

Software Requirements Specification

for

**The archive: LGBTQ Storytelling App - Expanding
Mobile and Gamification**

Version 2.0

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[11/11/2022]

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Revision History

Name	Date	Reason For Changes	Version
First Rough Draft	November 4, 2022	First document with minor changes	1.0
Second Draft	November 11, 2022	Peer reviewed and expanded on requirements.	2.0
Third Draft	November 17, 2022	Added final requirements and additional diagrams	3.0

1. Introduction

The arqive is an LGBTQ+ website and mobile application where anyone can post stories that either happened in history or stories that happened to them. Users can mark the location of their story using pins pointing to where it took place. The arqive gives people the ability to mark their place in the world and share their stories!

1.1 Purpose

The document will provide a detailed description of The arqive website as well as the mobile application and all the software involved. Each section outlined will give an explanation of all the software implemented to create the website and the mobile application and will provide an in-depth explanation of what these both require in order to function properly.

1.2 Intended Audience and Reading Suggestions

This SRS Document contains the necessary information for software developers to review to understand the project in its entirety. Project managers will need sections 4.1, 4.2, and section 5 to understand the product. Documentation writers will be looking at the entire document to see if it is written correctly.

1.3 Product Scope

The arqive is a website and mobile application that allows users to post personal, historical, and community stories that can be shared and accessed on both the website and the application. The software gives the user the ability to create an account to be logged into both the app and website. Both registered and non-registered users (known as Anonymous Users) are given the ability to post stories of various categories, which are represented by the pins on the map. The pins on the map correspond to a story posted by a user on The arqive, which leads to an individual story page with detailed information on the story. Users have the ability to comment on stories, be informed of new stories in their area, bookmark their favorite stories, follow other users, flag stories for negative content, and also receive badges based on personal and community milestones.

1.4 Definitions, Acronyms, and Abbreviations

AR: Augmented Reality

FAQs: Frequently Asked Questions

LGBTQ+: Lesbian, Gay, Bisexual, Transgender, Queer, and more.

UI/UX: User Interface / User Experience

VPN: Virtual Private Network
VR: Virtual Reality

1.5 References

- 2019 - 2020 The archive SRS Version 3, Fadi Haddad, Klaudia Hernandez, Nathaniel Suarez, Tony Truong, Justine West
<https://csns.calstatela.edu/departments/cs/project/resource/view?projectId=7248602&resourceId=7672794>
- 2020 - 2021 The archive Mobile App SRS Version 2.0, Randy Arruda Jr., Balarama Carter, Richard Cruz-Silva, Abram Flores, Carlos Larios-Solis, Khang Le, Brandon Lee, Casandra Pahed, Evelyn Ramirez
<https://csns.cysun.org/departments/cs/project/view?id=7808908>
- 2021 - 2022 The archive: LGBTQ Storytelling App - Expanding Mobile and Gamification, Leslie Segovia, Erica Santos, Matthew Frias, Jesus Gonzalez, Kevin Kazaryan, Daniel Lee, Stewart McKenzie, Erica Payne, Bryan Sosa, Elio Vences
<https://csns.cysun.org/departments/cs/project/resource/view?projectId=7873470&resourceId=7888599>

2. Overall Description

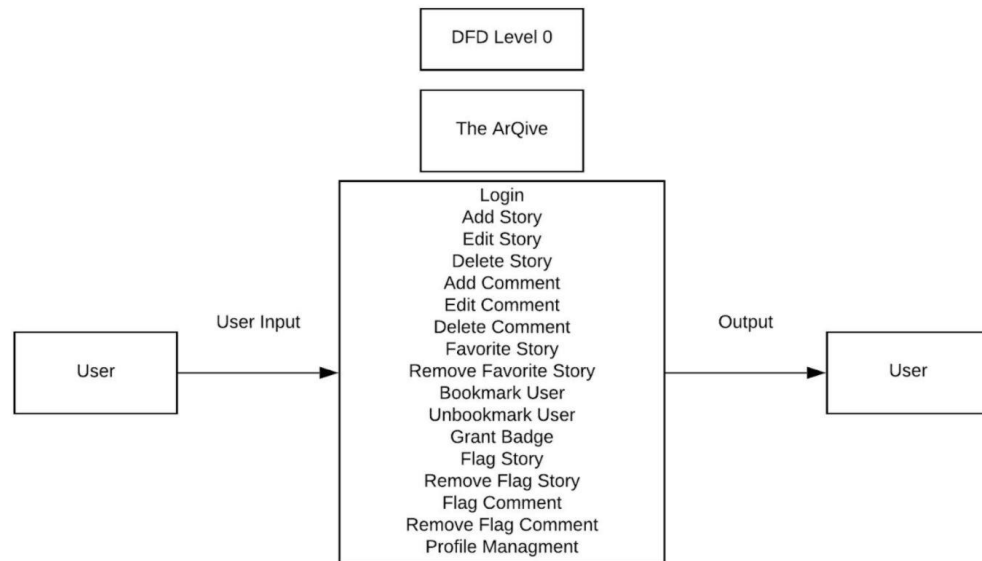


Figure 2.1 Level 0 DFD for the archive mobile application and website with User logged in

User Not Logged In

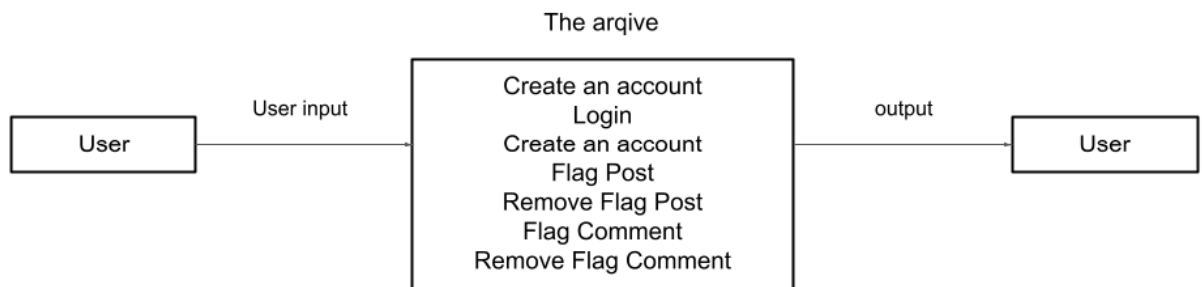


Figure 2.2 Level 0 DFD for when User is not logged in

2.1 System Analysis

This software is designed to be an archive of the collective experiences held by members of the LGBTQ+ community from all around the world.

The goals of this project are to expand on the software of last year's team and to add new features including gamification and AR to the mobile application and the website. The major technical hurdles of this project are to make sure everything we implement works with all of the project materials that were provided to us and to make sure that all of the data and privacy of the users are secured. To overcome these hurdles we will be testing at every step possible and making sure the software is properly moderated and all user data is protected.

2.2 Product Perspective

The web and mobile applications are intended for social interaction between users. It is intended for users to share their stories with other users, which can be read and commented on. In order to access all the features that The arqive has to offer, the mobile and web application will allow users to register on both the website and from within the mobile application itself. Whenever a new user registers, all the required data will be recorded in a database, and will also allow the user to use the same login credentials on the website.

2.3 Product Functions

- **Login screen:** This will allow the user to log into The arqive
 - **Username:** each user will have a unique username that will allow users to be distinguished from one another.
 - **Password Requirement:** This will ensure that users fulfill the secured password requirements
- **Add story:** users will be able to add a story pin on the map
 - **Location:** the user will have to specify a location to add the pin to the map
 - **Pin:** the user will have the ability to choose what type of pin they will post based on the story they will create (Categorical, Historical, or Personal)
 - **Users** will have the ability to see other users' stories
- **Delete Story:** users will be able to delete their own posts
- **Edit Story:** users will be able to edit their own posts
- **Comments:** users will be able to comment on stories
- **Bookmark:** users may bookmark / favorite posts
- **Follow:** users may follow users
- **Flagging posts, comments and Users:** will allow users to flag any of these objects
- **Profiles:** registered users will have access to their profile, where they can add a profile picture and bio
- **Profile Settings:** users will have access to their profile settings
- **Administrators and Moderators** will be able to alter or delete user stories
- **Administrators and Moderators** will be able to manage content

2.4 User Classes and Characteristics

- Non-registered(Anonymous) users can view posts
- Administrators can view, create, edit, and delete any posts, and appoint moderators.
- Moderators can view, create, edit, review any flagged content, and delete any content
- Registered users can create and delete their own posts. They can also comment on other people's posts.
 - Frequency of use: High
 - Technical Expertise: Basic phone application usage skills
 - Educational Level: Basic reading and writing skills
 - Characteristics: Anyone can see and pin stories

2.5 Operating Environment

For the mobile application accessible on a smartphone and web application

- Ubuntu 22.04 LTS
- Android
- iOS
- Django Rest
- Python3 3.7
- mod_WSGI
- Apache 2.2
- React Native 0.63

2.6 Design and Implementation Constraints

- Accessibility
 - Might be difficult for users with certain accessibility constraints to use the mobile application and the web application
- Security
 - If someone posts content that might put them at risk, there is no guarantee that they will be protected outside of the mobile app and web application

2.7 User Documentation

- Users have the option to create an account.
- Users have the option to log into an existing account

- Users can tap a location or click a button on mobile or left-click the add story button on the website to create a story and insert the story details. If they are logged in, it will post to the user's account, if they are not logged in, it will post anonymously.
- Users can enable Anonymous mode, which allows users to post and comment anonymously.
- The user can tap on existing pins to view them.
- The user can edit their own pin.
- Other users can comment and vote on other pins.
- Users can search for stories and users.
- Users can edit their profile
- Users have access to their profile settings
- Users can comment on stories
- Users can flag stories, comments and users.
- Administrators and Moderators have access to the Manage page.
- Administrators and Moderators can manage content.
- Administrators can submit FAQs.
- Users can submit an email to The arqive team within the Contact Us page.
- Users can access valuable resources within the Resources page.

2.8 Assumptions and Dependencies

We need to assume that the user can access the internet on their device.

- We must assume the user has basic knowledge of the internet.

We need to assume that the user has a smartphone.

- We must assume the user has basic knowledge of using a smartphone.

We must assume that they have a basic knowledge of using a personal computer (PC) or laptop

- We must assume they have knowledge of internet browsers on a PC.

2.9 Apportioning of Requirements

N/A

3. External Interface Requirement

3.1 User Interface

- The user shall see the home page with a navigation bar that shall guide the user to a specific section
- The home page shall contain the map with the story-pins and the ability to read the stories
- The user shall see a profile button located inside the navigation bar
- The user shall see a new post option located inside the navigation bar
- The user shall see a search option located inside the home page that would allow the user to search for specific stories
- The user shall see their profile after logging in located inside profile page, which shall allow the user to edit profile data and see their profile
- The user shall see a login option located inside the profile page if not logged in
- The user shall see an accessibility option in the settings page that shall allow the user to turn on/off accessibility options
- The user shall see an about us option in the settings menu that shall give a little background information about the application
- The user shall see a FAQs (frequently asked questions) option in the settings menu that shall guide the user to the FAQs page
- The user shall see a contact us option in the navigation bar that shall allow users to give feedback by entering their personal email or anonymously
- The user shall see a notification button located inside the navigation bar
- The user shall see notifications within the notification page
- The user shall see a bookmark button on the navigation bar
- The user shall see their bookmarked posts within the navigation bar
- The user shall see their followed users within the navigation bar
- The user shall see a splash screen introduction when opening the mobile app

3.2 Hardware Interfaces

The archive web application users must have a computer with internet access.

The archive mobile application users must have a current smartphone running iOS or Android with internet access.

The archive mobile application users must have a camera headset for simulating AR/VR.

3.3 Software Interfaces

- **OpenStreetMap API (free)**
 - Utilize the map of the world functionality
- **Recaptcha API (free)**
 - Helps protect the website through spam and abuse
 - Turing test to tell humans and bots apart
- **React Native Maps (free)**
 - Access geographic coordinates of selected regions of the world map
 - Adding markers to the world map
 - Removing markers to the world map
- **TinyMCE (free)**
 - Provides a rich-text editor

3.4 Communications Interfaces

Basic communications from the user to the product will require a web browser from any device or a smartphone (iOS or Android). Users will be redirected to an electronic form where they will submit the necessary information required to post on the website. HTTP will be forced wherever possible while attempting to secure as much information about the user as possible, but HTTPS will be accepted as well where SSL encryption is required. All accessible information will be stored safely in a database.

4. Requirements Specification

4.1 Functional Requirements

1. User Account Requirements

- 1.1. The system shall allow users to create an account**
 - 1.1.1. The system shall verify that each user creates a unique username**
 - 1.1.2. The system shall verify that each user creates passwords with 8 or more characters**
 - 1.1.3. The system shall verify that each user creates passwords with one or more symbols**
 - 1.1.4. The system shall verify that each user creates passwords with one or more numbers**
 - 1.1.5. The system shall verify that each user creates passwords with one or more upper and lowercase characters**
 - 1.1.6. The system shall verify that the user is 13 years of age or older by checking that they are of age when asked**
- 1.2. The system shall alert users when logging in that their password is incorrect if their password is incorrect**
- 1.3. The system shall allow the users to change their password**
 - 1.3.1. The system shall send an email to users to change password**
- 1.4. The system shall allow users to enter an anonymous mode**
 - 1.4.1. The system shall refer to a user's username as anonymous when in anonymous mode**
 - 1.4.2. The system shall not display a user's profile picture when in anonymous mode**
 - 1.4.3. The system shall not display a user's name when in anonymous mode**
 - 1.4.4. The system shall not display anonymous posts on a user's profile**
- 1.5. The system shall allow users to connect their Facebook, Instagram, Twitter, and Google personal social media accounts to their profile**
- 1.6. The system shall allow users to display their stories on their profile page**
 - 1.6.1. The system shall allow users to hide stories from their user page**
- 1.7. The system shall allow users to make their profile public**
- 1.8. The system shall allow users to make their profile private**
- 1.9. The system shall display a user's profile picture**
 - 1.9.1. The system shall allow users to upload a new profile picture**
 - 1.9.2. The system shall allow users to alter their current profile picture**
- 1.10. The system shall display a user bio on a user's profile**
 - 1.10.1. The system shall allow users to edit their bio**
 - 1.10.2. The system shall allow users to remove their bio**

- 1.11. The system shall allow the user to delete their account
 - 1.11.1. The system shall allow a user to opt in to keep their stories posted as anonymous following account deletion
 - 1.11.2. The system shall allow users to delete all of their posts along with the account
- 1.12. The system shall allow users to follow other users
 - 1.12.1. The system shall show users what users they currently follow
- 1.13. The system shall users to communicate with one another

2. Gamification

- 2.1. The system shall give registered users badges for completing community milestones
- 2.2. The system shall give registered users badges for completing user milestones
- 2.3. The system shall display a registered user's badges on their profile page
- 2.4. The system shall allow registered users to display a badge next to their username

3. Map Requirements

- 3.1. The system shall display a map
- 3.2. The system shall display all story pins on the map
- 3.3. The system shall be able to resize the map
- 3.4. The system shall be able to display a map inside individual story pages
- 3.5. The system shall allow users to tap on a story pin on the map
- 3.6. The system shall show an AR version of the map in the mobile application
 - 3.6.1. The system will show specific areas of a map using AR through the camera of a smartphone

4. User Role Requirements

- 4.1. The system shall allow specific users to be Administrators
 - 4.1.1. The system shall allow Administrators to edit stories
 - 4.1.2. The system shall allow Administrators to delete stories
 - 4.1.3. The system shall allow Administrators to delete user comments
 - 4.1.4. The system shall allow Administrators to delete users
 - 4.1.5. The system shall allow Administrators to demote users from the Moderator role
 - 4.1.6. The system shall allow Administrators to promote users to the Moderator role
 - 4.1.7. The system shall allow Administrators to promote users to the Administrator role
 - 4.1.8. The system shall allow Administrators to add FAQs

- 4.1.9. The system shall allow Administrators to edit FAQs
 - 4.1.10. The system shall allow Administrators to delete FAQs
 - 4.1.11. The system shall allow Administrators to edit the About Us section
- 4.2. The system shall allow specific users to be Moderators
 - 4.2.1. The system shall allow Moderators to edit stories
 - 4.2.2. The system shall allow Moderators to delete stories
 - 4.2.3. The system shall allow Moderators to delete user comments

5. Platform Requirements

- 5.1. The mobile application shall be accessible through a smartphone
 - 5.1.1. The phone application shall be available on iOS smartphones
 - 5.1.2. The phone application shall be available on Android smartphones
- 5.2. The web-application shall be accessible through a web browser
 - 5.2.1. The web-application shall be available on the Google Chrome web browser
 - 5.2.2. The web-application shall be available on the Firefox web browser
 - 5.2.3. The web-application shall be available on the Safari web browser
 - 5.2.4. The web-application shall be available on the Microsoft Edge web browser
 - 5.2.5 The browser must support WebGL for AR/VR
 - 5.2.6 The browser must support webRTC for AR/VR

6. Multimedia Requirements

- 6.1. The system shall allow users to submit links within a story
 - 6.1.1. The system shall display any links that a user submits
- 6.2. The system shall allow users to upload images with a story
 - 6.2.1. The system shall display the images that a user posts

7. Security Requirements

- 7.1. The system shall encrypt user information
- 7.2. The system shall protect itself from malicious agents
 - 7.2.1. The system shall time out users after a certain amount of failed login attempts
 - 7.2.2. The system shall require moderator approval of posts beyond some threshold within a time period

8. Content Moderation Requirements

- 8.1. The system shall automatically flag stories and comments that contain spam for moderation

- 8.1.1. The system shall quarantine stories and comments after a certain number of user flags have been detected until moderation approval
- 8.2. The system shall automatically flag stories and comments that contain vulgar or offensive language for moderation
 - 8.2.1. The system shall quarantine stories and comments after a certain number of user flags have been detected until moderation approval
- 8.3. The system shall automatically flag stories and comments that contain NSFW / explicit content
 - 8.3.1. The system shall quarantine stories and comments after a certain number of user flags have been detected until moderation approval
- 8.4. The system shall display netiquette guidelines to users and provide notifications to remind them of these guidelines

9. Story Requirements

- 9.1. The system shall allow users to post stories
 - 9.1.1. The system shall allow users to edit stories that they posted
 - 9.1.2. The system shall allow users to delete stories that they posted
 - 9.1.3. The system shall allow users to post stories as private or public
- 9.2. The system shall allow anonymous registered users to post stories
 - 9.2.1. The system may allow anonymous registered users to edit stories that they posted
 - 9.2.2. The system may allow anonymous registered users to delete stories that they have posted
 - 9.2.3. The system shall allow anonymous registered users to post stories as private or public
- 9.3. The system shall allow users to add stories to certain locations on the map
 - 9.3.1. The system shall allow users to add stories to certain locations by entering an address
 - 9.3.2. The system shall mask the location of people by searching by zip code for those who do not want to provide an exact location.
 - 9.3.3. The system shall allow users to choose no level of anonymity radius
 - 9.3.4. The system shall allow users to choose a minimum level of anonymity radius
 - 9.3.5. The system shall allow users to choose a moderate level of anonymity radius
 - 9.3.6. The system shall allow users to choose a maximum level of anonymity radius
 - 9.3.7. The system shall have the map span out and show a pop up when a story is added

- 9.3.8. The system shall allow users to edit their stories'**
- location**
- 9.4. The system may allow multiple users to post to a single location that contains all previous posts in that location**
 - 9.5. The system shall allow users to create stories by tapping the option to post a story.**
 - 9.6. The system shall allow users to add dates to stories**
 - 9.7. The system shall allow users to add text to stories**
 - 9.8. The system shall allow users to upload images to stories**
 - 9.9. The system shall allow users to add hyperlinks to stories**
 - 9.10. The system shall allow users to comment on stories**
 - 9.11. The system shall allow users to create pins for different categories**
 - 9.12. The system shall provide additional fields for different types of stories**
 - 9.12.1. The system shall include date as a field for historical stories**
 - 9.12.2. The system shall include date as a field for community stories**
 - 9.12.3. The system shall include data as a field for personal stories.**
 - 9.12.4. The system shall include geographic location as a field for all stories**
 - 9.13. The system shall cluster markers by categories**
 - 9.13.1. The system shall cluster markers by geographic location**
 - 9.14. The system shall allow users to search for stories**
 - 9.14.1. The system shall allow users to search for stories by search term**
 - 9.14.2. The system shall allow users to search for stories by time**
 - 9.14.3. The system shall allow users to search for stories by story type**
 - 9.14.4. The system shall allow users to search for stories by date created**
 - 9.15. The system shall allow all registered users to submit personal stories**
 - 9.16. The system shall allow all registered users to submit community stories**
 - 9.17. The system shall allow all registered users to submit historical stories**
 - 9.18. The system shall allow users to connect existing social networking sites within story submissions.**
 - 9.19. The system shall allow users to share stories on social media**
 - 9.19.1. The system shall allow users to share stories on Twitter**
 - 9.19.2. The system shall allow users to share stories on Facebook**
 - 9.19.3. The system shall allow users to share stories on Instagram**
 - 9.20. The system shall allow users to bookmark stories**
 - 9.20.1. The system shall show users their bookmarked stories**
 - 9.21. The system shall allow users to see a warning for explicit content in a story**
 - 9.21.1. The system shall allow users to choose if they want to see a**

story considered NSFW

9.22. The system shall allow users to turn off comments for their posts

10. FAQ Requirements

10.1. The system shall display a FAQ section

10.1.1. FAQs shall display questions

10.1.2. FAQs shall display answers to questions

10.1.3. FAQs shall provide information on safety and privacy

11. About Us Requirements

11.1. The system shall display an About Us section

11.1.1. The system shall display the purpose of The arqive in the About Us section

12. Support Us Requirements

12.1. The system shall display a Support Us section

12.1.1. Support Us shall display how you can help

12.1.1.1. Support Us shall display a hashtag for use on social media

12.1.1.2. Support Us shall display posting a story

12.1.2. Support Us shall display social media links for the arqive

13. Resource Requirements

13.1. The system shall display a Resources section

13.1.1. The system shall display helpful organizations and hotlines

13.1.2. The system shall display a contact page / email link for any missed organizations and hotlines

13.1.3. The system shall provide Administrators with the ability to add to and edit the Resources page

14. Accessibility Requirements

14.1. The system shall allow the user to turn on accessibility when needed

14.1.1. The system shall allow the user to have the page read to them

14.1.2. The system shall allow the user to change the contrast of the webpage

14.1.3. The system shall allow the user to make text bigger

14.1.4. The system shall allow the user to change the text spacing

14.1.5. The system shall allow the user to stop animations

14.1.6. The system shall allow the user to increase the size of the cursor

14.1.7. The system shall allow the user to have a reading guide

14.1.8. The system shall allow the user to have tooltips

15. Settings Requirements

- 15.1. The system shall allow users to enable or disable accessibility**
- 15.2. The system shall allow users to delete their account**
- 15.3. The system shall allow users to write a bio to show on their profile page**
- 15.4. The system shall allow users to make their profile public or private**

16. Contact Us Requirements

- 16.1. The system shall allow the user to post feedback on the Contact Us page**
 - 16.1.1. The Contact Us page will provide users to share their email for responses**

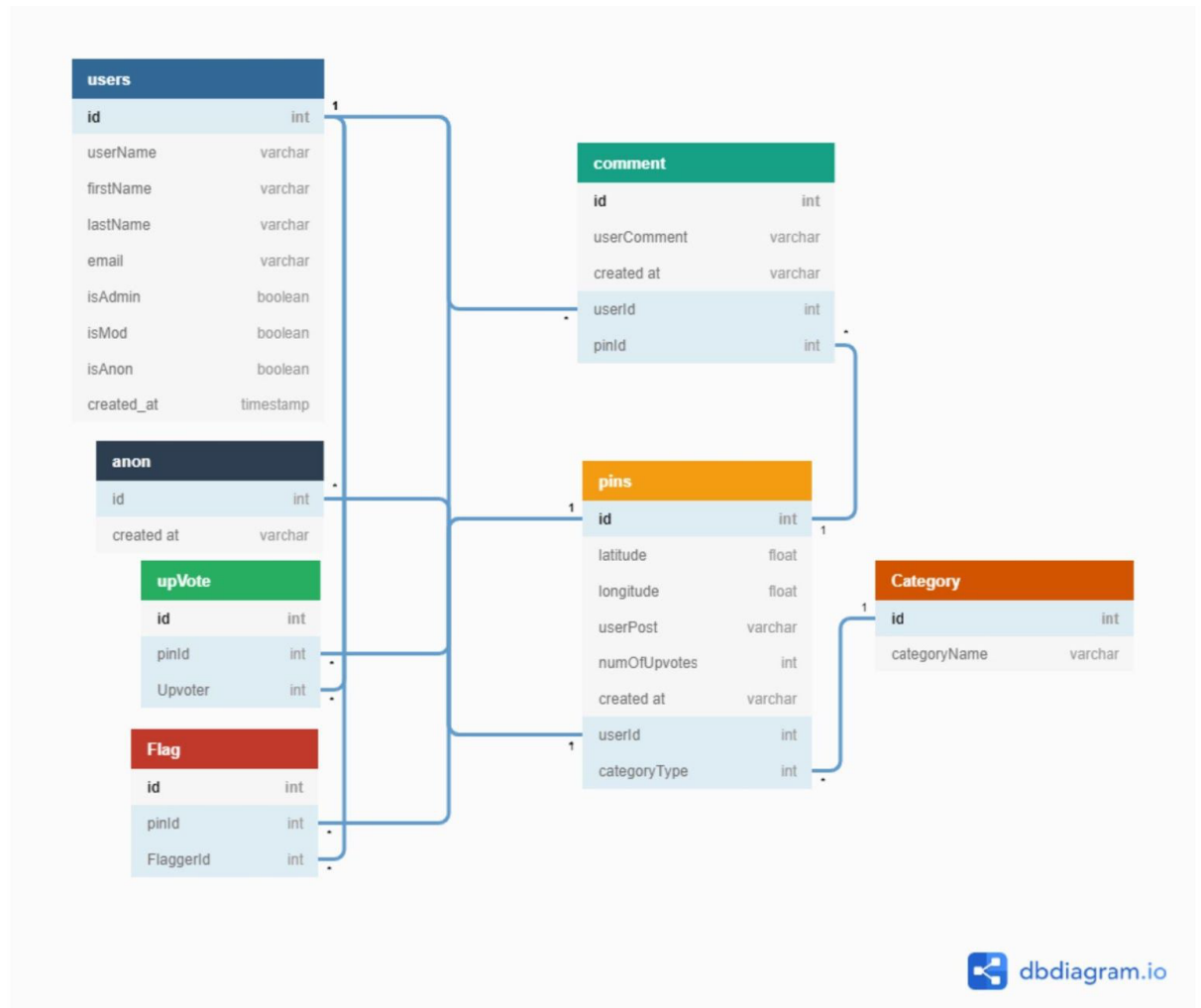
17. Manage Requirements

- 17.1. The system shall allow Administrators and Moderators to access the Manage page**
 - 17.1.1. The system shall allow the Administrators and Moderators to manage users**
 - 17.1.2. The system shall allow the Administrators and Moderators to check flagged stories**
 - 17.1.3. The system shall allow the Administrators and Moderators to check flagged comments**

4.2 External Interface Requirements

- **The archive requires a database to store all the data from its users.**
- **The archive requires a backup database to store all the data in case the first one fails**
- **The archive shall not disclose any personal information**
- **The archive requires a computer or mobile device with internet access in order for users to access the website.**
- **The archive requires a compatible mobile device with internet access in order for users to access the mobile application**

4.3 Logical Database Requirements



4.4 Design Constraints

- The archive can not guarantee the safety of data during an attack
- The archive can not guarantee the quality of posts on its website

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The archive web and mobile applications should be able to scale up if most of its users are using the apps simultaneously.

5.2 Safety Requirements

Users posting their exact locations in cities, territories, and/or countries where certain sexual orientations and/or gender identities are illegal may result in them facing mental and physical harm. Actions that must be taken in order to ensure the safety of users throughout the world would include implementing safer security requirements. These security requirements could include utilizing a Virtual Private Network (VPN) in order to create a secure connection to another network that would safeguard an individual's internet use from public and private entities. An alternative to using a VPN would be to implement TOR browsing, where the user's IP address will never be stored on our servers, but an IP address masked by multiple nodes through TOR browsing will be.

5.3 Security Requirements

- The user will have a password only known to them
- The system may use a VPN to protect the user's identity and current location
- The system may use Tor to protect the user's identity and current location
- The system shall encrypt private user data
 - The system shall encrypt user emails

5.4 Software Quality Attributes

In the case that a user accesses the web application from different types of browsers, The archive should be able to correctly update across major browsers. Developers of The archive will be set as an administrator to help clear the site of negative or unrelated content. The mobile application should be accessible and usable to both Android and iOS mobile users. It should be able to correctly update both of them.

5.5 Business Rules

- Administrators and Moderators can edit and delete posts
- Administrators can edit and delete profiles
- Administrators and Moderators can manage users
- Administrators and Moderators can delete comments

- **Administrators and Moderators can view all flagged stories that are flagged more than x times**
- **Administrators and Moderators can view all flagged comments**

5.6 Other Nonfunctional Requirements

Given that The archive deals with stories belonging to the LGBTQ+ community, it is of utmost importance to provide users with as much security as we can. In many areas of the world, they are a group that is often persecuted and any exposed information may lead to dire consequences. Given that statement, it would be unethical to allow users to post and as a platform not ensure that they are protected. To ensure that our users are protected as much as possible we plan to take certain steps, allow anonymous posts, post with an address, and encrypt user data.

When it comes to users, we allow users to sign up with an account containing a username and allow them to post anonymously if desired. Given how in traditional social media, or mobile applications, we assume location data or user data to be public, we allow users to make posts without their username being tied to it. Furthermore, we allow users to create posts not only with their current location but also through the use of addresses and anonymity radii when the user is in a comfortable and secure location. This would aid in keeping the privacy of our users and prevent their real location from being exposed to a malicious agent.

In the event that server security is breached we plan to have sensitive information encrypted. By encrypting data we can ensure that even if it is exposed, it is illegible to those that have gained access to said data through improper means. If a user's email were to be exposed, it could be used to find them on social media platforms or to harass them.

6. Conclusion

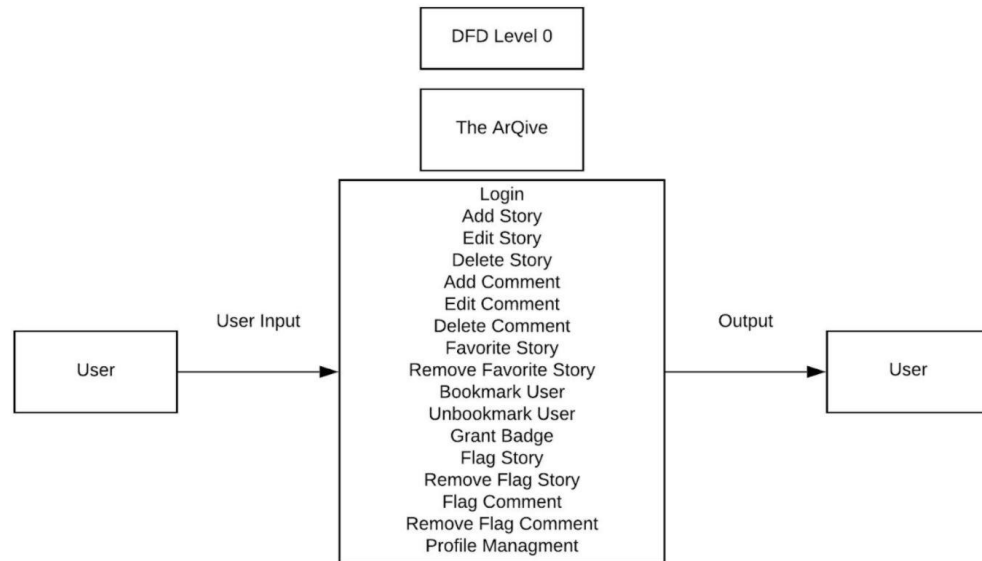
In conclusion, maintaining user privacy is a priority in a platform aimed at members of the LGBTQ+ community, especially given that in many areas they are persecuted. The steps we plan to take will help ensure that users can maintain a high level of privacy and anonymity while using our platform. We are sure that this is not an exhaustive list of possibilities, but one we can implement given our time frame.

Appendix A: Glossary

AR	Augmented Reality
AWS	Amazon Web Service
ER	Entity Relation
LGBTQ+	Lesbian, Gay, Bisexual, Transgender, Queer, and more
NSFW	Not Safe For Work
SRS	Software Requirement Specification
VPN	Virtual Private Network
VR	Virtual Reality

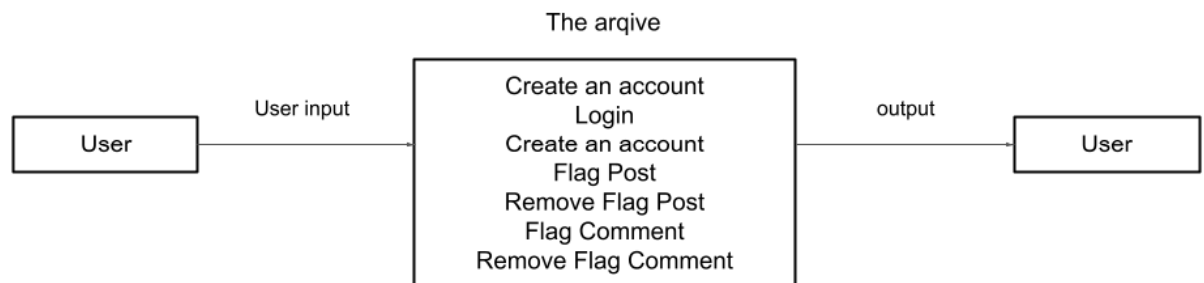
Appendix B: Analysis Models

DFD Level 0: User Logged In

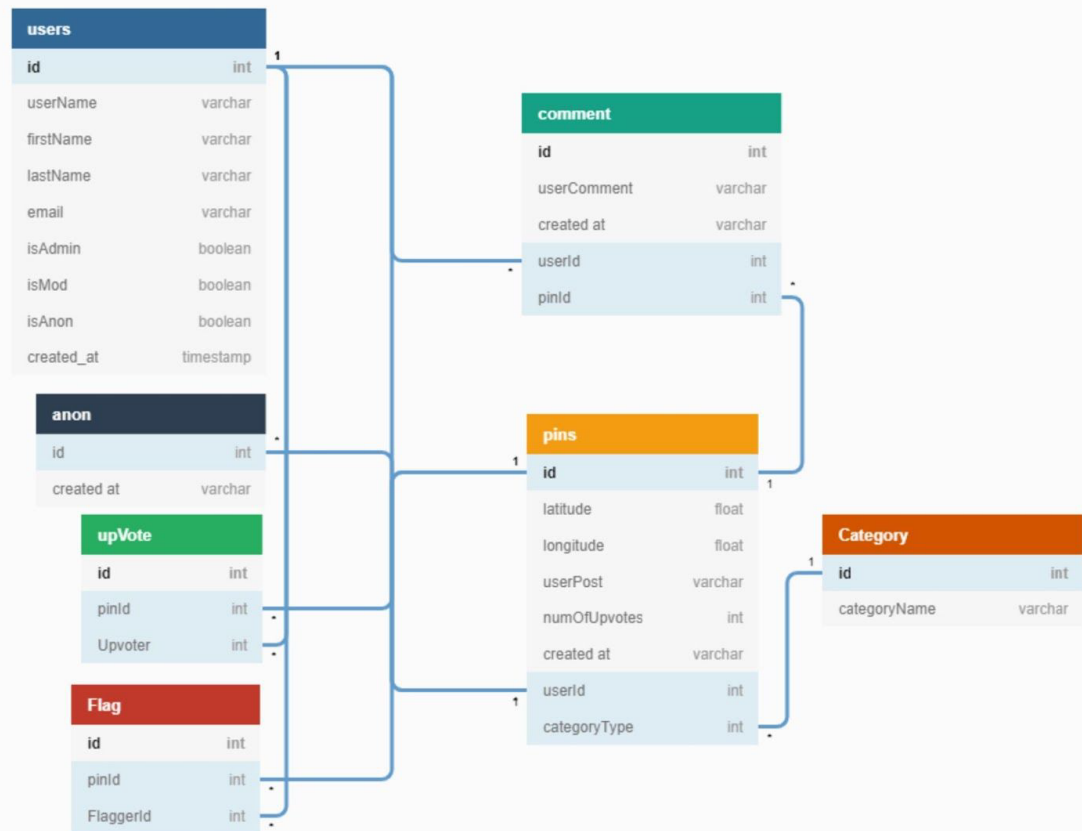


User Not Logged In

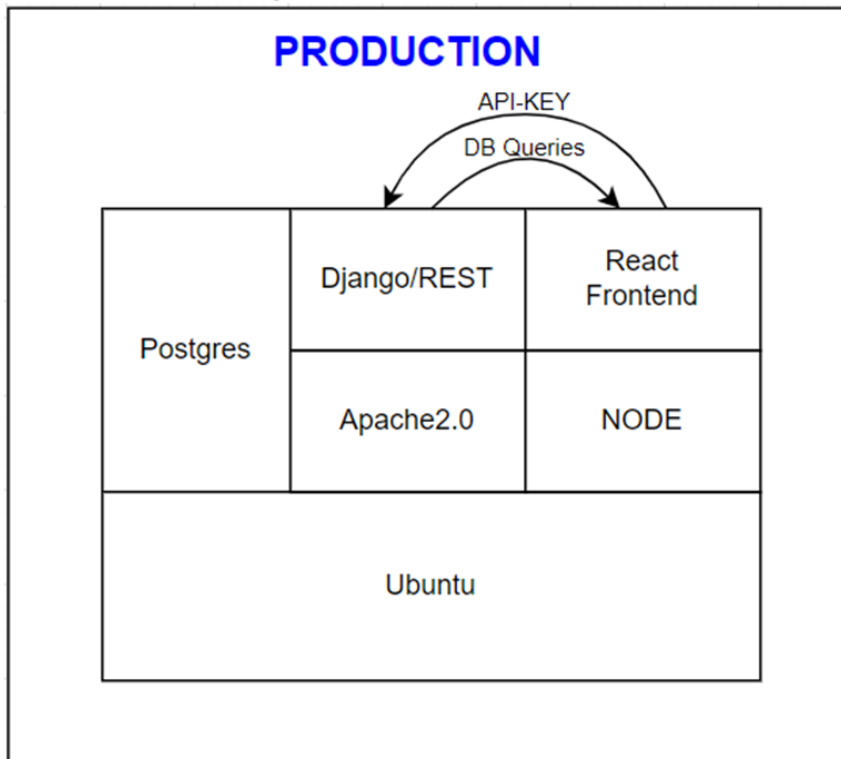
User Not Logged In



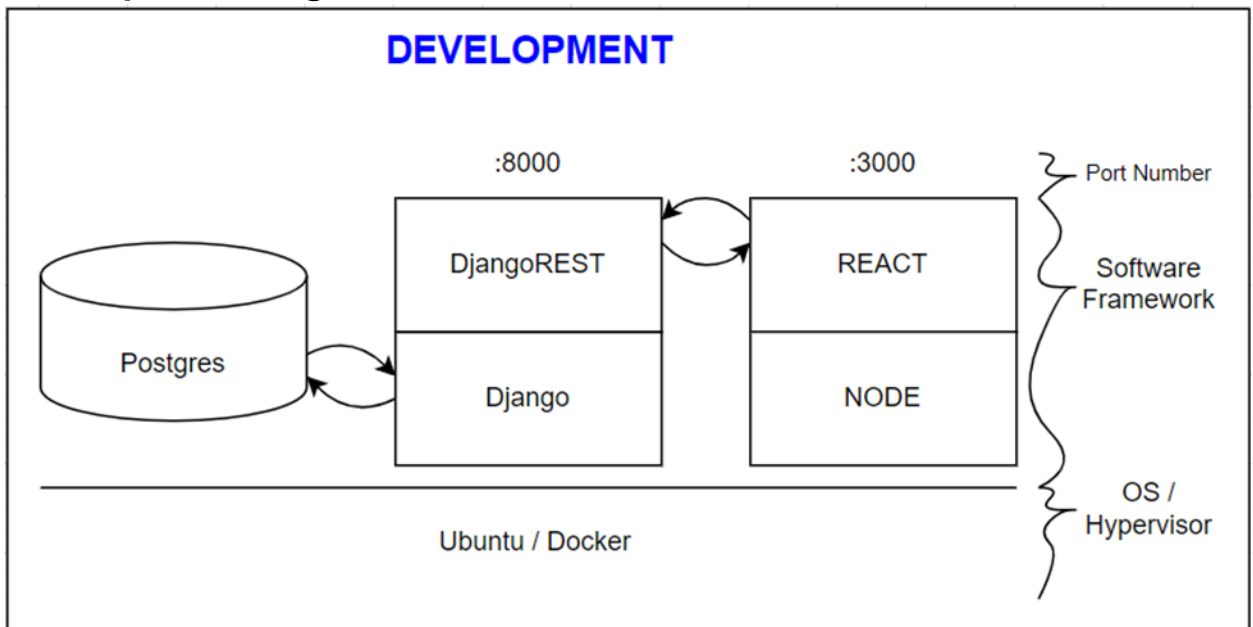
Database Diagram



Production Diagram:



Development Diagram:



Class Diagram

