

Class Project:
System Requirements Specifications for Image Portfolio Website
for
ICT 4300 Web-Enabled Information Systems

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Project Proposal

This project focuses on creating a dynamic website application that allows users to create image-based promotional portfolios and save images created by other users. Registered users can host images and information relating to static visual media projects such as graphic design, illustration, or photography. Non-registered users can only browse portfolios. The core function is to provide a user-friendly interface that allows projects to be showcased with design and display customization. Project metadata will be captured to enable search discoverability.

Key functions include:

- Account registration
- Image upload
- Application-driven image sizing
- User biography area
- Portfolio design customization (e.g., fonts and color scheme)
- Portfolio display customization (e.g., carousel, thumbnail, slideshow, etc.)
- Expanded view of images with metadata
- Searchable by keywords, image type, user name, or category
- Save images by downloading or adding to light box
- Share portfolios or images through social media APIs

System Requirements

1. *Proposed functionality:* User will be required to register account to use full site features (see Figure 1 in System Design section.)

Requirements:

- User will visit the web site
- User will click on the Register button
- User will fill out the registration form which includes these fields: name, street address, city, state, zip code, phone number(s), and email address. All the fields except phone number are required.
- User will click on the Submit button after completing registration form
- Database will validate the input to make sure all the required fields have been populated with appropriate data
- If incorrect or missing data, web server will reload form and prompt user to fill in incorrect fields
- Registration information is saved in the database
- Web server will send user email confirmation when registration is complete

2. *Proposed functionality:* Users can search portfolios based on keywords (see Figure 2 in System Design section.)

Requirements:

- Users (registered and unregistered) perform site search by entering search terms in form field

- User clicks on Submit button for simple site search, or
- User clicks on Advanced Search button for advanced search
 - Website generates advanced site search interface. No field is mandatory, user selects only desired search refinements, which include:
 - Radio button option for media type; all images (default), photos, vectors, or illustrations
 - Radio button for image orientation; horizontal or vertical
 - Drop-down category list filters results by: Any category (default), abstract, animals, arts, background/textures, beauty/fashion, buildings/landmarks, business/finance, celebrity, clip art, editorial, education, food/drink, healthcare/medical, historic, holidays, industrial, interiors, miscellaneous, model-release only, nature, objects, parks/outdoor, people, religion, science, signs/symbols, sports/recreation, technology, transportation, and vintage
 - Exclude Keywords form field (text string, no character limit)
 - Portfolio Contributor name form field (text string, 80 character limit)
 - People selection button includes Only Images with People, or Exclude People
- User clicks on Search button to submit advanced search, or clicks on Clear button to reset advanced options form
- Website queries image database based on selection
- Website returns results by displaying images

3. *Proposed functionality:* User browses portfolio Image display with interface customization
(see Figure 3 in System Design section.)

Requirements:

- Website displays images from user's search
- User can click on Small, Medium (default) or Large Thumbnail icon button to display preferred thumbnail size
- User can choose how many results to display per page by selecting either 25, 50, or 100 from dropdown list
- User can mouse over any image which creates these responses:
 - Hover on image creates large popup view of image
 - Hover on image creates interface with Download or Save to Light Box functions
 - Hovering off image clears image popup, and removes Download/Light Box icons
- User can click on any thumbnail image to display expanded view which includes:
 - New webpage with large image display
 - Image metadata displayed including: Unique image ID, contributing artist, time/date created, associated image keywords, associated subject categories
 - Contributor Portfolio bio link is included in view
 - 5 additional Same Artist thumbnails with hyperlinks to same artists portfolio
 - 5 Similar Images thumbnails with hyperlinks to other similar portfolio images

4. *Proposed functionality:* Registered user can save image as download or save to light box.

Light boxes are folders that are created by users to collect images for reference or later use (see Figure 4 in System Design section.)

Requirements:

- User downloads/saves image with the following process:
 - User selects image to download by either hovering over image and selecting download icon, or clicking on image for expanded view with download link
 - Registered users can download image by clicking on download button
 - If user is not logged in, they will be prompted to login
 - If user isn't registered, they will be prompted to register
 - After registration and login is complete, user is returned to previous search result page
 - Download radio buttons include Small, Medium, and Large options for image size
 - User can now download image by clicking on download button
 - Download request initiated by browser
 - Database processes image download request
 - Website prompts user for specified file path for download
 - Image downloaded to user's specified directory
- User saves to Light Box with the following process:
 - User selects image to save to light box by either hovering over image and selecting Light Box icon, or clicking on image for information view with Light Box icon

- Application server validates that user is registered and logged in as listed above
- After successful validation, user clicks on Create Light Box or clicks on a previously created Light Box to save the image to
- Application saves image to user's Light Box

5. *Proposed functionality:* User can upload images to their Portfolio (see Figure 5 in System Design section.)

Requirements:

- User must be registered and logged in to upload images to their portfolio
- Portfolio upload page displays the following information:
 - Acceptable file formats (i.e., .jpg, .gif, .tiff, .bmp, .png, .eps)
 - Resolution guidelines (TBD)
 - File preparation FAQs (TBD)
- User clicks on My Portfolio button, or accesses through navigation menu
- Interface for uploading images appears, which includes:
 - Window that shows files currently in portfolio
 - Ability to drag and drop multiple files into portfolio
 - Browse button to select images from local folders through window interface
- User either drags and drops images into portfolio or browses for images through window interface and clicks on Upload

- Application validates file formats. Any images are in correct formats will upload. Images in incorrect formats will not upload and will be listed with message about acceptable file types.
- Interface displays images being uploaded with progress bar
- Database stores image
- Interface displays Images Uploaded message upon completion

6. *Proposed functionality:* Application server formats images to specified sizes (see Figure 6 in System Design section.)

Requirements:

- When user uploads image it is sent to application server to process images at three different sizes resolutions:
 - Small for web, 72 ppi
 - Medium for multipurpose, 150 ppi
 - Large for print or high-resolution applications, 300 ppi
- Application server runs algorithm that calculates image sizes; maximum image size is based on the native file uploaded, and subsequent versions are down-sampled to lower resolutions and sizes.
- Application server with runs algorithm that decides optimal display format such as horizontal or vertical (i.e., portrait or landscape)
- Vector images (.eps) are not scaled

- Application server generates 3 thumbnails sizes per image for previewing images at different default sizes
- Application server sends all images to database
- Web server returns requested image size when user selects download image size

7. *Proposed functionality:* User can opt to enter metadata with images for search engine optimization (see Figure 7 in System Design section.)

Requirements:

- After a user uploads image an application begins that prompts user to enter metadata
- Preview of recently uploaded image is generated
- Form fields are generated for image metadata entry, which include: Unique image ID (automatically assigned integer), title, contributing artist (automatically assigned account user name, string), time/date created (mm/dd/yyyy), associated image keywords (string), associated subject categories (string)
- User enters optional metadata fields
- Each uploaded image is queued for sequential metadata processing
- User clicks Submit button
- Metadata captured and sent to database to be paired with Image ID as primary key

8. *Proposed functionality:* User can opt to enter profile information (see Figure 8 in System Design section.)

Requirements:

- Mandatory profile information includes user name and join date only; all other fields are optional
- User name and join date are generated with registration and automatically populated on profile page
- User enters supplemental profile information, which can include:
 - Portfolio thumbnail image (photo, icon, avatar, image, etc.)
 - Form fields to capture profile information with 250 word character limit
 - Contact information
 - Attach a resume
 - Social media sharing links
- User clicks Submit button to upload information to database. User can edit these fields at any time by clicking Edit button.
- Web server generates Portfolio page with customized profile display

9. *Proposed functionality:* User can opt to customize their portfolio display preferences (see Figure 9 in System Design section.)

Requirements:

- User clicks on Customize button to open portfolio customization interface
- Application interface allows user to customize the following options:

- Portfolio module can be set to carousel, thumbnail (default), or slideshow as default image displays
- Portfolio design can be set to several preconfigured skins that are controlled with HTML/CSS. Base skin will display as default.
- Portfolio typeface options to set custom fonts
- Portfolio color selection to set color scheme
- Portfolio background image
- User selects options through interface and clicks Submit button
- Preferences are stored in database
- Web server retrieves portfolio display changes and updates pages

10. *Proposed functionality:* User opts to share portfolio or images through integrated social media links

Requirements:

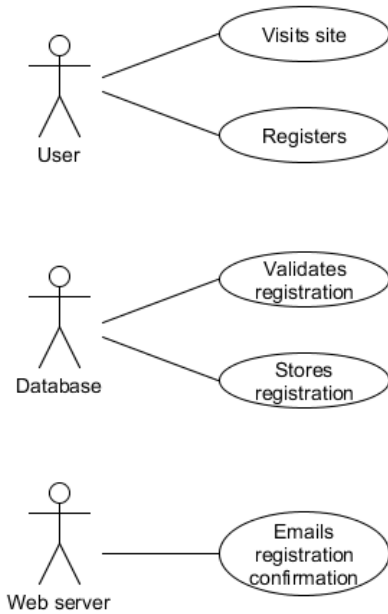
- User can set sharing preferences on Account Preferences page
 - User can select preferred social media sharing sites from list by selecting Preferences
 - Defaults are Facebook and Twitter
 - LinkedIn, Instagram, Pinterest, Google+, Tumblr, Flickr can also be selected
 - User clicks on Connect Account button to launch social media validation application

- Application validates user accounts through requested social media sites
 - If validated, user can selectively push projects to social media sites
 - If system can't validate social media account connection, user will receive notice message that account is not linked
- User can share images or portfolio through Portfolio page
 - User enters Portfolio by selecting from main navigational menu
 - Share button lets users share their entire portfolio to all or selected social media sites
 - Application delivers Project Posted message if successful
 - Application delivers Project Not Posted message if unsuccessful
- User can also share individual images while browsing, and clicking Share button

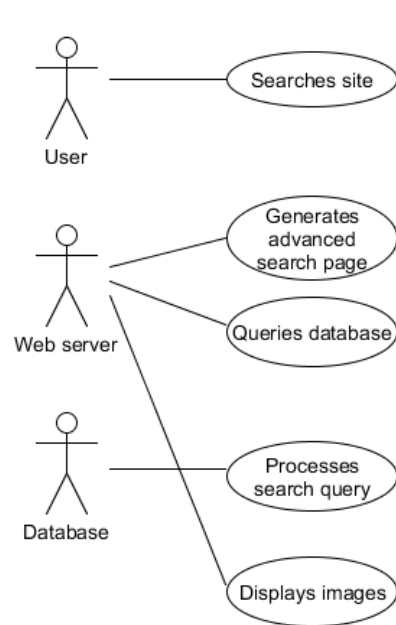
System Design

Use Case Diagrams

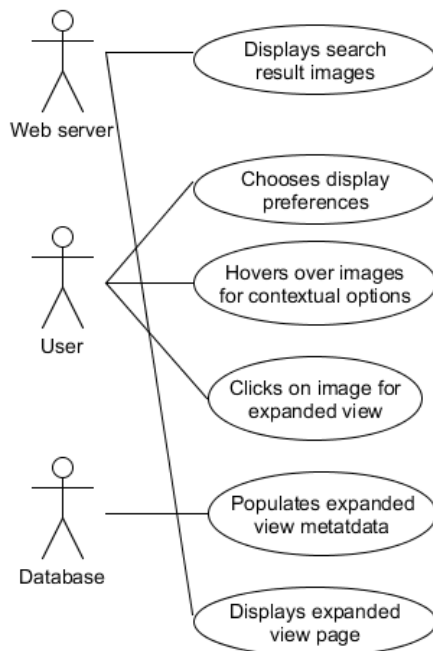
1.Registration



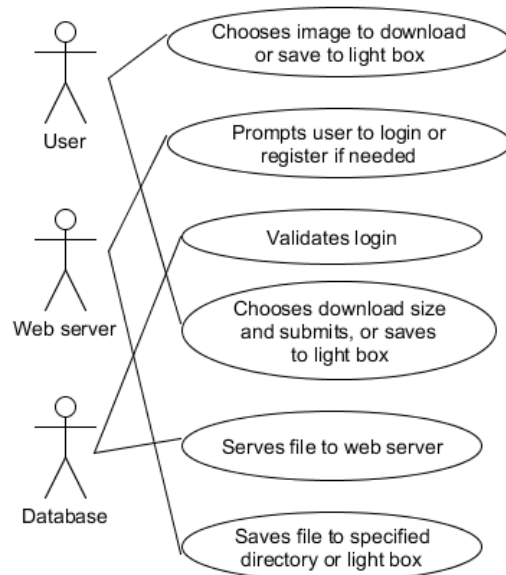
2.Portfolio search



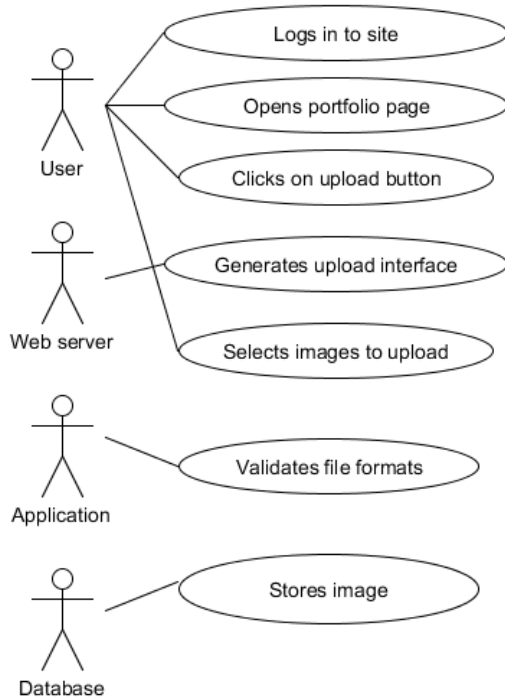
3.Portfolio browsing interface



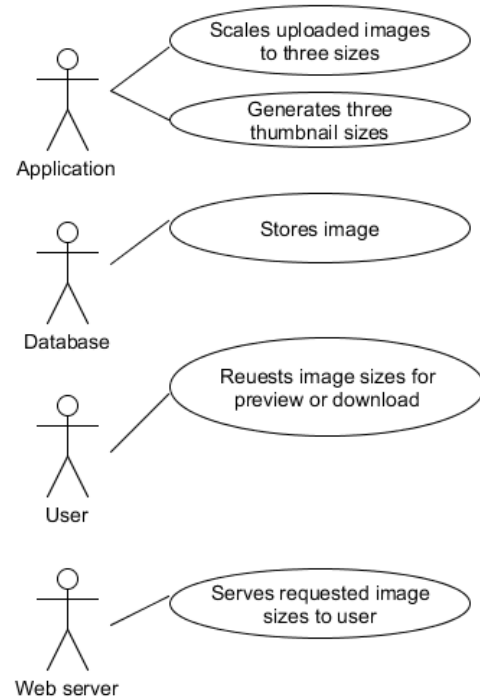
4. Download image or save to light box



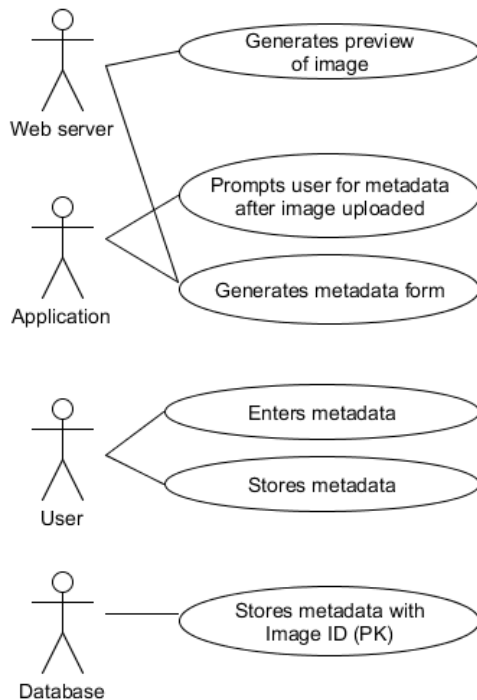
5. Upload portfolio images



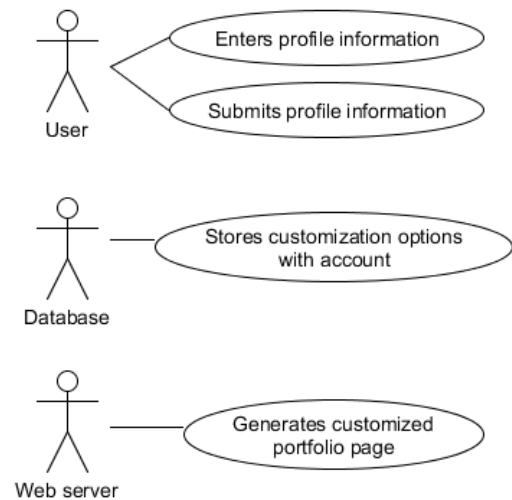
6. Application formats images



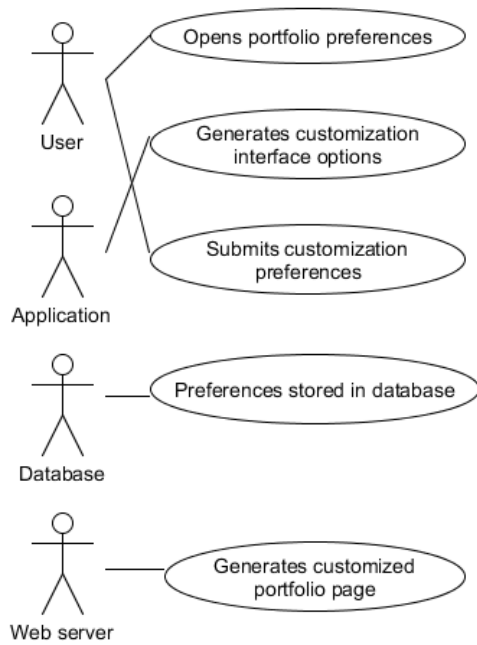
7. Metadata entry



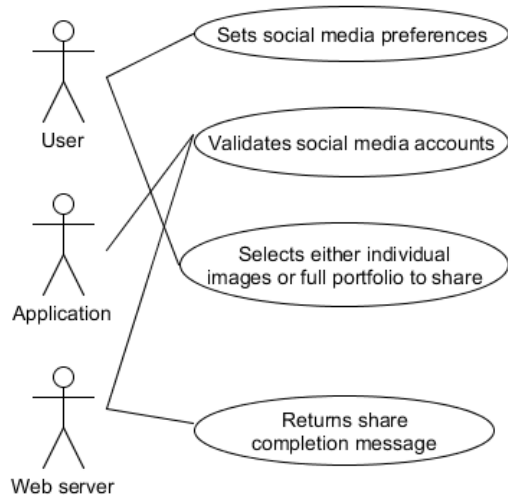
8. Customize profile



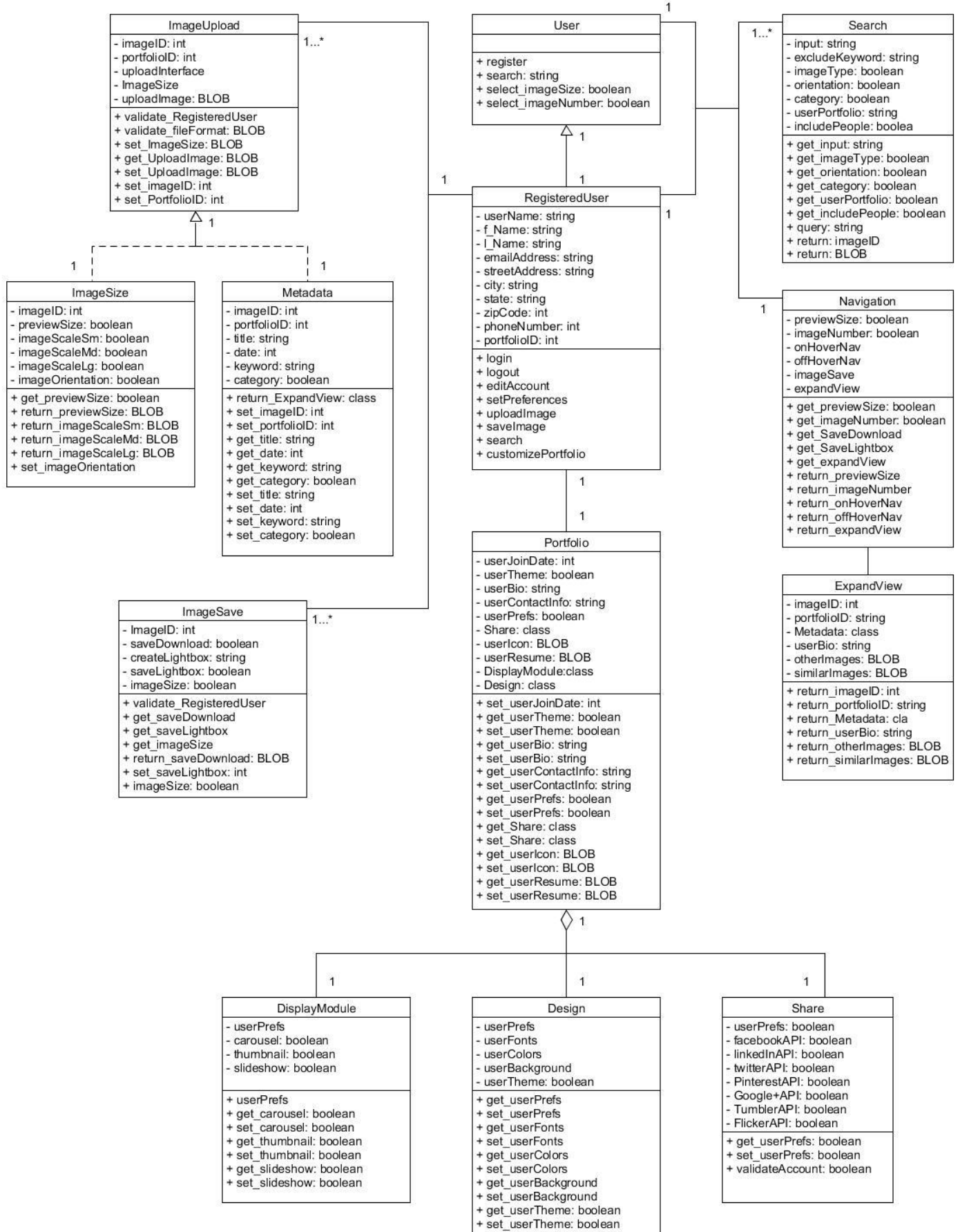
9. Customize portfolio



10. Social media sharing



Class Diagram



Sequence Diagrams

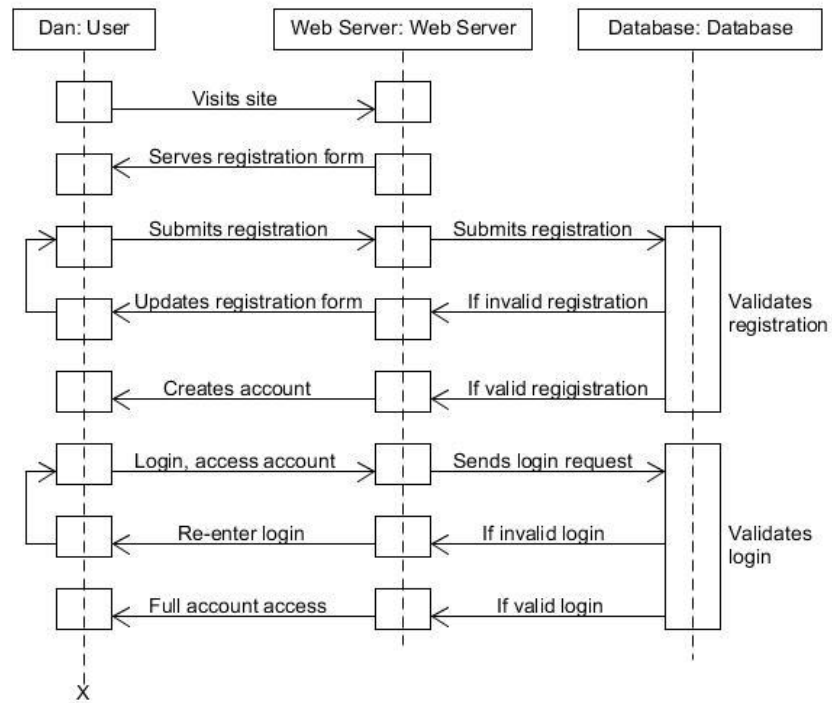


Figure 1. User registration and login process

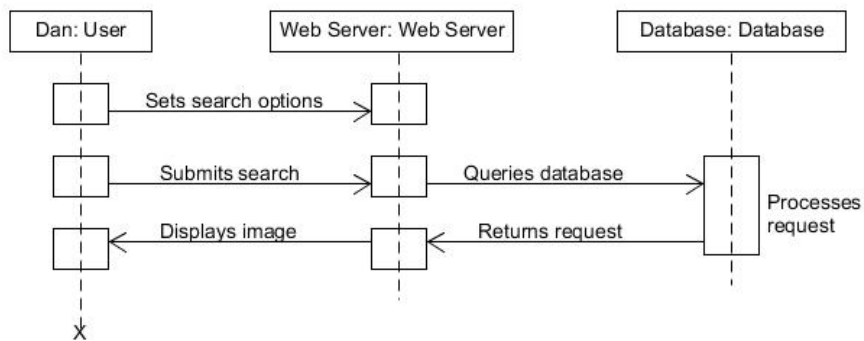


Figure 2. Portfolio search

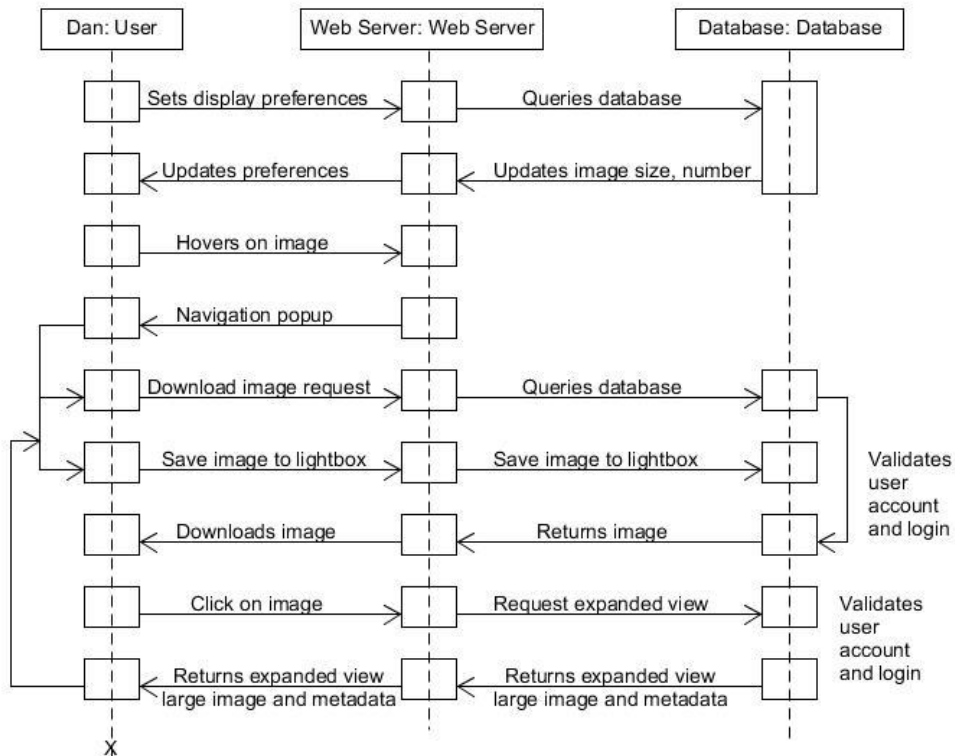


Figure 3. Portfolio browsing interface. If user is unregistered or not logged in, they will be prompted to create account or login.

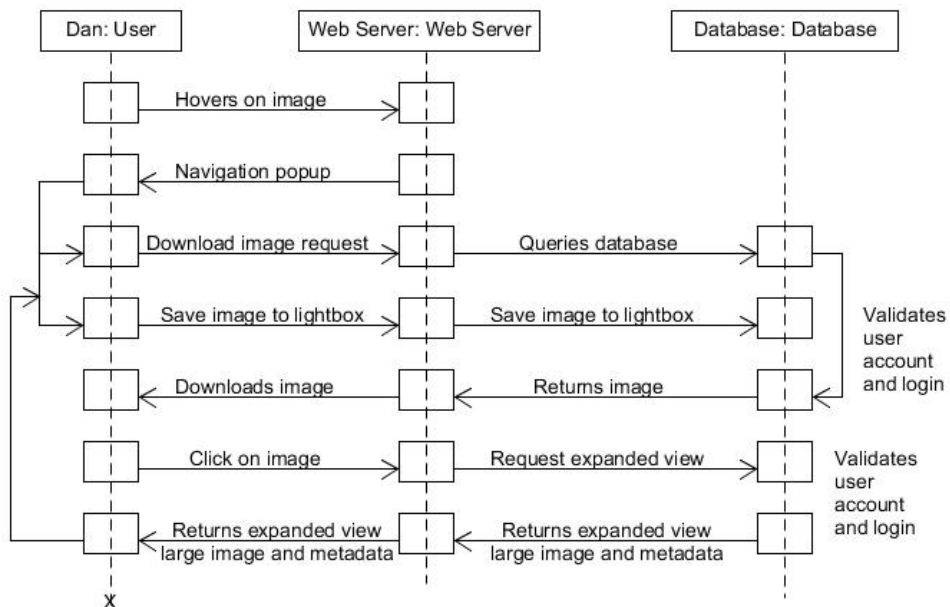


Figure 4. Download image or save to light box.
If user is unregistered or not logged in, they will be prompted to create account or login.

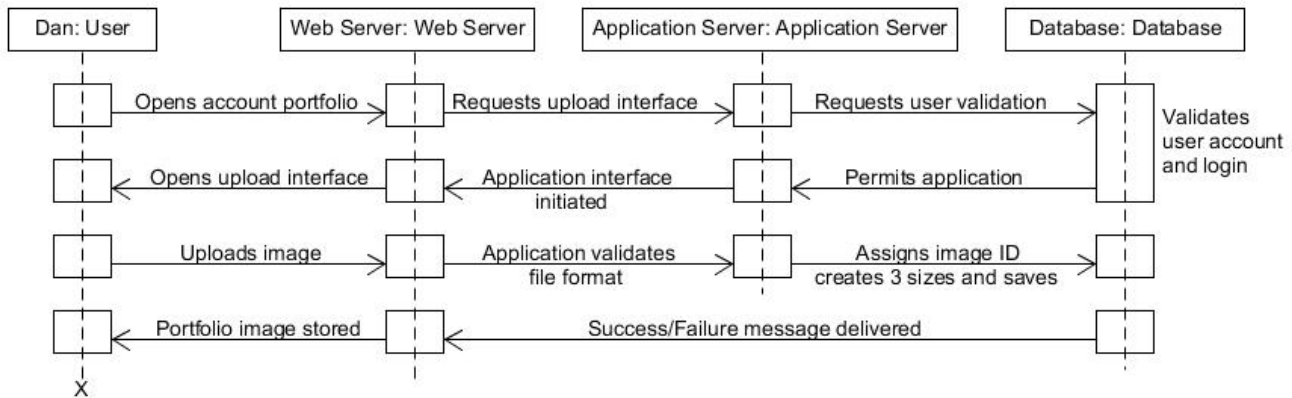


Figure 5. User uploads image to portfolio. User must be registered and logged in to upload images. Unregistered users will be prompted to register.

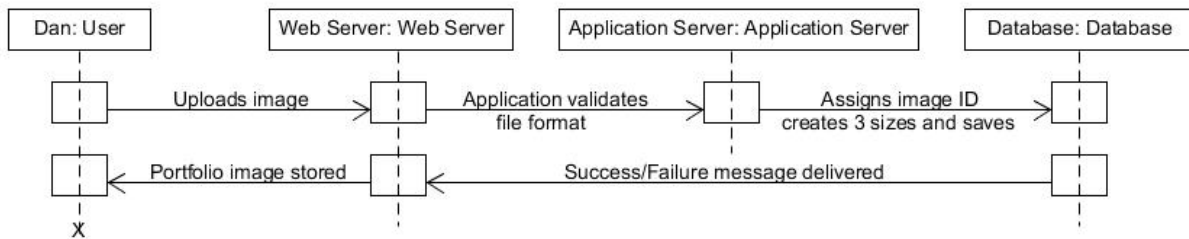


Figure 6. Application formats images. User must be registered and logged in to upload images. Unregistered users will be prompted to register.

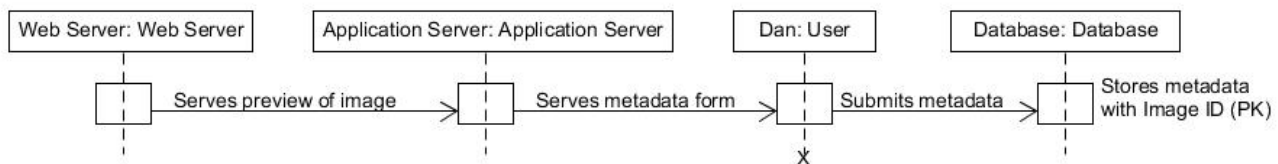


Figure 7. Metadata entry

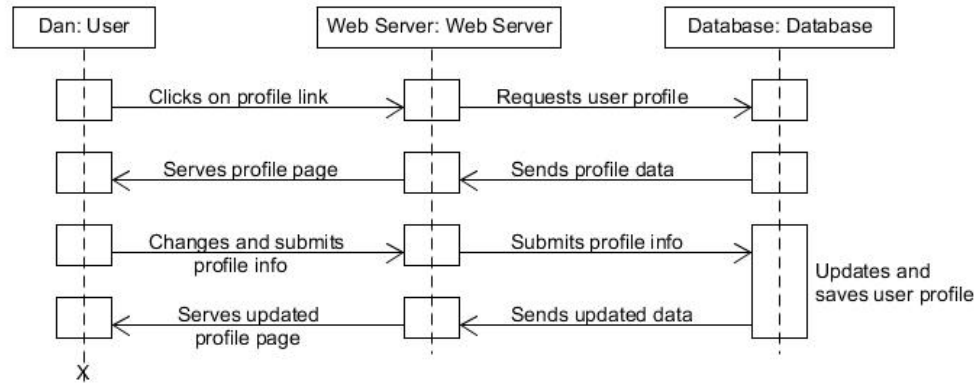


Figure 8. User enters profile information. User must have account and be logged in to create portfolio.

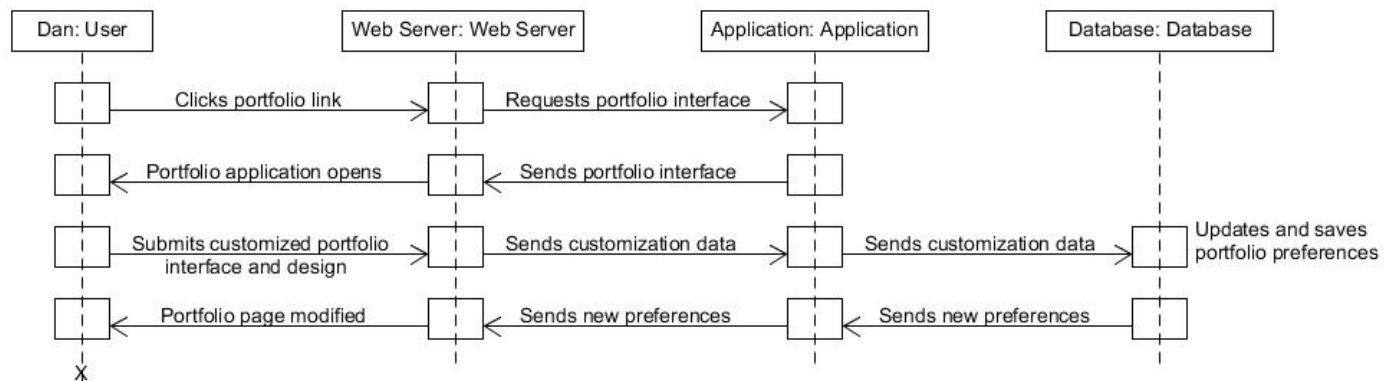


Figure 9. User customizes portfolio display and design. User must be logged in to use.

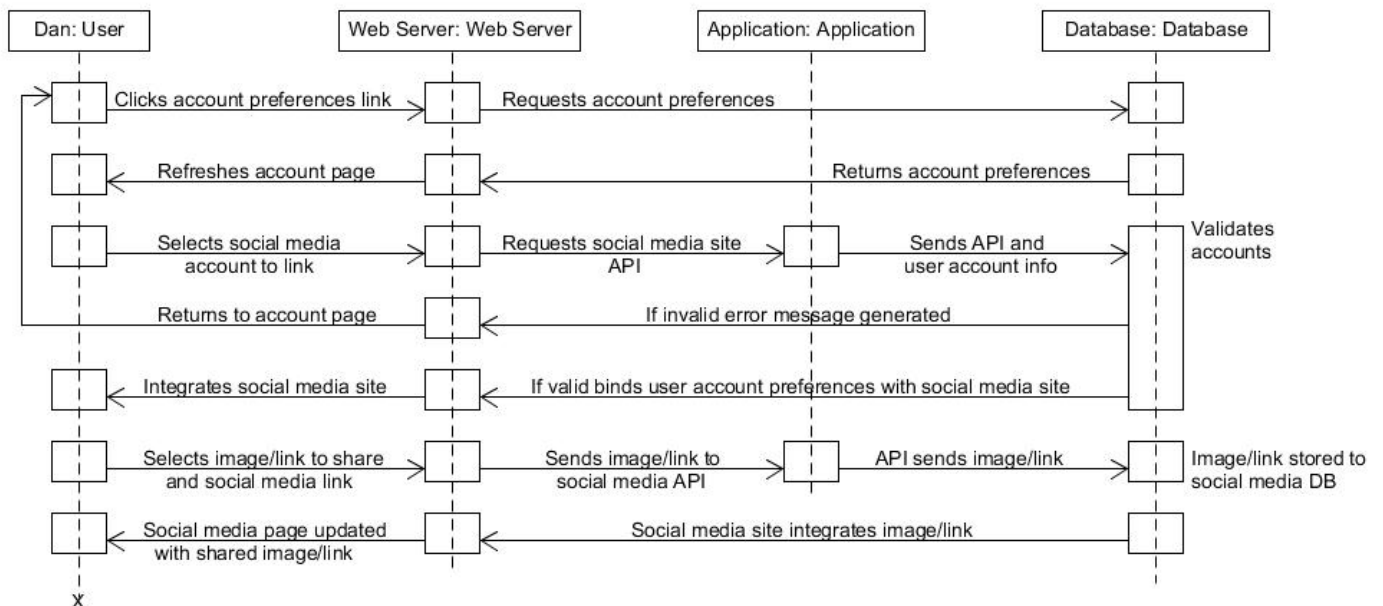
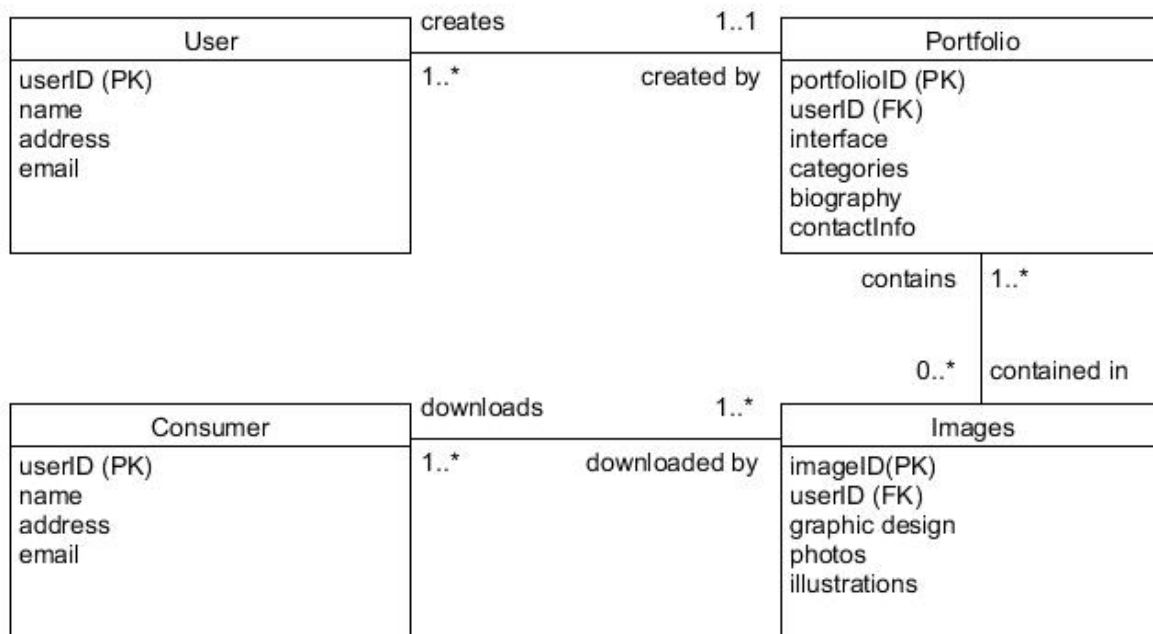


Figure 10. User shares portfolio or single images with integrated social media account function. User must be logged in to use.

Entity Relationship Diagram



Mock-up

