Final Report

Study Abroad Experience Reviews
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1. **Two paragraph summary of the project as implemented, including the main customer need and how the application meets it, including who the stakeholders are. This will contrast to what you wrote in Iteration 0.**

   TripAgvisor is an application for students who are enrolled in study abroad programs and desire to share their reviews about the places they have visited. This enables other students to easily access recommendations and make sound decisions if they plan to enroll in the program. Students can add their experiences, pictures of the places they visit, add some tips etc. through the application. Faculty and admin have access to monitor, ban, grant permissions to users, upload multiple background images as well home page images. This is a legacy project, hence it had some pre-existing features, including the ability to add an experience, rate an experience, log in using a TAMU email, etc.

   We incorporated various features into the project to enhance its functionality and better serve the customer's needs. Some of the major functionalities, based on customer requirements, are as follows:
   a. Allowing users to upload multiple images while adding new experiences
   b. Adding a gallery of images to the program page's gallery tab to enable users interested in a particular program to view images of it. If a user clicks on any image, they will be redirected to the actual post.
   c. Sending an automated email to a banned user explaining why they were banned.
   d. Automatically changing the background image on each refresh/reload.
   e. Added the location of experiences.
   f. Added a bookmark feature that enables users to bookmark any post and review them.

   To achieve these features, we identified several sub-user stories and tasks that needed to be implemented. To manage these tasks effectively, we established

weekly goals and reviewed our progress regularly. This helped us stay on track, identify any potential roadblocks early on, and adjust our approach as needed. Additionally, it allowed us to maintain open communication with the client and keep them informed about our progress throughout the development process. The project stakeholders include the students, faculty, and admin users responsible for monitoring the application's usage. Overall, this project provides an excellent solution to the main customer need of sharing travel experiences and recommendations among study abroad students. With its added features and functionality, the application offers an enhanced user experience and promotes a sense of community and collaboration among students.

2. **Description of all user stories (including revised/refactored stories in the case of legacy projects). For each story, explain how many points you gave it, explain the implementation status, including those that did not get implemented. Discuss changes to each story as they went. Show lo-fi UI mockups/storyboards you created and then the corresponding screen shots, as needed to explain the stories.**
   - If the feature is highlighted in green, it means that this feature is completed and deployed.
   - Total number of story points completed: 92 points

1. Feature: Get Directions to Experience on Map - 3 Points
        - 1.a) Feature: Add Location of an Experience - 2 Points
        - 1.b) Feature: Google Map Preview - 2 Points
        - 1.c) Feature: Redirect to Google Maps - 2 Points
        - 1.d) Feature: Search for the experience based on the location - 2 Points
2. Feature: Add Bookmark on Reviews - 3 Points
        - 2.a) Feature: Bookmark an experience - 3 Points
        - 2.b) Feature: View bookmark tab under profile - 2 Points
        - 2.c) Feature: View all of your saved bookmarks - 2 Points
        - 2.d) Feature: View the original post of a bookmark - 2 Points
        - 2.e) Feature: Unbookmark experience from the Bookmarks page - 2 Points
        - 2.f) TASK: Refine how bookmarking an experience looks
3. Feature: Send automated email to banned users - 3 Points
4. Feature: Gallery of Images - 2 Points
        - 4.a) Feature: View Image Gallery Button - 1 Point
        - 4.b) Feature: View all images of a program in a gallery - 3 Points
        - 4.c) Feature: Redirect to an experience from an image - 3 Points
        - 4.c) Feature: Experience Details when hovering over image in gallery - 3 Points
        - 4.d) Feature: Viewing selected image in Carousel - 2 Points

1. **Feature: Get Directions to Experience on Map - 3 Points**
   - As a user
   - So that I can locate specific attractions
   - I want to use a map tool to find it.

- **1.a) Feature: Add Location of an Experience - 2 Points**
    - As a user,
    - So that I can add the location of my experience
    - I want to click a button that allows me to add the location
- **1.b) Feature: Google Map Preview - 2 Points**
    - As a user,
    - So that I can see the posted location
    - I want to see the embedded map location under the experience
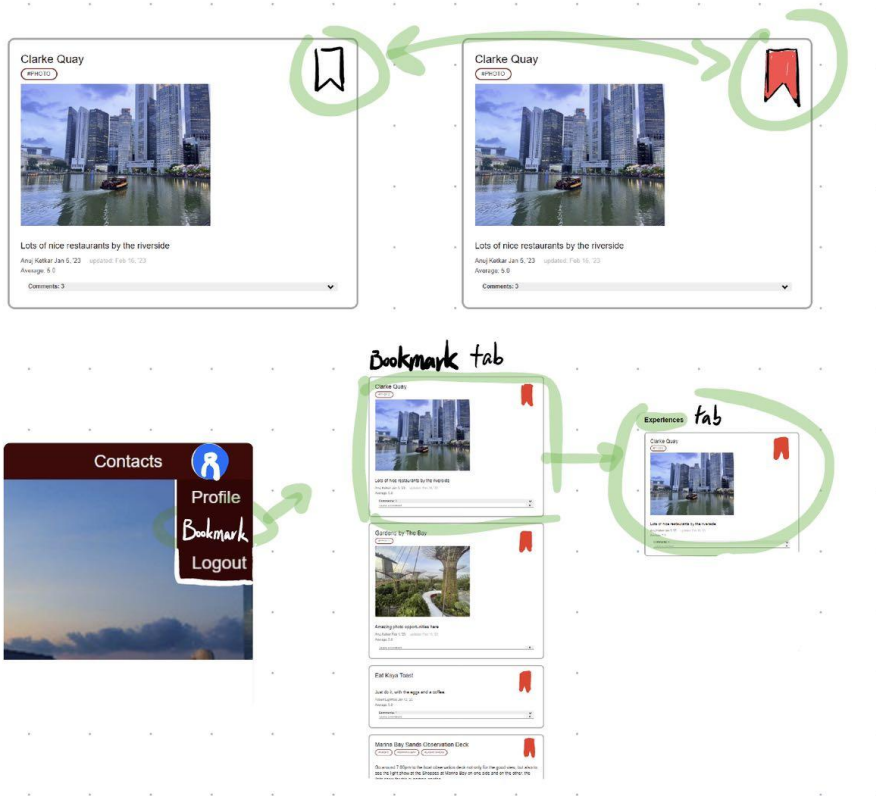- **1.c) Feature: Redirect to Google Maps - 2 Points**
    - As a user,
    - So that I can navigate to a specific location,
    - I want to be redirected to Google Maps to map my way there
- **1.d) Feature: Search for the experience based on the location - 2 Points**
    - As a user, so that I can see related experiences, I want to search experiences by location
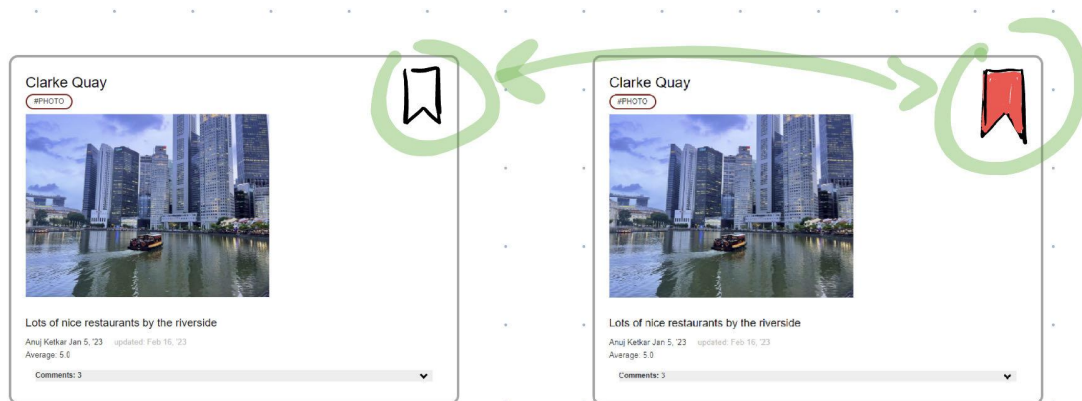

2. **Feature: Add Bookmark on Reviews - 3 Points**
    - As a user
    - So that I can remember interesting locations or reviews
    - I want to be able to bookmark posts.

2.a) Feature: Bookmark an experience - 3 Points
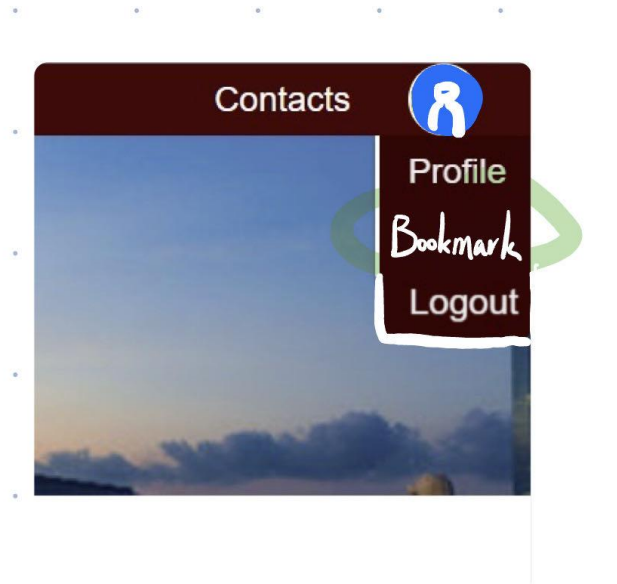
- As a user,
- If I want to save an experience,
- I want to click on the bookmark icon and it should save the experience under my user profile.
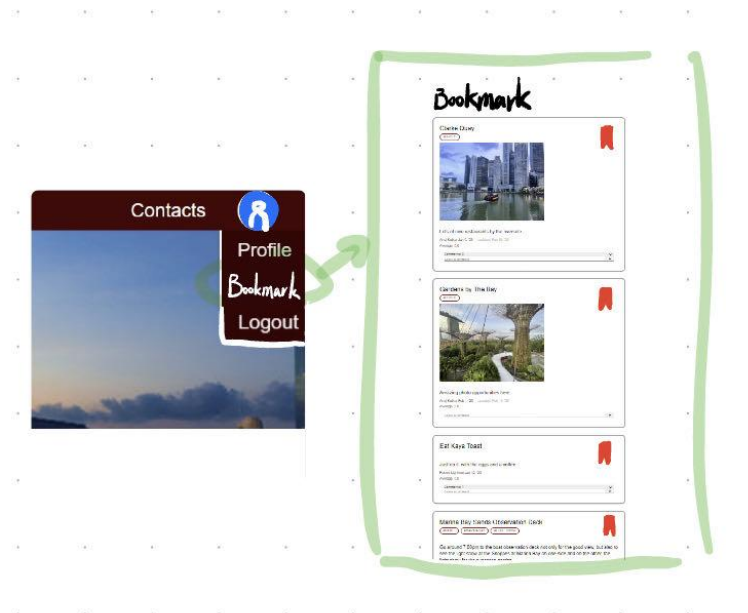
- As a user
- If I want to check all the posts that I bookmarked,
- I want to have a tab to navigate me to a separate page.

- As a user
- If I am looking for a post I bookmarked,
- I want to open a page with all of my saved bookmarks.

  - As a user,
  - If I select an experience from the bookmark page,
  - I want to be redirected to the original post of that bookmark
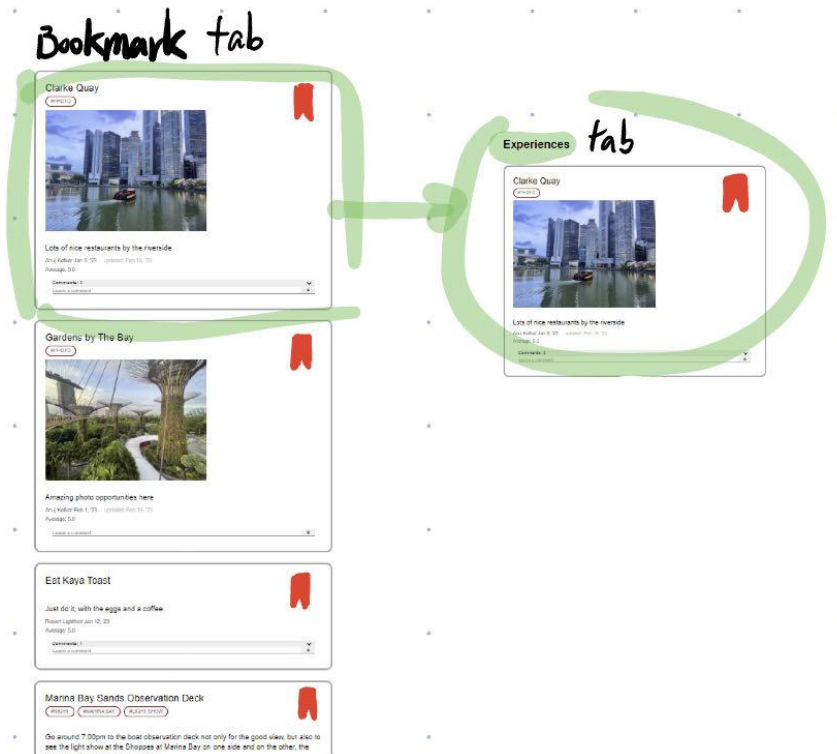
- **2.e) Feature**: Unbookmark experience from the Bookmarks page - 2 Points
  - As a user,
  - If I don't want an experience saved anymore and I want to stay on the Bookmarks page,
  - I want to be able to unbookmark it from the Bookmarks page
- **2.f) TASK:** Refine how bookmarking an experience looks

3. Feature: Send automated email to banned users - 3 Points
  - As an admin,
  - when a user is banned,
  - I want to send an automated email to the user explaining why they were banned

1.
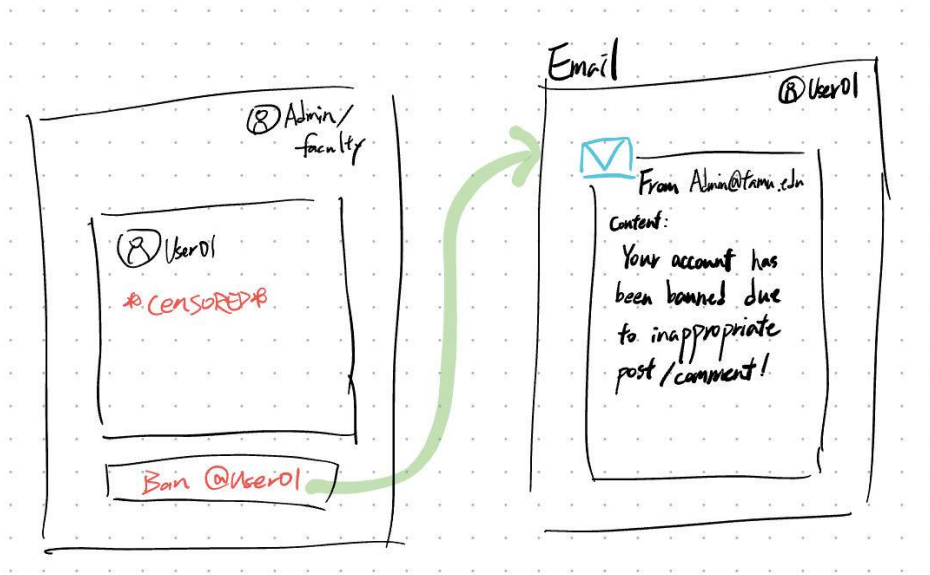
As a student,

so that I can find experiences that I might be interested in,

I want to view a gallery of images in the gallery tab of the program page.

- **4.a) Feature: View Image Gallery Button - 1 Point**
- As a user,
- If want to see all of the images related to a program,
- I should see an Image Gallery Button
- **4.b) Feature: View all images of a program in a gallery - 3 Points**
- As user,
- If I am viewing the gallery of images,
- I should see all images from each experience collected and posted in the gallery.
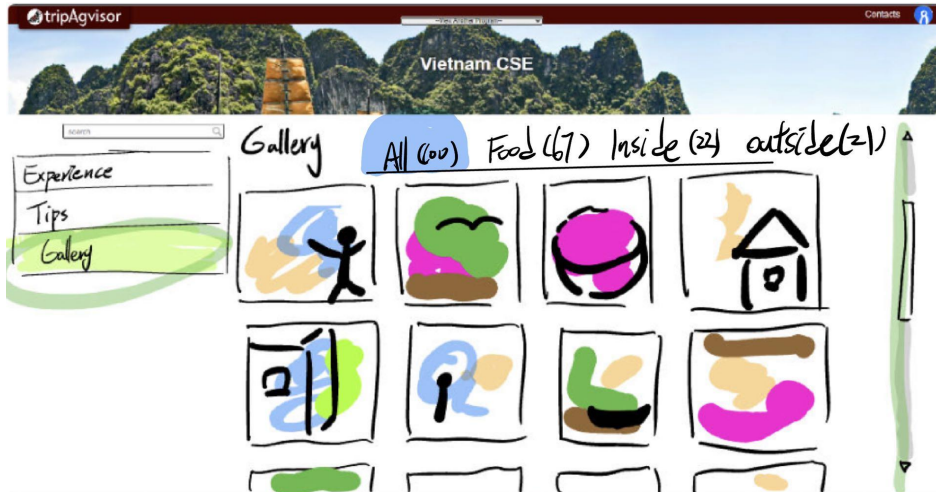
- 4.c) Feature: Redirect to an experience from an image - 3 Points

- As a user,
- If I see an interesting image in the program gallery,
- I want to redirect to the original post of that image.

- 4.c) Feature: Experience Details when hovering over image in gallery - 3 Points

- As a user, when I hover over an image in the gallery, I want to be able to view a popup of the experience details

- **4.d) Feature: Viewing selected image in Carousel - 2 Points**
    - As a user, when redirecting to a post, the image selected from the gallery should be the first image that I see.
    - For example, if there are 3 photos in the carousel, and the 2nd photo was selected from the image gallery page, when the user is redirected to the experience, the user should see that 2nd photo (the one they selected) right away (as opposed to automatically seeing the first image in the carousel)
- **4.e) Feature: Popup modal to view full image - 2 Points**
    - As a user, when clicking on an image on the experience page, I should be able to view the full image in a popup modal

5. Feature: Flag images as inappropriate - 3 Points

- As a user,
- If I see an inappropriate image in someone's post,
- I want to flag that specific image as inappropriate and have it hidden from my view.

- **5.a) Feature: Flag image - 2 Points**
    - As a user,
    - If I see an inappropriate image in a post,
    - I should be able to flag the image for admins to review
- **5.b) Feature: Hide image - 3 Points**
    - As a user,
    - If I flag an image as inappropriate,

- The image should be hidden from my view so I cannot see it.

6. Feature: Allow users to post multiple images - 3 Points

- As a user,
- I want to be able to upload multiple images
- So that I can showcase my experience in a visual way
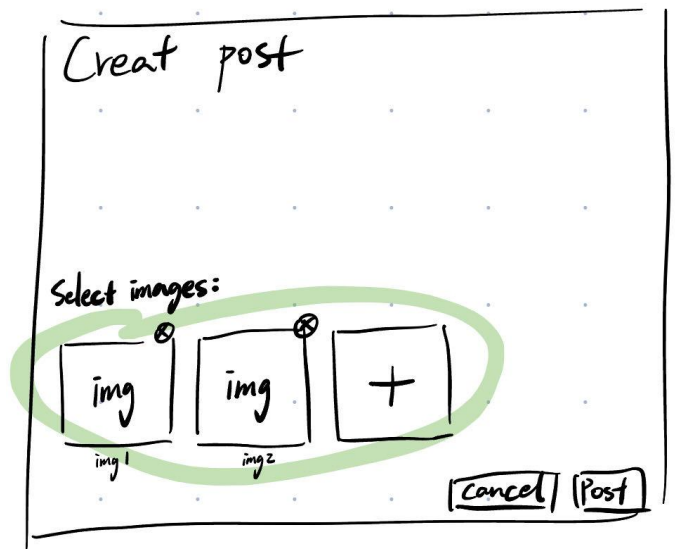
- **6.a) Feature: Upload multiple images - 3 Points**
    - As a user,
    - So that I can share many images of my experience,
    - I want to upload multiple images
- **6.b) Feature: Post multiple images - 3 Points**
    - As a user,
    - Once I finish uploading images,
    - I want to post the images
- **6.c) Feature: Specify that only image file types may be uploaded by users - 2 Points**
    - As an owner
    - So that that users may only upload images,
    - I want users to be restricted to only image file types for uploads
- **6.d) Task: Client recommendations for images**
    - Adjustments need to be made based on the professor's feedback
        - All images types
        - Carousel should not automatically slide
        - Window size of carousel should accommodate the different images sizes

- Controls should not overly an image
- **6.e) Feature: Edit images - 3 Points**
  - As a user,
  - If I want to edit images from an experience,
  - I should be able to add or delete the images when I edit the experience.
- **6.f) Feature: Displaying images - 2 Points**
  - As a user, when I am viewing an experience with only one image, I should not see carousel buttons
  - As a user, when I view the images, I should be able to see images neatly displayed in a carousel

7. Feature: Use random background image for landing page - 2 Points

As an admin,

To share a variety of images on the landing page,

I want a randomly selected image to appear as the background.
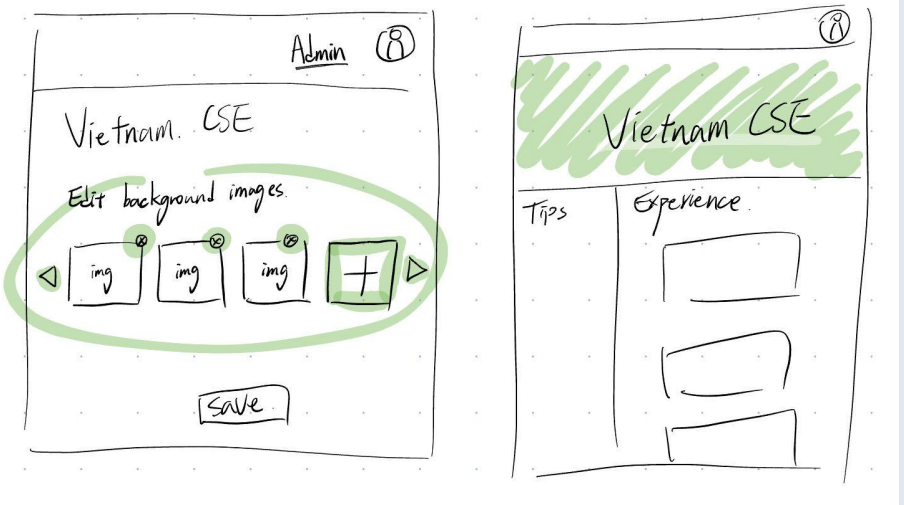
- **7.a) Feature: Upload multiple landing page images - 3 Points**

  As an Admin,
  I can upload multiple background images for a particular program
  either during creation of the program or edit after the creation of the program.
- **7.b) Feature: Randomly select landing page image - 3 Points**

  As an Admin,
  After I add multiple background images for a program,
  I want an image to be randomly selected as the background for that program.

- When user is not logged in, and they refresh the page, they should be able to see a randomly selected image for the background
- As an admin, after adding images for the "home" page, I want an image to be randomly selected as the background

9. Additional tasks

- **Return: Fix "return" button when clicking on experience to make it redirect to the program page - 2 Points**
    - For example, clicking return after editing an experience redirects you back to the edit page
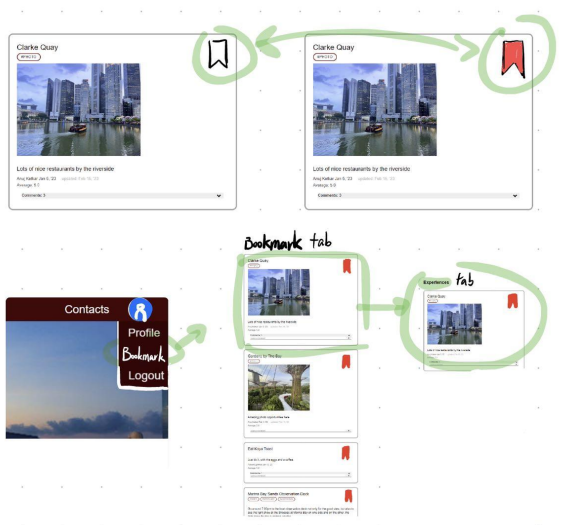
User story history (changes made):

Iteration 1:

Feature: Get Directions to Location on Map

- Changes made: Renamed this feature for better clarity about what it is.

Feature: Add Bookmark on Reviews

- Updated the storyboard/mockup to more clearly demonstrate the UI.

Feature: Send automated email to banned users

As an admin,

when a user is banned,

I want to send an automated email to the user explaining why they were banned

- Updated both the feature name and user story to specify that this is an automatic (not manual) process and clarity.

Feature: View Gallery of Images for an Experience

As a student,

so that I can find experiences that I might be interested in,

I want to view a gallery of images that have been attached to experiences.

- Updated both the feature name and user story for better clarity.

*The following are **NEW** features and user stories that were added:*

Feature: Bookmark an experience

Feature: View bookmark tab under profile

Feature: View all of your saved bookmarks

Feature: View the original post of a bookmark

Feature: Flag images as inappropriate

Feature: Allow users to post multiple images

Feature: Use random background image for landing page

Feature: View all images of a program in a gallery

Feature: Redirect to an experience from an image

Iteration 2:

*The following are **NEW** features and user stories that were added:*

- Get Directions to Location on Map:
  - **1.a) Add Location of an Experience**
    - As a user,
    - So that I can add the location of my experience
    - I want to click a button that allows me to add the location
  - **1.b) View location on map**
    - As a user,
    - So that I can see the posted location

- I want to see the location under the experience
- **1.c) Redirect to Google Maps**
  - As a user,
  - So that I can navigate to a specific location,
  - I want to be redirected to Google Maps to map my way there

Iteration 3:

- Created an official document of all user stories to keep track of everything so that we had everything well organized, plan on which features to focus, and figure out what tasks can be delegated to team members.
- Renamed some features, such as Get Directions to Location on Map to Get Directions to Experience on Map
- We did create some new sub user stories for **6. Feature: Allow users to post multiple images**
  - **6.a) Feature:** Upload multiple images
    - As a user,
    - So that I can share many images of my experience,
    - I want to upload multiple images
  - **6.b) Feature:** Post multiple images
    - As a user,
    - Once I finish uploading images,
    - I want to post the images
  - **6.c) Feature:** Specify that only image file types may be uploaded by users
    - As an owner
    - So that that users may only upload images,
    - I want users to be restricted to only image file types for uploads

Iteration 4:

- Slight change to the user story for the "Allow users to post multiple images" feature for better clarity, especially for testing:
  As a user,
  I want to be able to upload multiple images
  So that I can showcase my experience in a visual way
- The same thing was done to the "Gallery of Images" feature; we wanted to specify it so that it was more clear
  As a student,
  so that I can find experiences that I might be interested in,
  I want to view a gallery of images in the gallery tab of the program page.

Iteration 5:

- While nothing was changed, we did add and implement a new user story: "Random Image for main program selection page," which is similar to the "Use random background image for landing page feature." This feature is specifically for the "home" page the user sees before they are logged in. Only admins can control this feature by uploading images to a pool of images to be randomly

selected for all users to see; a new image is displayed each time the page refreshes.
- New feature requests were made for us to document in PivotalTracker for future groups, including "flagging for a reason." There are also some other last minute feature requests that may also be carried on by future groups, such as displaying an experience's post details in a popup when hovering over an image in the gallery.
- Revised the following user story for better clarity:
    - **Feature: Google Map Preview**
        - As a user,
        - So that I can see the posted location
        - I want to see the embedded map location under the experience

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4. **For legacy projects, include a discussion of the process for understanding the existing code, and what refactoring/modification was performed on the code, in addition to the user stories listed above.**

● In Iteration 0
    ○ The overall strategy for learning and improving the prior code involves us with communicating with the other team working on this project. The study abroad experience project is a little bit of a special case because there is an undergraduate team still actively involved in the project and we will have to work in parallel with them while keeping the same main goals in mind. We don't want to implement the features they are working on, nor do we want them to implement the features we want to create and work on. While we don't want to implement their features, we will have to maintain them once they have deployed them as we work towards a live hand-off mid March, as this is when the undergraduate team will be leaving the project. With this in mind, we plan on keeping in contact with the other team to work on the project as collaborators until we fully take over the project. This will be done by completing check ins with the other team, communicating with them when we have issues, especially as we work towards deploying the current state of the project that they have been working on, working with the shared Pivotal Tracker to delegate and keep track of tasks, and work with the professor's recommendations on how things should be generally done since this "live hand off" has not really occurred before during the semester.
    ○ After the initial meeting with the undergraduate team, we have gained some insight as to where everything is located and organized, including

two separate environments for the project: a main one that gets deployed, and a "staging" environment for testing as an intermediate step before deployment. We learned that their main goals are to implement a flagging system in which users can flag a post deemed as spam or inappropriate so that a faculty member or administrator can review the post and choose to delete the post and/or band the user, as well as implement a faculty user role. We plan on implementing/improving the map tool and hashtag filtering user stories from the previous group, as it seems like they will be unable to implement these before their deadline.

- In Iteration 1
  - Originally we wanted to implement the "filter by hashtag" feature, but the undergraduate team still working on this project ended up implementing it, so we deleted that user story.
  - The main parts of the code being refactored during this iteration is the code related to uploading images and the schema, as we are adding a bookmarking feature to it.
- In Iteration 2
  - Working on refactoring how an image is being added to each experience so that we can add multiple images.
  - Refactored cucumber tests.
- In Iteration 3
  - We are completely refactoring how images are being uploaded, as the previous implementation was no longer properly functioning. During this process, we attempted to create a solution using Shrine, then CarrierWave, and finally, created a new s3 bucket for images.
- In iteration 4
  - For this iteration, no user stories/code was refactored.
- In iteration 5
  - For this iteration, no user stories/code was refactored.

5. **List who held each team role, e.g. Scrum Master, Product Owner. Describe any changes in roles during the project.**
   a. Scrum Master: Teja Swaroop Boppana
   b. Product Owner: Kylee Friederichs

6. **For each scrum iteration, summarize what was accomplished and points completed.**
- In Iteration 1
  - Allow users to upload multiple images
  - Add bookmark tab under the profile
  - Interact with bookmark icon

- ○ View the original post of a bookmark
- ○ View all of the saved bookmarks for a particular user
- ○ Save bookmark to bookmarks page
- ○ (Experience-Carousel) Allow users to post multiple images
- In Iteration 2
  - ○ Get Directions to Location on Map
  - ○ Use random background image for landing page
  - ○ Fix Heroku deployment on different browsers
- In Iteration 3
  - ○ Create cucumber tests for upload multiple images feature
  - ○ Create cucumber tests for bookmark feature
  - ○ Create cucumber tests for location to experience feature
  - ○ Upload images for program landing page
  - ○ Redirect to Google Maps
  - ○ View experience location on map
  - ○ Add location of an Experience
- In Iteration 4
  - ○ Database for bookmarks feature
  - ○ Database to store images
  - ○ Create a new S3 bucket for images and update configurations
  - ○ No Direct On Click for Images
  - ○ Make sure that uploaded images are of a certain file format
  - ○ Google Map Preview
  - ○ Merge the code from UMaas to TripAgvisor repository
  - ○ Fix older cucumber tests and improve code coverage

- In Iteration 5
  - Redirect From Gallery to Experience
  - View All Images
  - Gallery of Images
  - Upload images for program landing page
  - View experience location on map

7. **List of customer meeting dates, and description of what happened at the meetings, e.g. what software/stories did you demo.**
   a. Met with the customer every Friday at either 11:15 am or 11:30 am, depending on if we met with the customer (the professor) in his office or in the classroom.
   b. Each week, we showed the current state of the user stories from each iteration, which include the features documented under each iteration in the previous question (6). Sometimes these meetings resulted in additional feature requests, as noted in question (2), as found in the User story history.

8. **Explain your BDD/TDD process, and any benefits/problems from it.**
   a. At first, we struggled with the TDD process, especially since we didn't learn about the TDD process until after we started implementing some of the features, so we had to revisit the features, write the tests, and had to refactor some things to get the tests to work and improve the coverage. It was also difficult understanding what kinds of tests we needed to implement. We also had to write additional tests and adjust some things in the code because there were a lot of features that were not created by us (as this is a legacy project and for the first half of the semester, we worked in parallel to an undergraduate team). Having successfully followed BDD guidelines, we did have user stories created for each of our features so it translated well into creating Cucumber tests, but it was still difficult to follow through with TDD because we often had to readjust the tests or the code to pass the tests. BDD also helped us a lot with organization because it allowed us to figure out what we wanted to do (what features we wanted to plan for).

9. **Discuss your configuration management approach. Did you need to do any spikes? How many branches and releases did you have?**
   a. Our configuration management was simple, we used AWS Cloud 9 for development and local testing. We forked the code from the previous team's Github Repository (who were simultaneously working on the project for a month). The production application is deployed in Heroku and

the master branch of the Github repository is deployed to heroku app. Automatic deployment is enabled for Heroku. So everytime code is merged to the master branch, a new deployment is made. Also, since we had to use Selenium, we switched to our local machine for development and used Visual Studio. We did not use any kind of spikes

b. We had only one major branch which was the master branch and this was deployed to the prod application. We had 58 releases to the application.

10. **Discuss any issues you had in the production release process to Heroku.**
    a. Fortunately, we did not face any issues in the production release process and everything went smoothly.

11. **Describe any issues you had using AWS Cloud9 and GitHub and other tools.**
    a. As we progressed in implementing some of our features, we figured out that due to the requirement of JavaScript for some of the functionalities, testing on AWS Cloud9 and Cucumber tests were not enough. We needed to use Selenium for testing the JavaScript functionalities, but found that Selenium does not work well with AWS Cloud9, so we needed to set up our environments locally in order to set up Selenium and do the testing there. For GitHub, it was a challenge to get the environments set up, especially in the beginning because the documentation was missing a lot of details that we had to figure out and work through.
    b. Another issue we faced was displaying images. The undergraduate team that initially added the image functionality was unresponsive each time we reached out to them about the implementation for images, so we tried to refactor everything for it. We spent a lot of time trying to figure out carrier-wave and other alternatives to set up an image database and get images to be displayed, but we later found out that the solution was much simpler than we thought. We figured out that the undergraduate team set up an Amazon s3 bucket, which stored images, and all we needed to do was create a new bucket and figure out how to store/retrieve those images.

12. **Describe the other tools/GEMs you used, such as CodeClimate, or SimpleCov, and their benefits.**
    ● For the automated informative email sent to banned users, we used ActionMailer, which is the Rails component that enables applications to send and receive emails. This tool allows our application to send an email

to the user without having to set up a SMTP (Simple Mail Transfer Protocol) server that might cost greatly.

13. **Make sure all code (including Cucumber and RSpec!) is pushed to your public GitHub repo.**
    a. Everything should be in the GitHub repository.

14. **Make a separate section discussing your repo contents and the process, scripts, etc., you use to deploy your code. Make very sure that everything you need to deploy your code is in the repo. We have had problems with legacy projects missing libraries. We will verify that everything is in the repo.**
    a. There is a setup.sh file in the GitHub repository that should be able to handle all of the necessary installations and other additional setup requirements are detailed in the README file, which contains a guide for everything needed to be done in order to deploy it.

15. **Links to your Pivotal Tracker, public GitHub repo, and Heroku deployment, as appropriate. Make sure these are up-to-date.**
    a. GitHub: https://github.com/TripAgvisor/TripAgvisor-GradVersion_Spring2023
    b. Heroku: https://tripagvisor2.herokuapp.com/
    c. Pivotal Tracker: https://www.pivotaltracker.com/n/projects/2427229

16. **Links to your presentation video and demo video.**
    a. Demo Video: https://www.youtube.com/watch?v=4jBaIuqiyMY&ab_channel=YijinFang
    b. Presentation: https://youtu.be/EYOZ6EF--ng