Architecture

1. Frameworks
   a. Ruby on Rails 5.2.0
   b. Bootstrap 3.3.7
2. Backend Language
   a. Ruby 2.5.1
3. Tools
   a. MySQL database 8.0
   b. Netbeans IDE 8.2
4. Operating System
   a. Linux AMI 2018.03.0 (HVM)
5. Supported Browsers
   a. Chrome 66.0.3359 and 67.0.3396
   b. Firefox 60.0.1 and 60.0.2
6. Deployment Platform
   a. Host: Amazon Web Service (AWS)
   b. Web Server: Apache 2.4.33

8. Team

Zac Henney - Team Lead

Andre Leslie - Back End Lead

Teodora Caneva - Front End Lead

Paul Ancajima - DevOps

Abdullah Amir - Front End

Joe Phabmixay - Back End

Rohit Nair - Back End

9. Checklist

- Team established meeting times: DONE
- Github master chosen: DONE
- Software tools and deployment server chosen: DONE
- Team ready to use back and front end frameworks: ON TRACK
- Team has read and approves milestone 1 document: DONE