SW Engineering CSC648/848 Fall 2022

GatorExchange

(WWW site for Buy/Sell/Share of Digital media exclusively for SFSU students and faculty)

Team 4

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Milestone 2

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1. Executive Summary

Nowadays, in a digital era, we are well aware that most communication and collaboration occur through digital devices and primarily through media, whether formal or informal interaction. This inflated the existence and the use of digital media like digital photos, videos, audio, soft copy of documents, etc. As students, we empathize with how difficult it is for us to search for the relevant documents and files for our projects, assignments, presentations, and self-study. Not only for students, but sometimes the professors, instructors, and teaching assistants also require some document or file related to their subject. Searching for the required and relevant files from the whopping internet is a time-consuming and tiresome process, especially when we have to work with an approaching deadline; locating the supporting material is more burdensome than completing the work. So, we came up with the idea of building a platform called "GatorExchange" that provides an easy-to-share, sell, and buy interface for exchanging digital media among SFSU students and staff members.

GatorExchange enables the students and staff members of the SFSU to look around for digital materials related to their interests without any login and sign-up process. It also allows them to upload their original media like handwritten notes, presentation, supplementary textbooks, musical sequence, etc. Moreover, these media can be shared freely or posted to sell. It works two ways, i.e., one can get an appreciation for their efforts, and the other can easily access the material either free of cost or with nominal pay. As our project is exclusive to SFSU, it allows searching from limited and most relevant materials posted by someone from the same community rather than futile efforts to explore the entire internet. Apart from that, the uniqueness involved in the project is the posts being associated with one or more tags that allow users to search by filtering tags.

We, as a team, are a group of students from Computer Science and Business major. Our vision is to build an interface that connects people with similar interests, hobbies, or majors to sell, buy and share digital media among SFSU. Also, we aim to design this application to be very user-friendly, enabling the people from SFSU to access the digital content easily.

2. List of main data items and entities

2.1 User:

- **id**: Unique integer id of each user
- **first_name**: First name of the user
- **last_name**: Last name of the user
- **email**: Email will be used as the username of the user
- **password**: Password of the user *(encrypted)*

2.2 Post:

- **post_id**: Unique integer id of each post
- **user_id**: User who posted
- **post_type**: Type of the post (image/video/audio/document)
- **title**: Title of the post
- **file**: Media file of the post
- **description**: Description of the post
- **price**: Price of the post (0 if Free)
- **approved**: Post approval flag (True if approved by admin otherwise False)
- **categories**: Category of the post
- **created_timestamp**: Post time

2.3 Category:

- **category_id**: Unique integer id of each category
- **category_name**: Name of the category (Example: Computer Science, Soccer, Music, etc.)

2.4 Transaction Record:

(Transaction Record only stores the information about who sends message to whom and for which post, it does not include any payment activity)

- **transaction_id**: Unique integer id of each transaction
- **post_id**: Post for which transaction is occurred
- **buyer**: User id of the user who sends message
- **seller**: User id of the user who receives the message and owner of the post
- **message**: Message content send by the buyer to seller
- **status**: Status of the activity
- **timestamp**: Time stamp when the message is sent

3. Functional Requirements

Priority 1:

Guest users

1.1. Shall be allowed to register for an account: Guest user needs to register for buying, selling, or sharing any digital media.

1.2. Shall be able to search content by using specific tags: Guest users can still search for the media without registration (using specific tags is not needed maybe)

Registered users

2.1. Shall have all the functional requirements of the Guest user.

2.1.2. Shall be able to search content by specific tags

2.2. Shall be allowed to create a post with uploaded media: Can create a post for selling/sharing digital media and can tag the media with one or more tags.

2.3. Shall be allowed to message sellers to inquire about listed content: Can send the message to the seller for sharing contact details to buy the digital media

2.4. Shall be allowed to bookmark posted content: Can save the post for future reference

Administrator

3.1. Shall have all functional requirements of Registered users.

3.2. Shall be able to approve or reject user-submitted media for sharing and marketplace.

3.5. Shall be able to view the analytics of the website, showing overall users, interactions, and the number of posts.

Priority 2:

Guest users

1.3. Shall be able to preview media.

Registered user

2.1. Shall have all the functional requirements of the Guest user.

2.1.1. Shall be able to preview the media

Administrator

3.3. Shall be able to delete posts that break community guidelines.

3.4. Shall be able to ban user accounts.

<u>Priority 3:</u>

Registered user

2.5. Shall be allowed to rate posted content

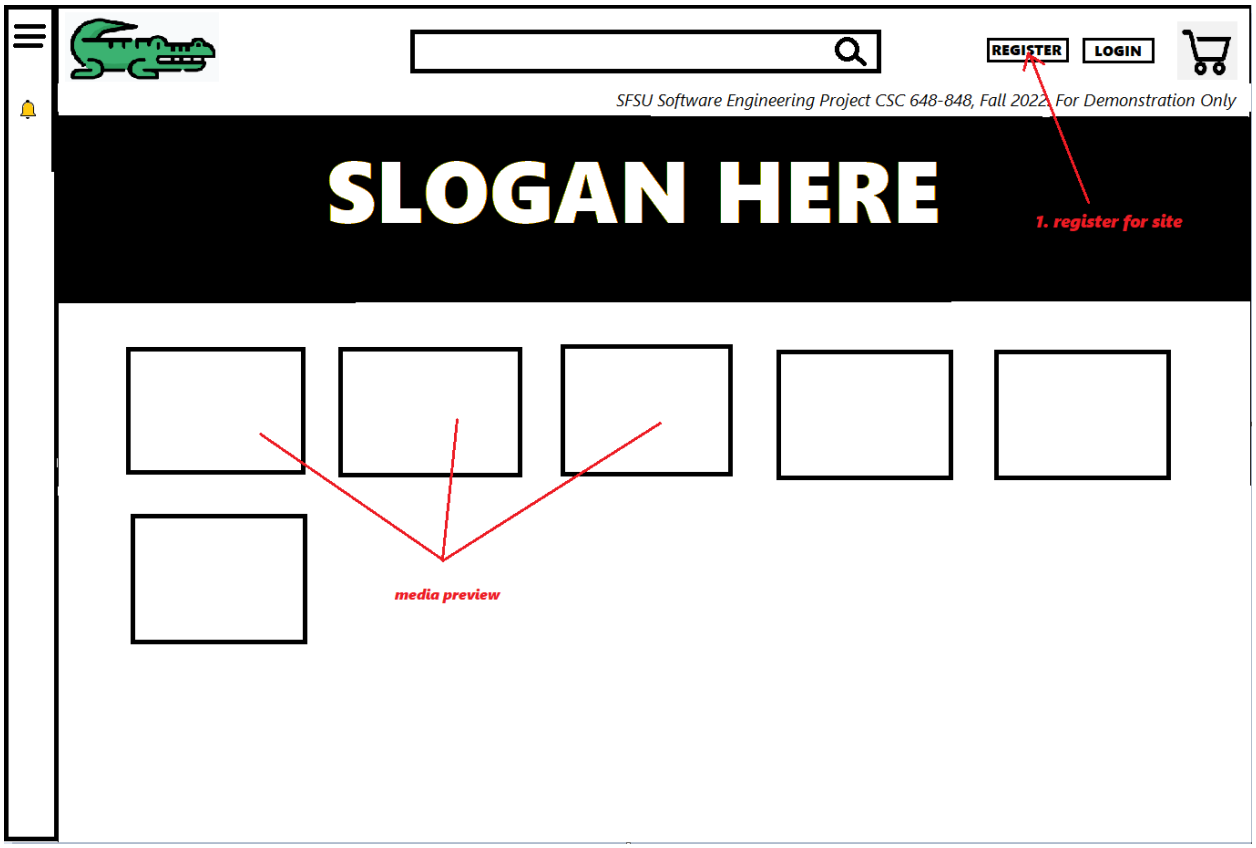
2.6. Shall see notifications when a buyer is interested in posted content.

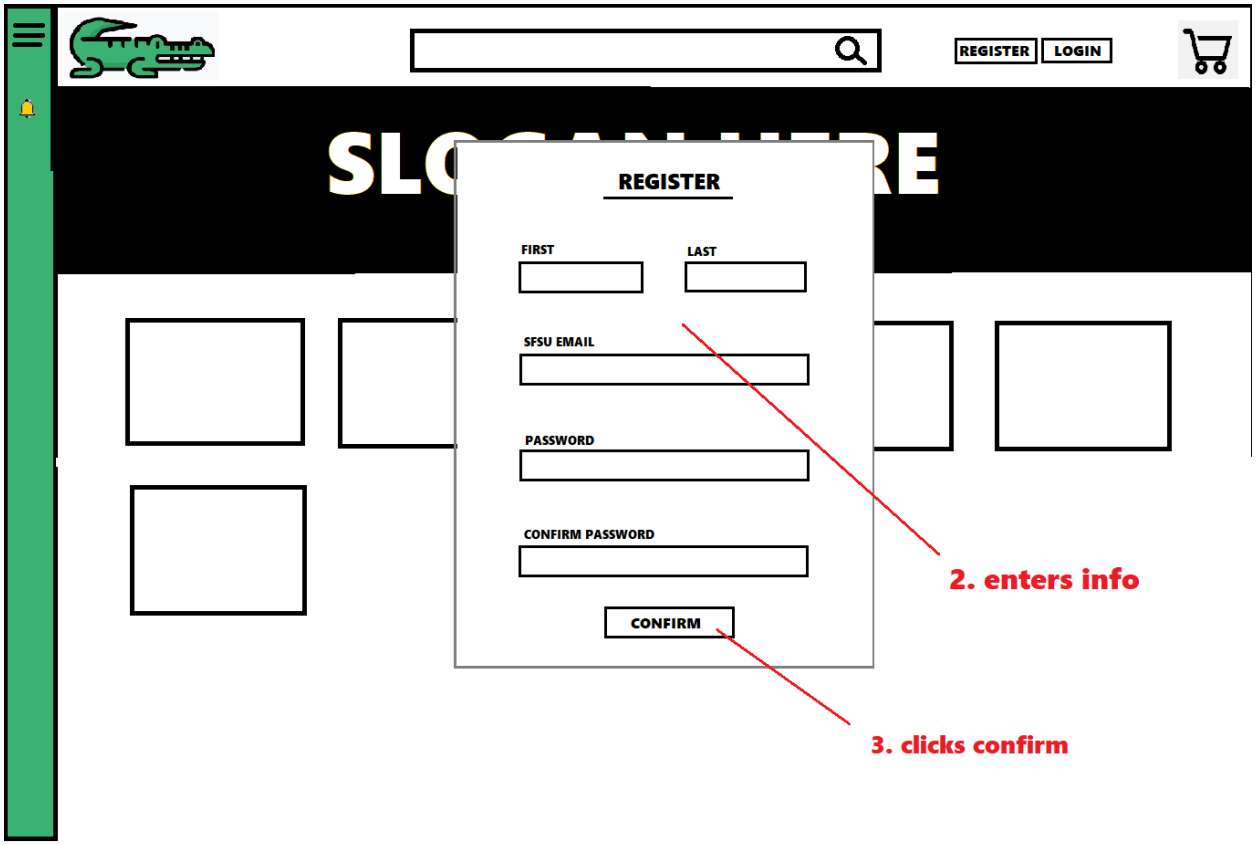
2.8. Shall be allowed to follow other users to get notified of new posts.

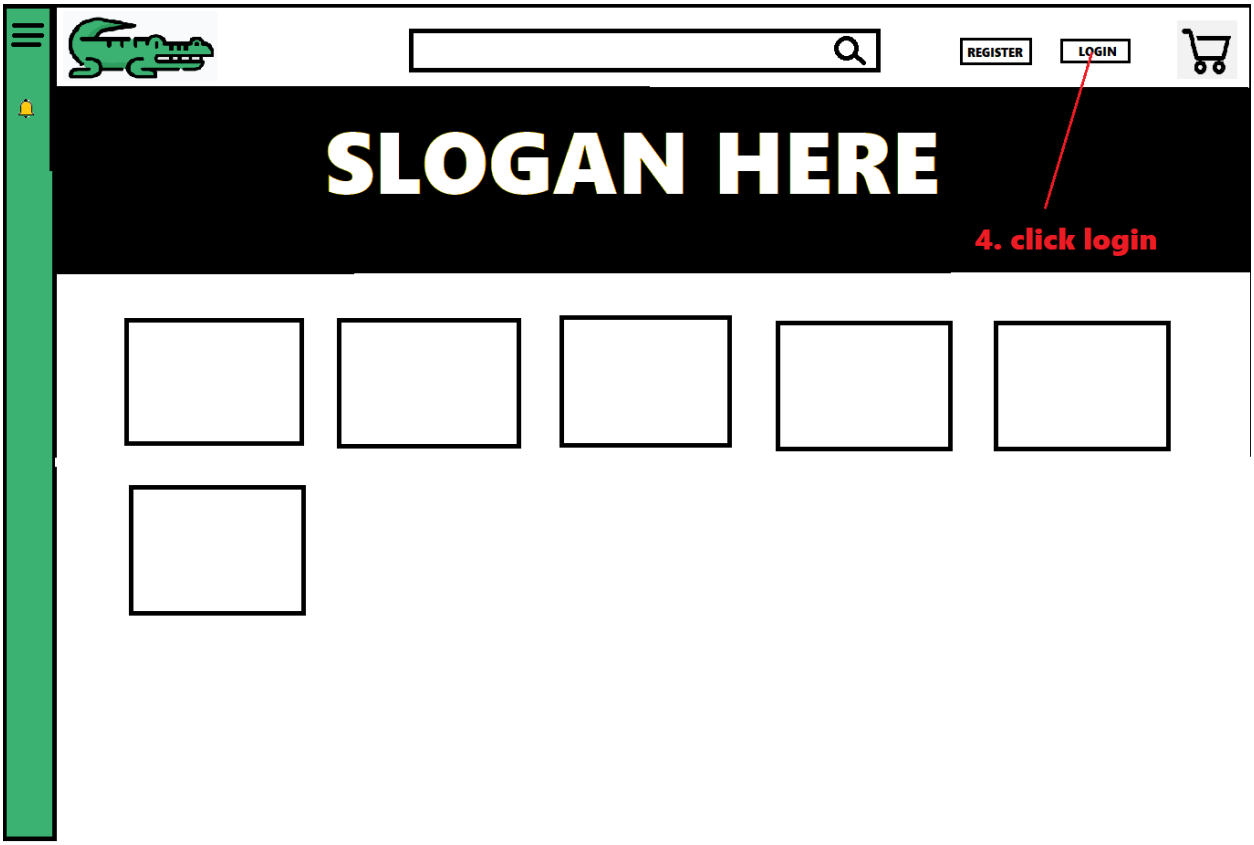
4. UI Storyboards for each main use case (low-fidelity B&W wire diagrams only)

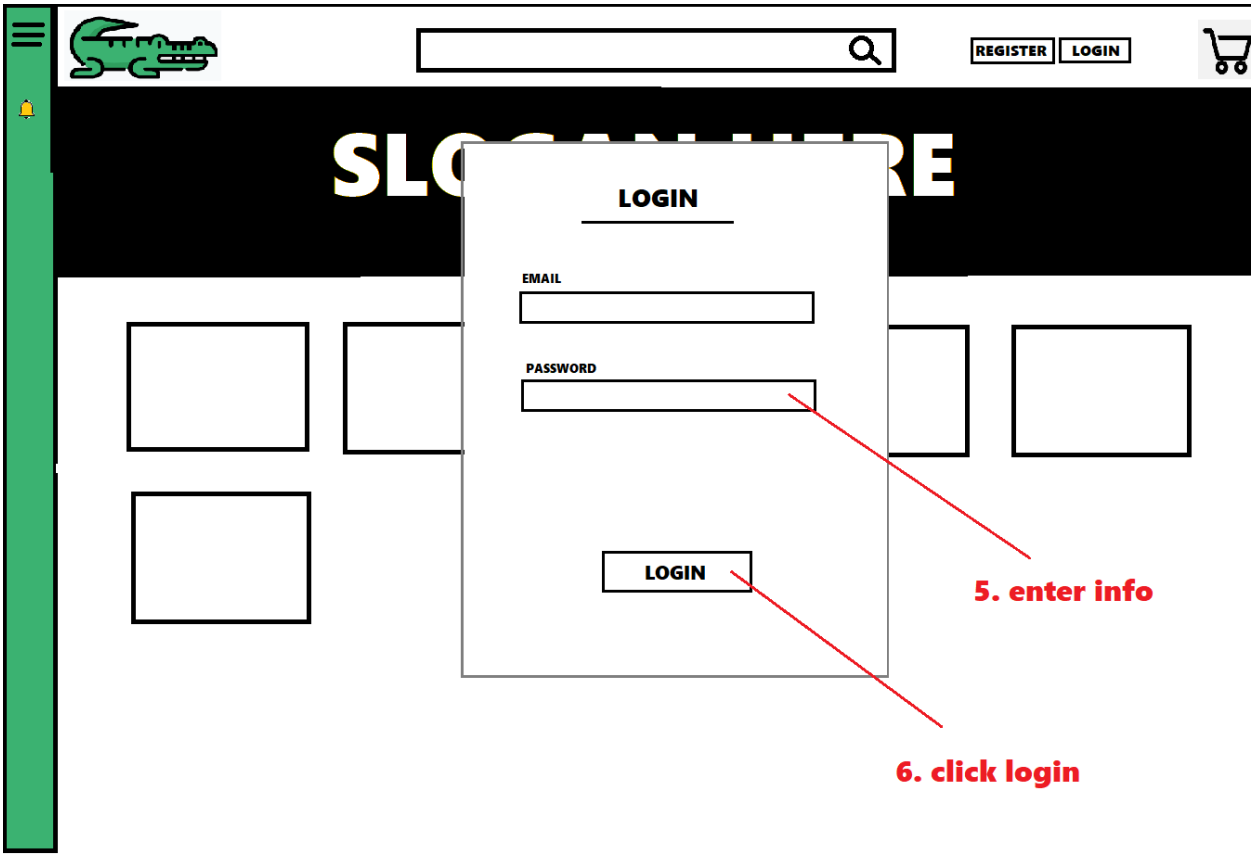
<u>USE CASES:</u>

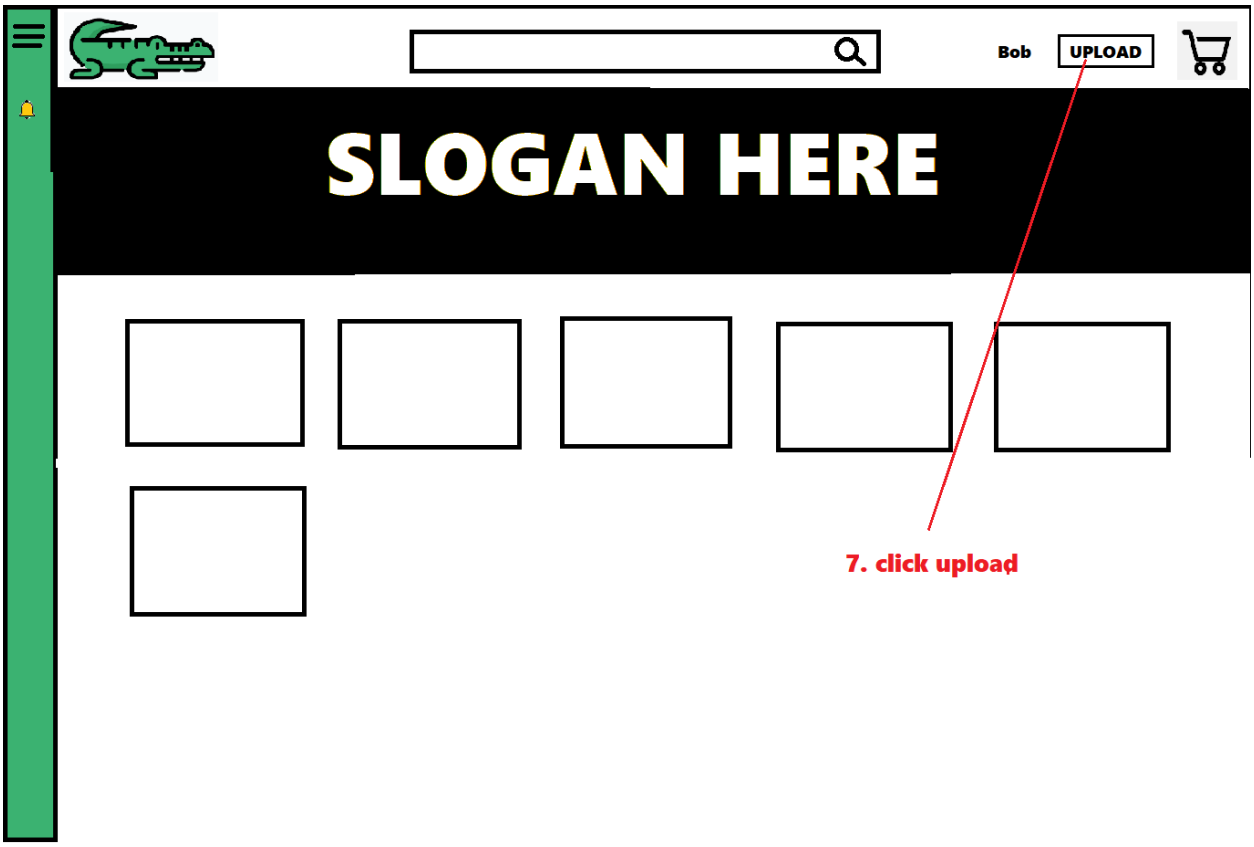
1. **Post:** A guest user, previews the website, decides to register, and goes through that process. He then login and creates a post. It then informs him that the post will be reviewed soon by the admin and will be available on the website.

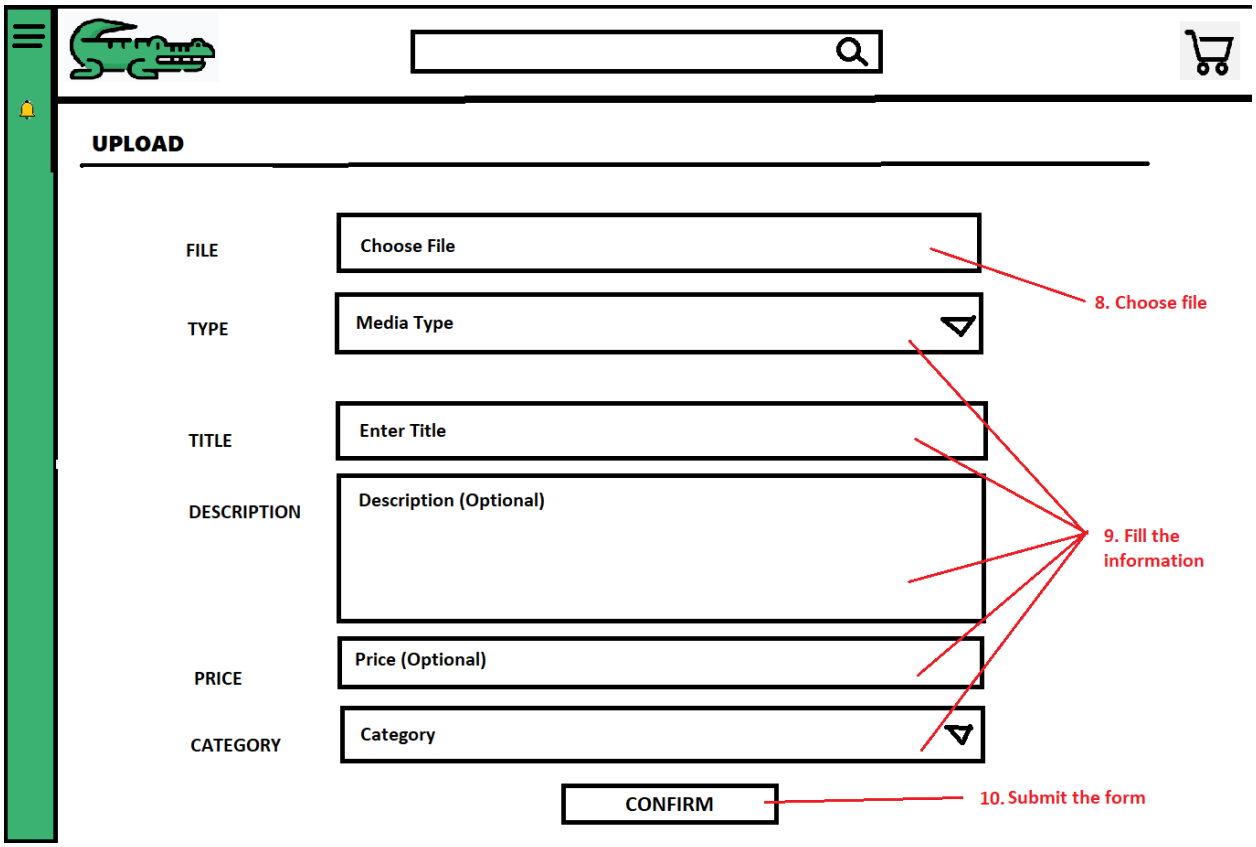

REGISTER
LOGIN
SFSU Software Engineering Project CSC 648-848, Fall 2022. For Demonstration Only
SLOGAN HERE
1. register for site
media preview

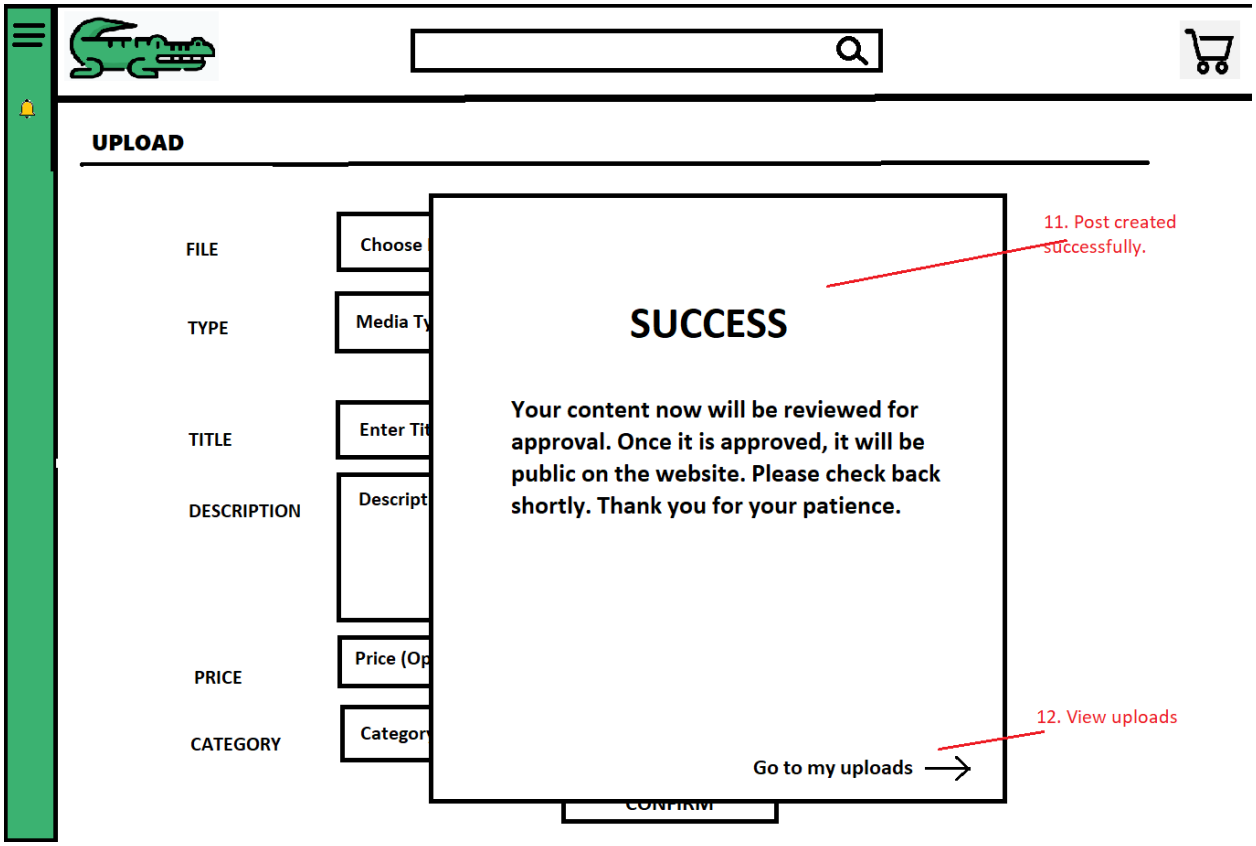

REGISTER
LOGIN
REGISTER
FIRST
LAST
SFSU EMAIL
PASSWORD
CONFIRM PASSWORD
CONFIRM
2. enters info
3. clicks confirm

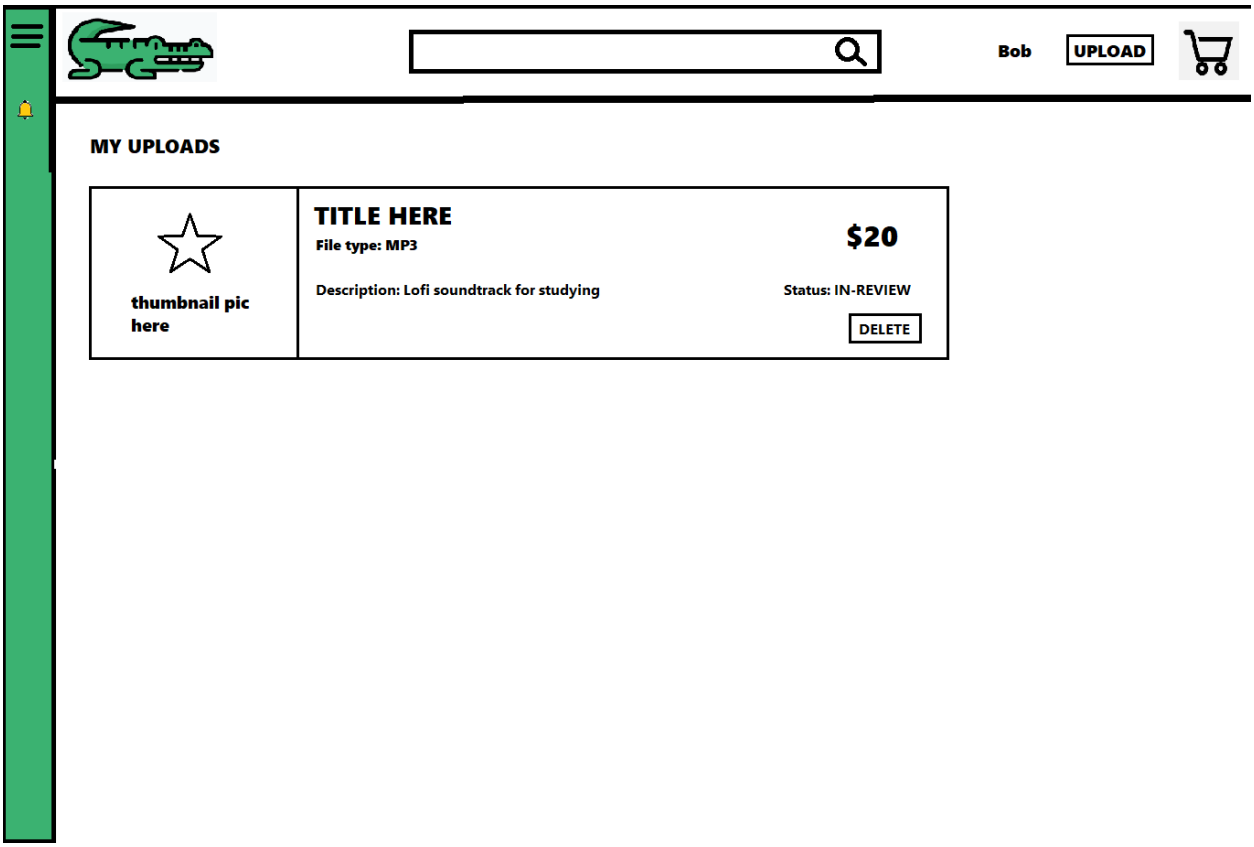

REGISTER
LOGIN
SLOGAN HERE
4. click login


REGISTER
LOGIN
LOGIN
EMAIL
PASSWORD
LOGIN
5. enter info
6. click login

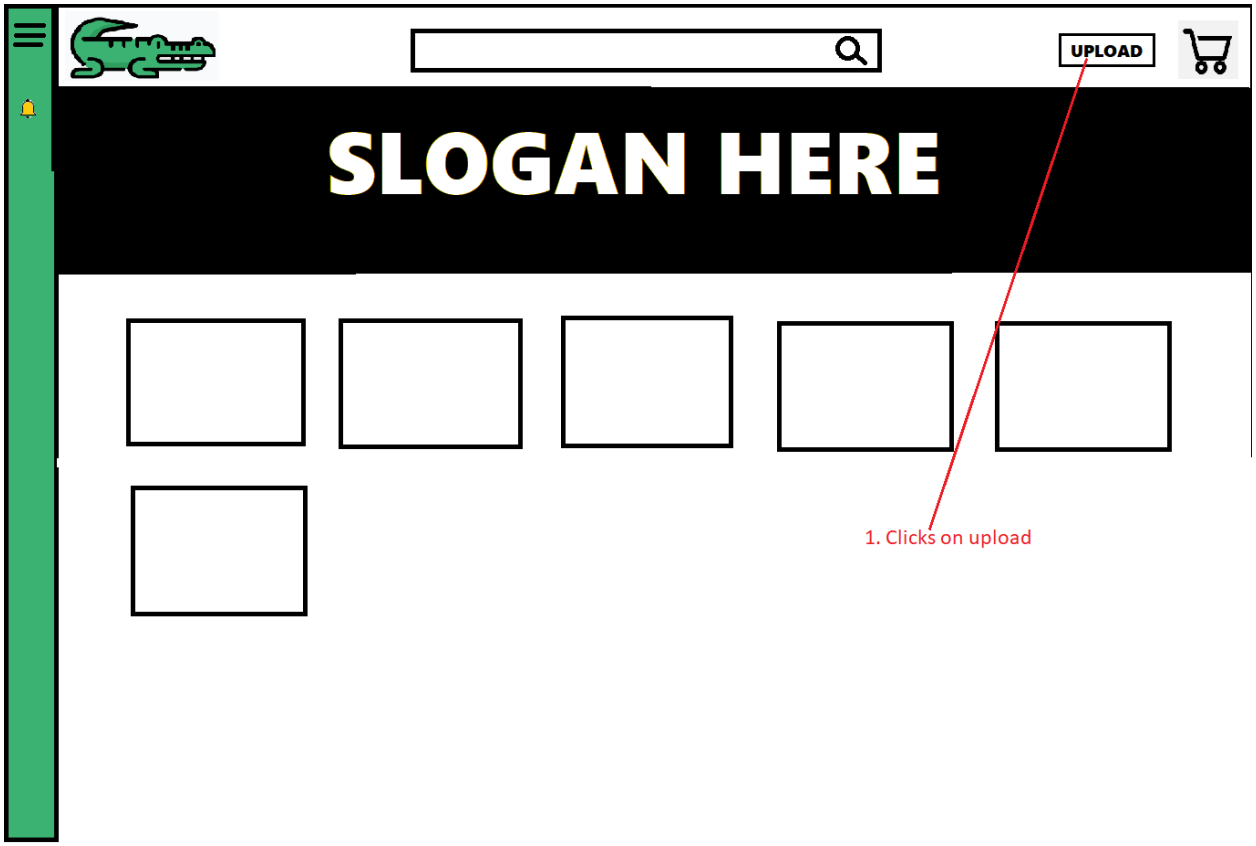

Bob
UPLOAD
SLOGAN HERE
7. click upload

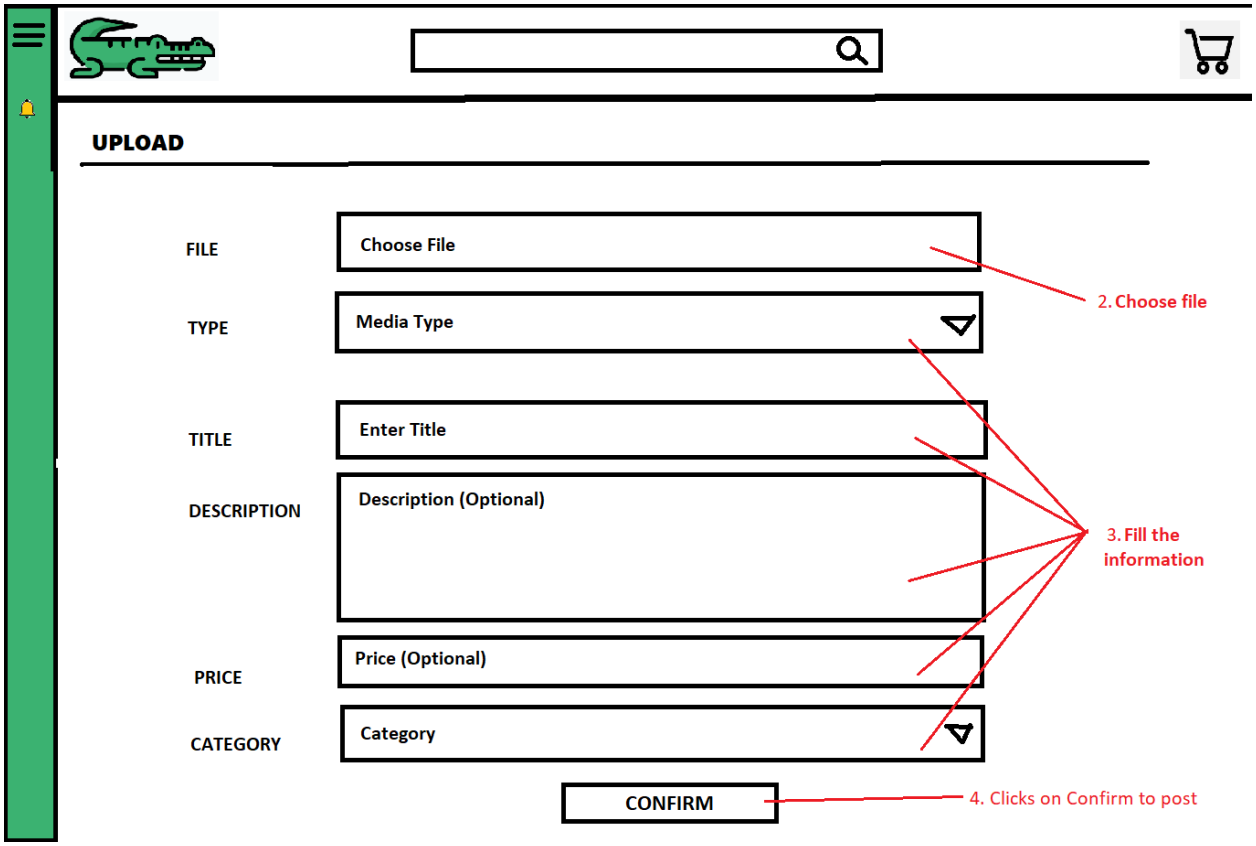

UPLOAD
FILE
Choose File
8. Choose file
TYPE
Media Type
TITLE
Enter Title
DESCRIPTION
Description (Optional)
9. Fill the information
PRICE
Price (Optional)
CATEGORY
Category
CONFIRM
10. Submit the form

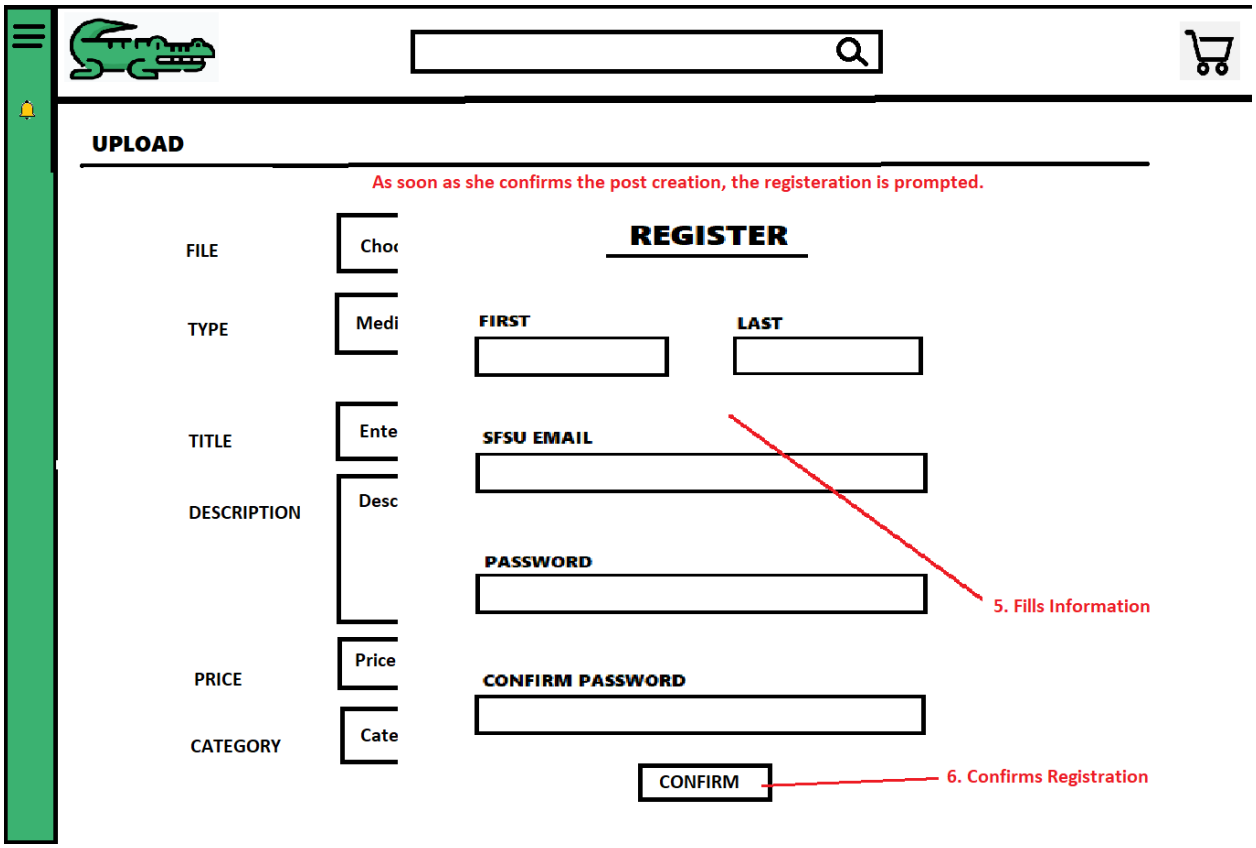

UPLOAD
FILE
Choose
TYPE
Media Ty
TITLE
Enter Tit
DESCRIPTION
Descript
PRICE
Price (Op
CATEGORY
Categor
SUCCESS
Your content now will be reviewed for approval. Once it is approved, it will be public on the website. Please check back shortly. Thank you for your patience.
Go to my uploads
11. Post created successfully.
12. View uploads

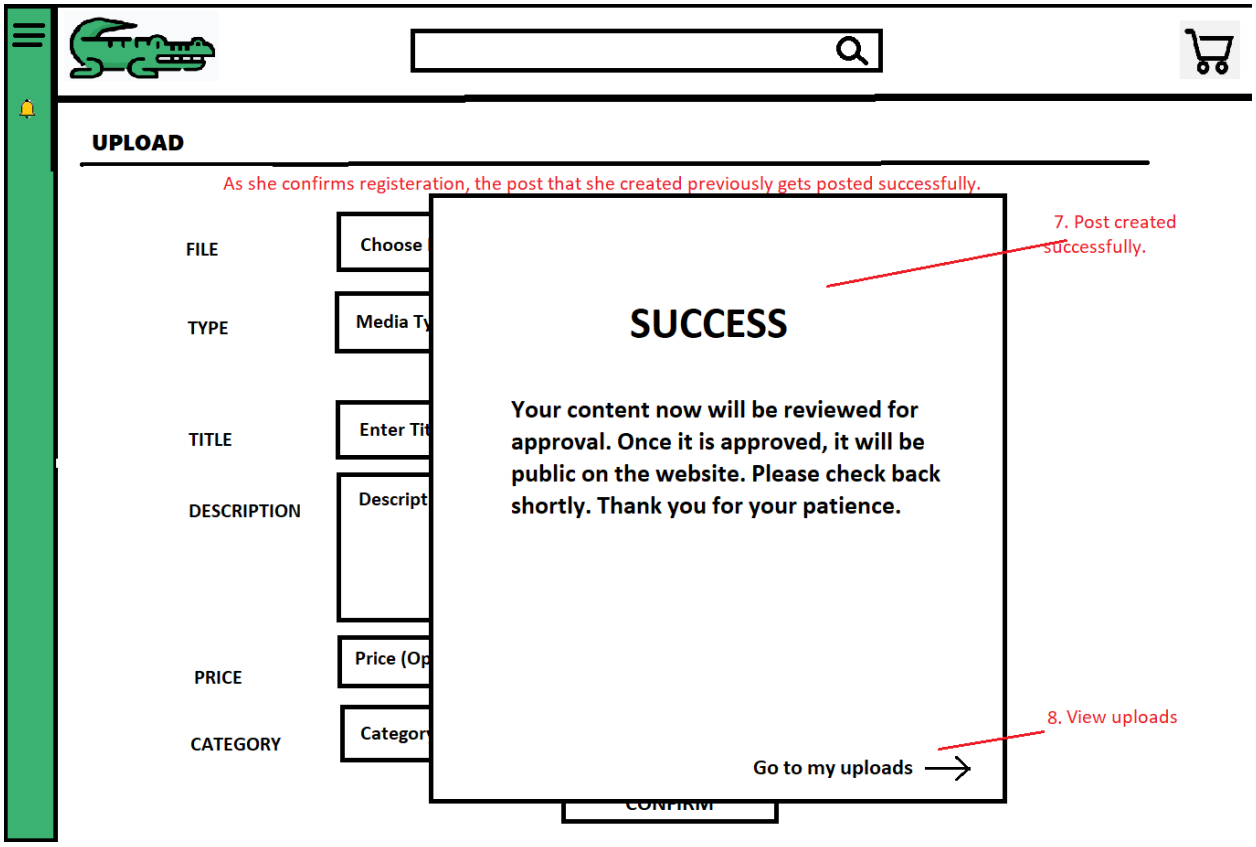

Bob
UPLOAD
MY UPLOADS
thumbnail pic here
TITLE HERE
File type: MP3
$20
Description: Lofi soundtrack for studying
Status: IN-REVIEW
DELETE

2. **Post:** A guest user tries to post her music. She goes through the process of creating a post. When trying to post, she is then prompted to register, goes through the registration process, and is finally able to post her music with post tags and make it sell. It then informs her that the post will be reviewed soon by the admin and will be available to the website.




UPLOAD
FILE
Choose File
TYPE
Media Type
TITLE
Enter Title
DESCRIPTION
Description (Optional)
PRICE
Price (Optional)
CATEGORY
Category
CONFIRM
2. Choose file
3. Fill the information
4. Clicks on Confirm to post

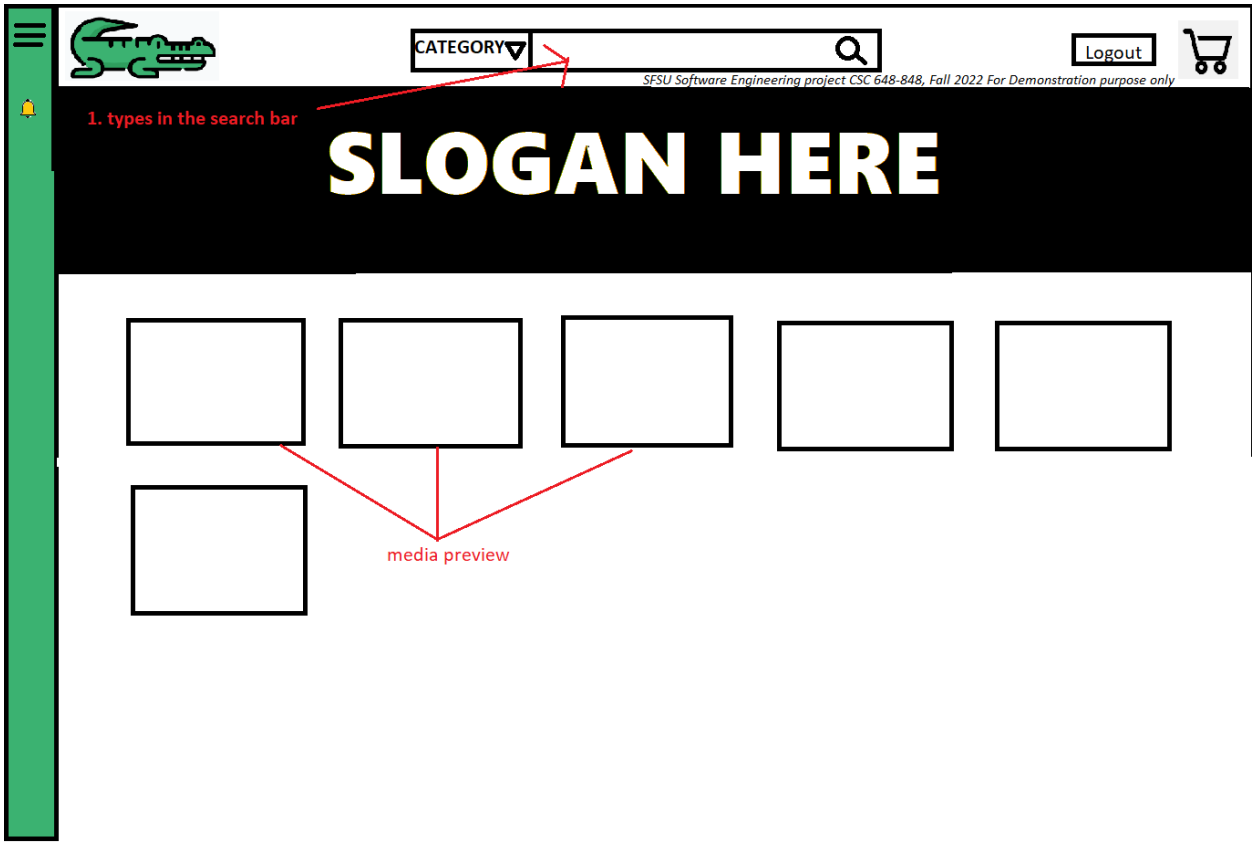

UPLOAD
As soon as she confirms the post creation, the registeration is prompted.
FILE
TYPE
TITLE
DESCRIPTION
PRICE
CATEGORY
REGISTER
FIRST
LAST
SFSU EMAIL
PASSWORD
CONFIRM PASSWORD
CONFIRM
5. Fills Information
6. Confirms Registration

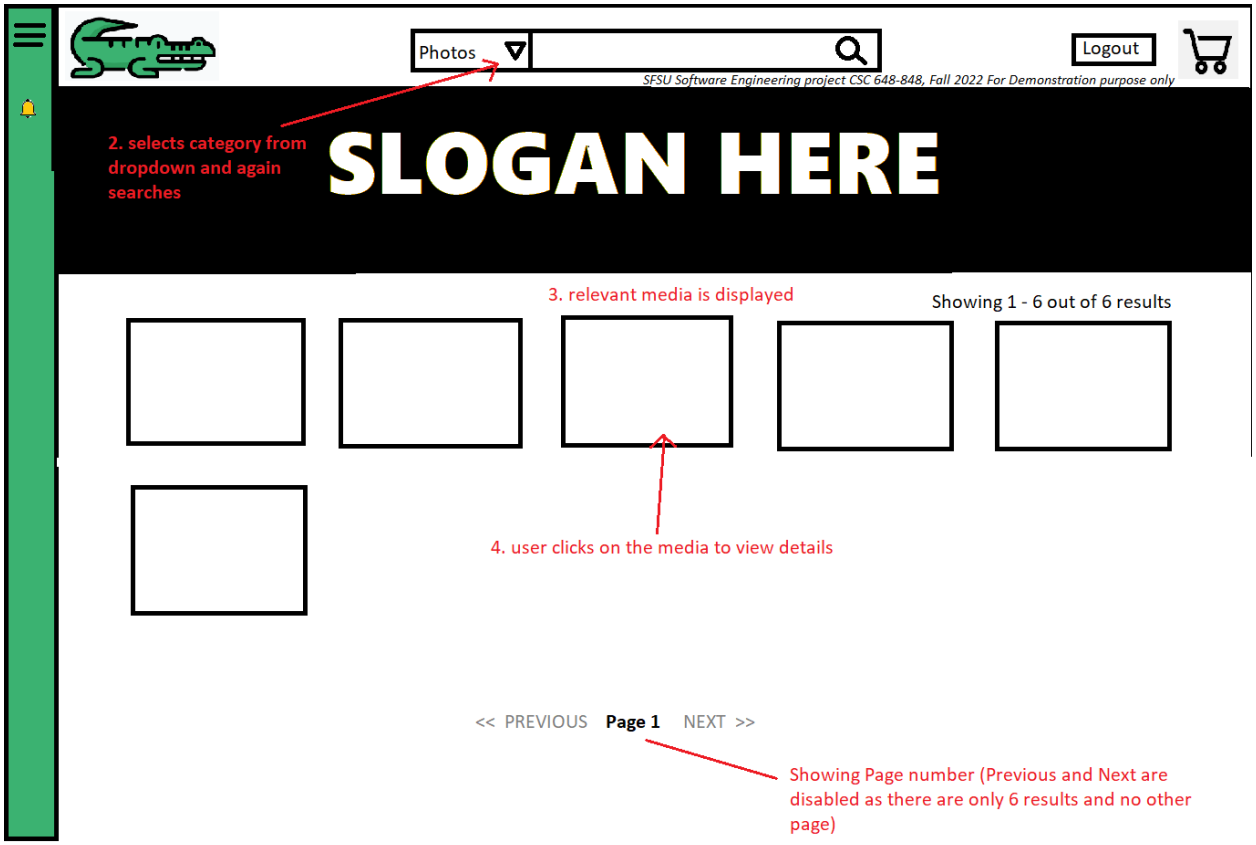


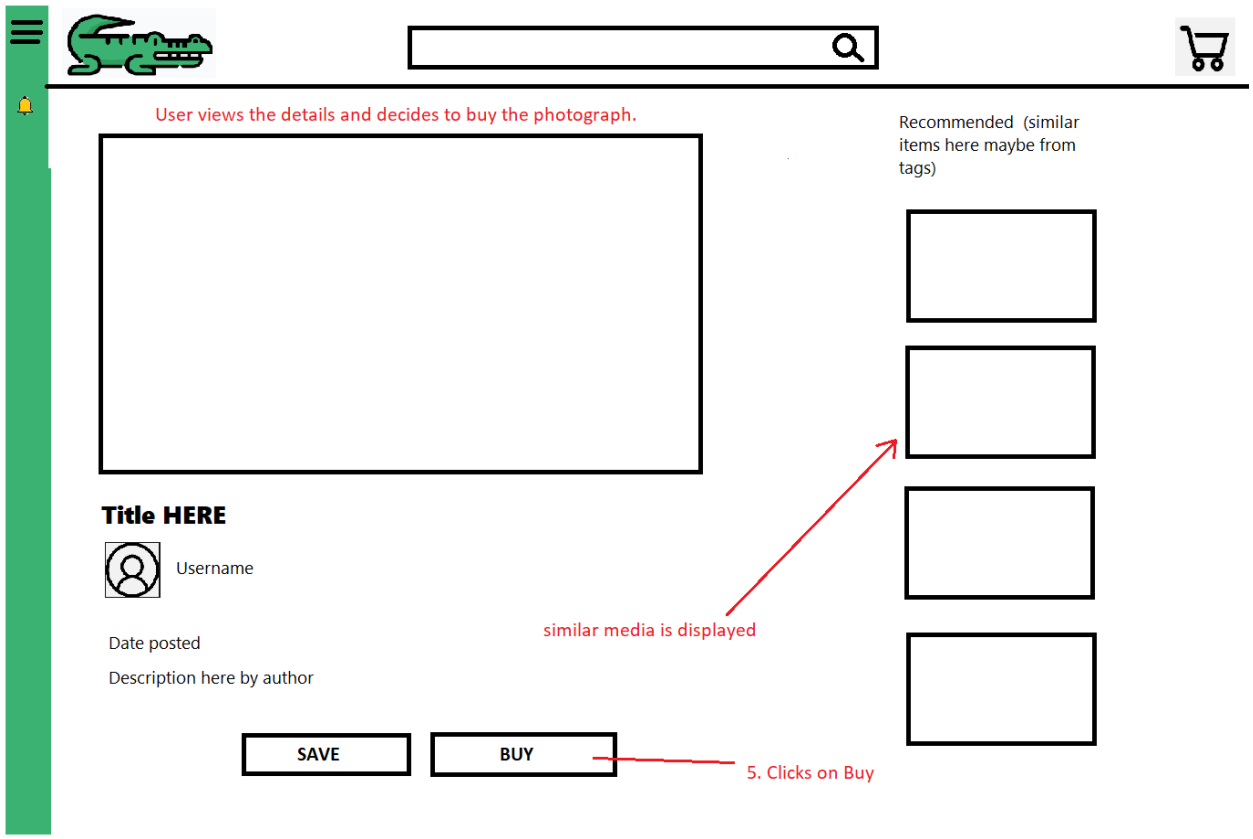
Now, she may see her post under review in the uploads similar to the above use case.

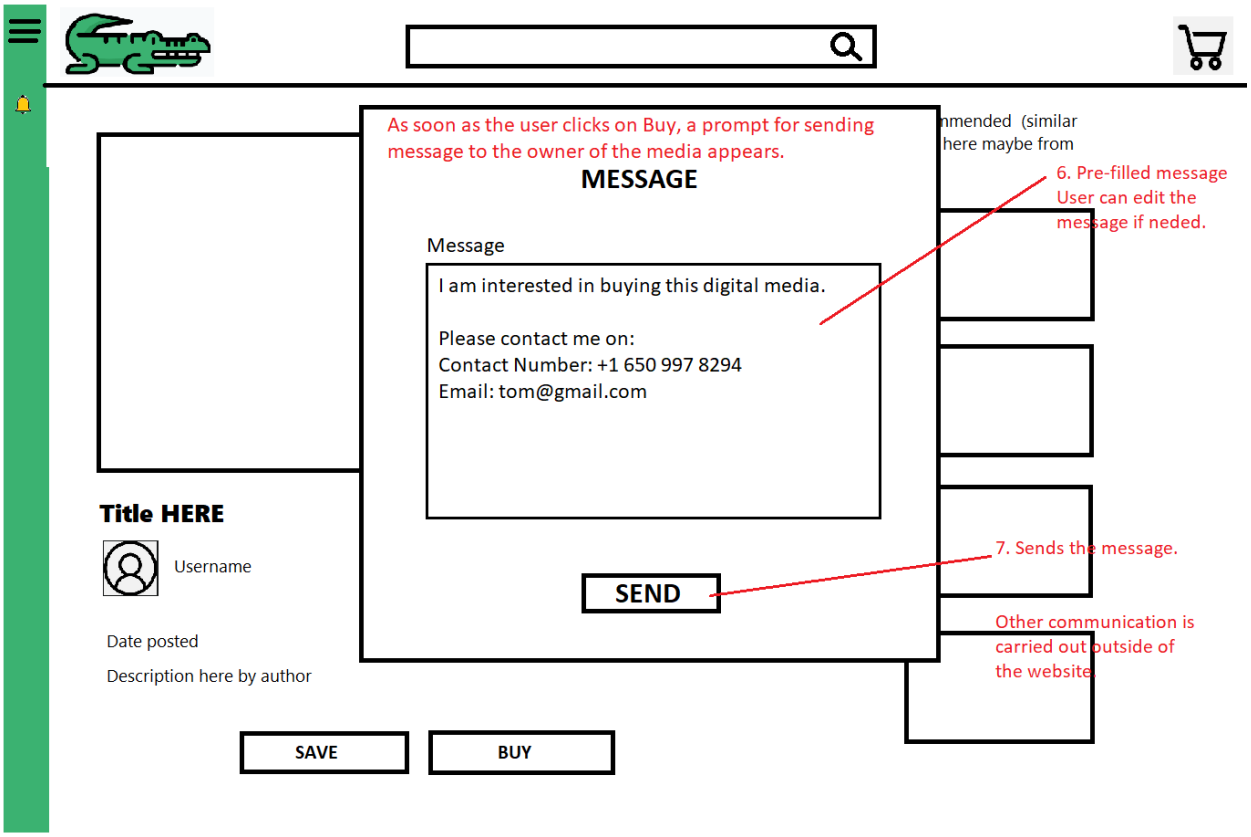
3. **Buy:** A registered user decides to use the search to find other photographs that have been posted by other registered users. He then finds a post he likes and decides to buy. He then messages the seller with the contact details so they can further communicate outside of the website. If both are in agreement, they will use a 3rd party app to complete the payment transaction.

A user is already registered and logged in to his account.

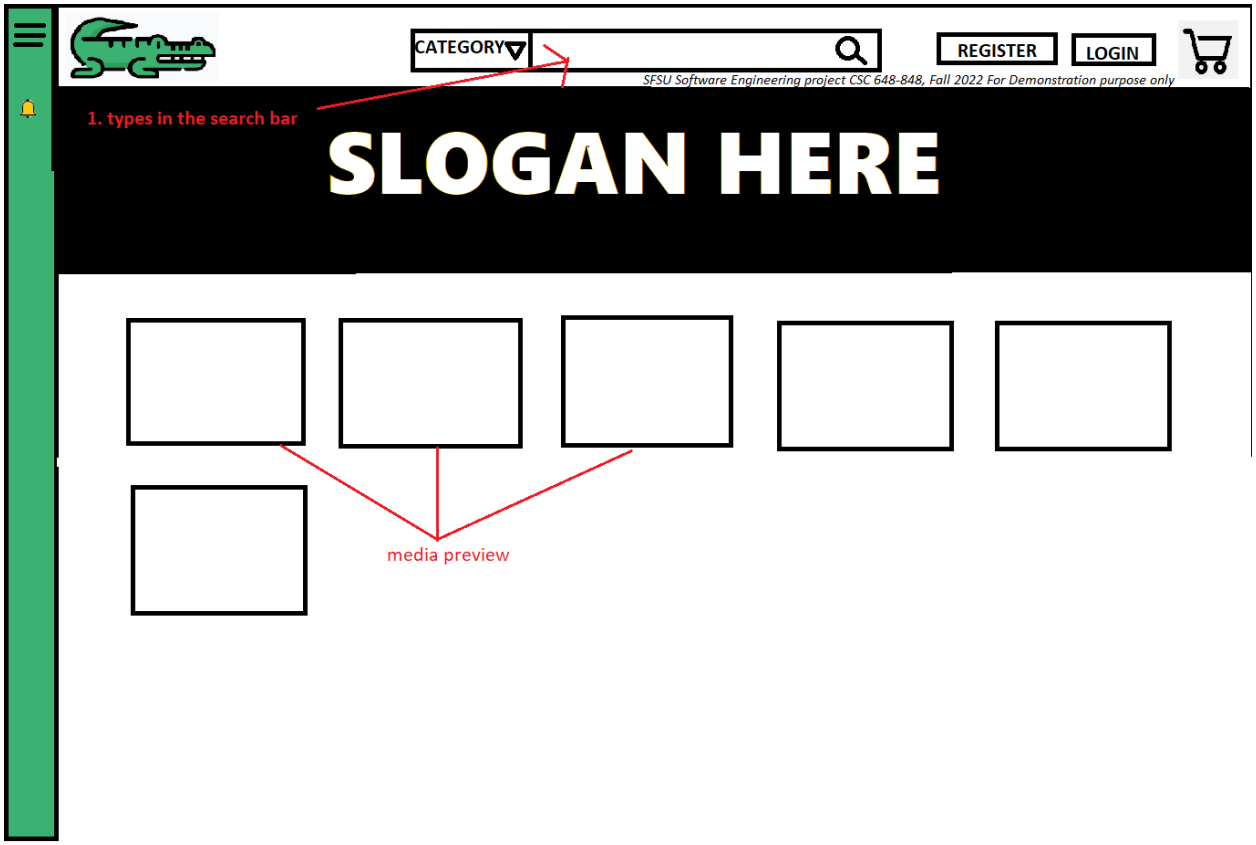

CATEGORY
Logout
SFSU Software Engineering project CSC 648-848, Fall 2022 For Demonstration purpose only
1. types in the search bar
SLOGAN HERE
media preview

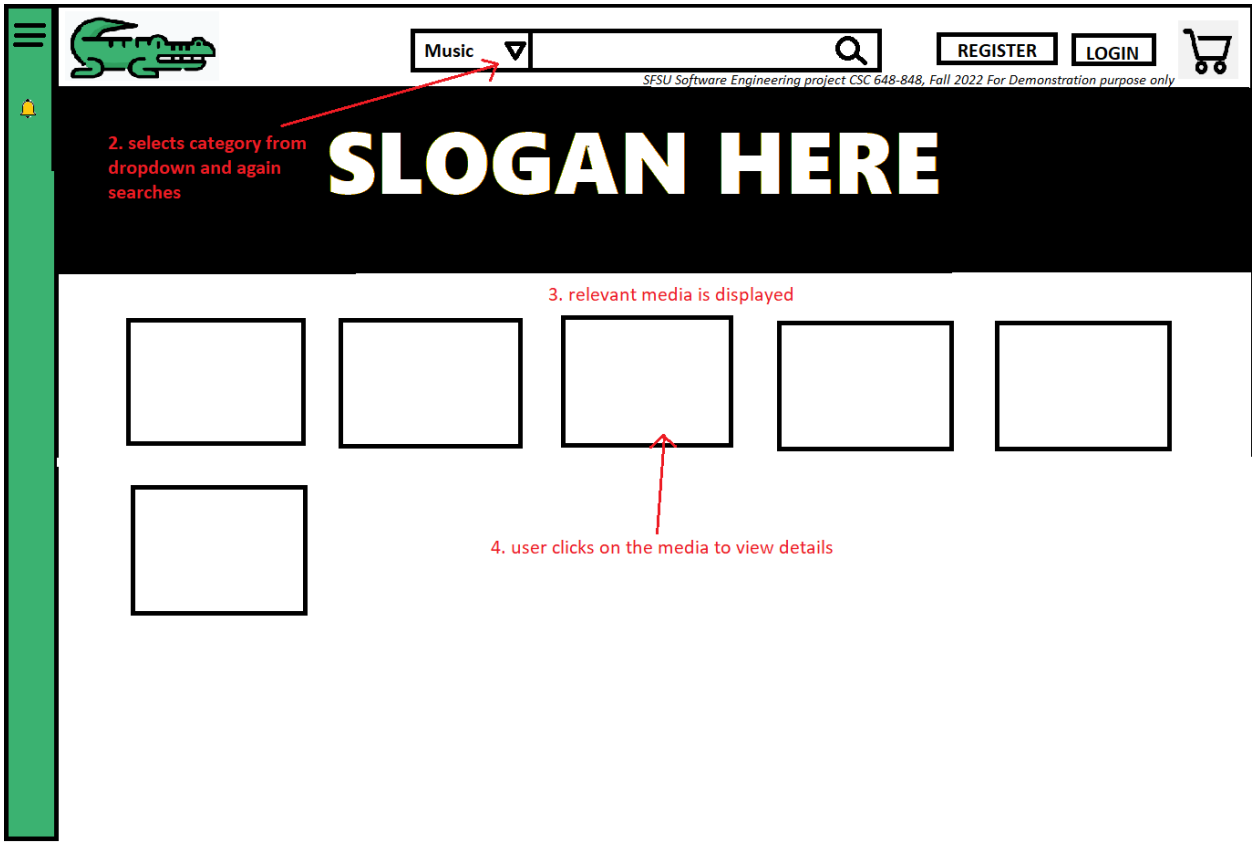

Photos
Logout
SFSU Software Engineering project CSC 648-848, Fall 2022 For Demonstration purpose only
2. selects category from dropdown and again searches
SLOGAN HERE
3. relevant media is displayed
Showing 1 - 6 out of 6 results
4. user clicks on the media to view details
<< PREVIOUS
Page 1
NEXT >>
Showing Page number (Previous and Next are disabled as there are only 6 results and no other page)

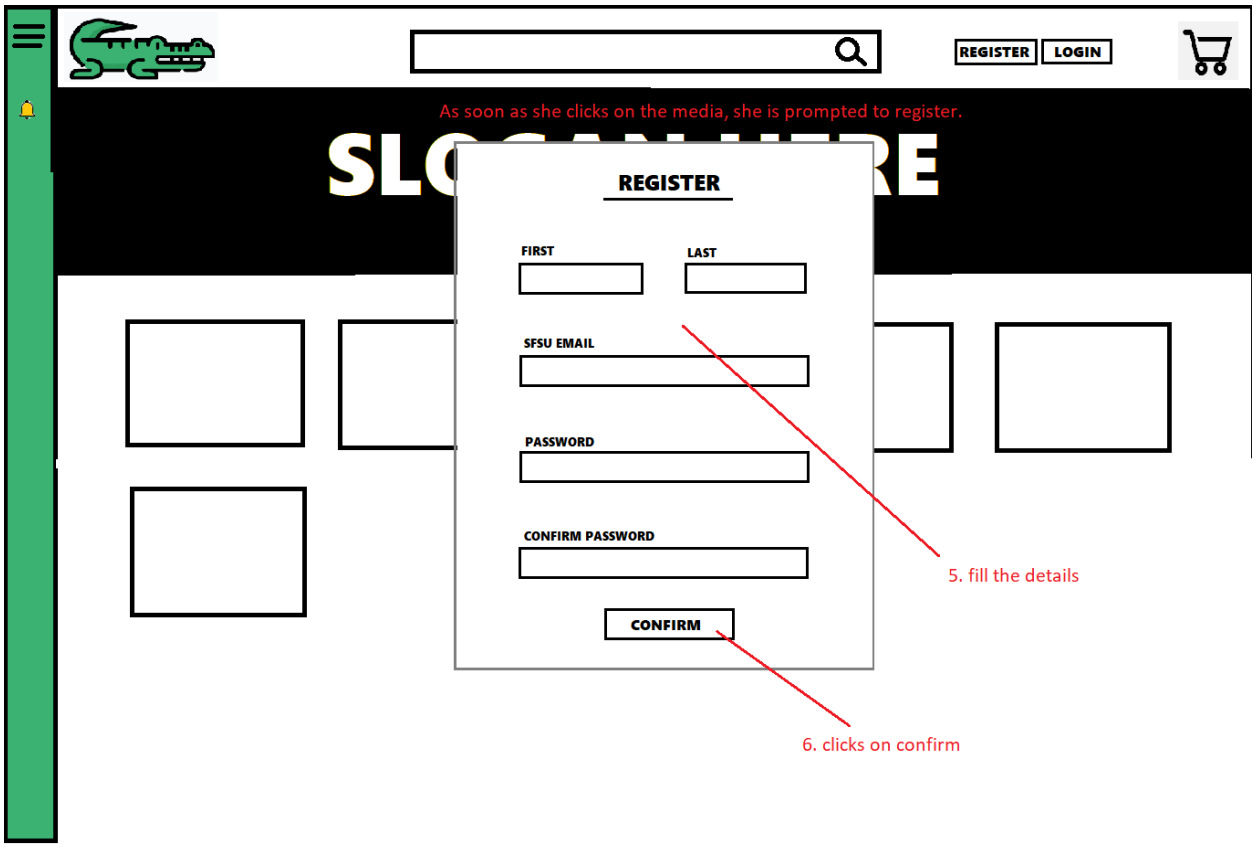

User views the details and decides to buy the photograph.
Recommended (similar items here maybe from tags)
Title HERE
Username
Date posted
Description here by author
similar media is displayed
SAVE
BUY
5. Clicks on Buy

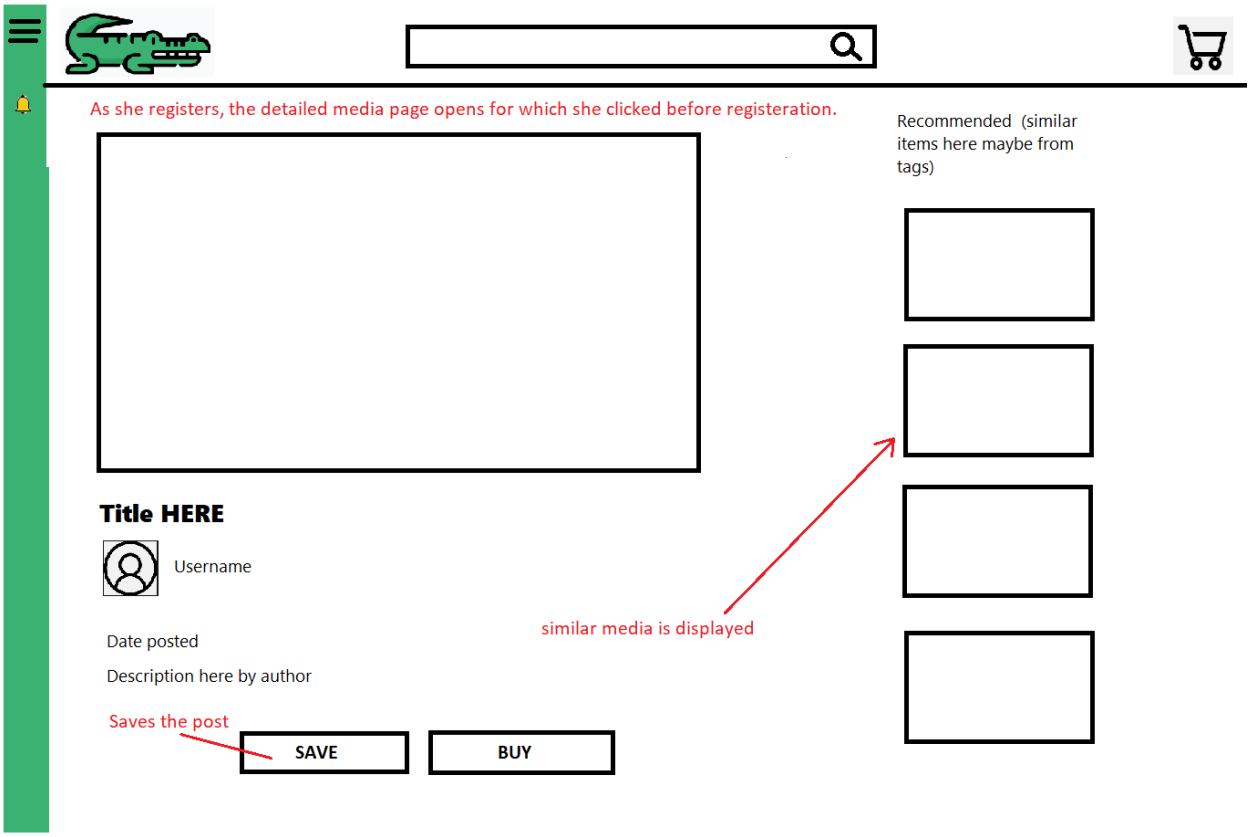


4. **Search:** A user uses the search and filters the search to narrow the field. She then previews the results as a guest user. She then finds some media her teacher needs and goes through the process of getting the media. This prompts her to register to get the media. Now that she is a registered user, she finds some media she saves it to show the professor later.


CATEGORY
REGISTER
LOGIN
SFSU Software Engineering project CSC 648-848, Fall 2022 For Demonstration purpose only
1. types in the search bar
SLOGAN HERE
media preview


Music
REGISTER
LOGIN
SFSU Software Engineering project CSC 648-848, Fall 2022 For Demonstration purpose only
2. selects category from dropdown and again searches
SLOGAN HERE
3. relevant media is displayed
4. user clicks on the media to view details


REGISTER
LOGIN
As soon as she clicks on the media, she is prompted to register.
REGISTER
FIRST
LAST
SFSU EMAIL
PASSWORD
CONFIRM PASSWORD
CONFIRM
5. fill the details
6. clicks on confirm



5. **Approving post:** The admin approves the post by going to the workbench and editing the field approved in Post Table after the post is created by the user. The post won't be displayed on the website until the admin approves it.

   The admin can also delete any post or user if any rules or regulations is being violated. That banned user won't be able to access the website anymore.

   @TODO: *Attach Snapshot of workbench (Editing Approval field)*

5. High-level Architecture, Database Organization summary only

1. **DB Organization**

   User:

   - **id**: INT
   - **first_name**: VARCHAR
   - **last_name**: VARCHAR
   - **email**: VARCHAR
   - **password**: VARCHAR

Post:

- **post_id**: INT
- **user_id**: INT
- **post_type**: VARCHAR
- **title**: VARCHAR(45)
- **file**: BLOB
- **description**: VARCHAR(255)
- **price**: FLOAT
- **approved**: VARCHAR
- **categories**: INT
- **created_timestamp**: DATETIME

Category:

- **category_id**: INT
- **category_name**: VARCHAR

Transaction Record:
(Transaction Record only stores the information about who sends a message to whom and for which post, it does not include any payment activity)

- **transaction_id**: INT
- **post_id**: INT
- **buyer**: INT
- **seller**: INT
- **message**: VARCHAR(255)
- **status**: VARCHAR
- **timestamp**: DATETIME

2. **Media Storage**
   - Our application will be storing different types of media files such as documents, videos, images, and audio files. These files can vary, therefore DB BLOB storage will be used.

3. **Search/filter architecture and implementation**
   - We will be using the *'%like'* feature provided by SQL which will search on the category and title.
   - Also, items will also be organized by categories. Our search function will search posts by categories. If the post has the requested category, all posts with that category will be shown in the results.

4. **API**
    - login(email, password): *create a session entry for the user*
    - register(details): *get all details and save a new user + login*
    - home(user): *get main screen data (relevant posts) for the logged-in user/guest user.*
    - search(keywords): *search posts and categories based on keywords entered.*
    - get_my_posts(user): *get all the posts posted by and bought by the logged-in user.*
    - upload_post(details): *get all details and save the post.*
    - get_post_details(post): *get all the details of a post.*
    - send_message(buyer, seller, post): *send a message to the buyer from the seller about a post.*

6 . Risk

- Skill risks:

The skill risk that might occur is that not every member of the team is well aware with the technologies and tools that we are going to use. (Python, Reactjs, SQL, Flask). To address this issue the team will watch videos either the ones provided by the professor or ones we find on our own. As well as we will help each other learn through personal experience or what we found.

- Schedule risks:

The risk is not having time to meet to discuss our progress or upcoming deadlines. We will address this issue by finding a time that a majority of the group can meet even if it is a 30 min time slot either in person or virtually via zoom meeting.

- Technical risks:

The technical risk is the admin not being able to review the media from the Workbench. We will address this issue by training the admin to view the media file by directly copying the link and playing it into the local system.

- Teamwork risks:

There can be a disagreement when it comes to this project. To address this issue we all will have a voice and create a way to communicate our ideas and have an open mind.

Another teamwork risk is having everyone on the same page and doing a task at an appropriate time. To address this issue we will create a task list and set deadlines for these tasks to be completed.

- Legal/content risks:

The legal risk includes finding media that will not cause us legal trouble in the future. We will address this issue by making our own media. Also, we will find free media online that have no copyright issues to use for the project.

7 . Project Management

GitHub Issues: The team will use GitHub Issues for Project Management.

As we are using GitHub for our Project, it is easier to maintain our tasks in Github itself to avoid managing different tools. GitHub provides an easy-to-use portal for managing GitHub Issues where we can assign the task with a description, assignee, labels, and deadline.

- Team leads (Frontend/Backend) will assign the task through GitHub Issue to the team members along with the deadline, title, description, etc. The team member will be able to push the relevant files to GitHub and it will be reviewed and approved by the respective team lead and then finally it will be approved by the Team Lead of the Project.
- Changes done to the project can be linked to the issues, with appropriate labels and milestones to categorize them.
- Push Requests will be linked to the issues to be tracked.