

LifeShare

by

Justin Roseman, Chevaux Beasley, & Khron Clements

Submitted to
the Faculty of the School of Information Technology
in Partial Fulfillment of the Requirements for
the Degree of Bachelor of Science
in Information Technology

© Copyright 2022 Roseman, Beasley, Clements

The author grants to the School of Information Technology permission
to reproduce and distribute copies of this document in whole or in part.

<u>Justin Roseman</u>	<u>4/18/2022</u>
Justin Roseman	Date
<u>Chevaux Beasley</u>	<u>4/18/2022</u>
Chevaux Beasley	Date
<u>Khron Clements</u>	<u>4/18/22</u>
Khron Clements	Date
<u>Vineela Kunapareddi</u>	<u>4/20/2022</u>
Vineela Kunapareddi, Faculty Advisor	Date

University of Cincinnati
College of
Education, Criminal Justice, and Human Services

April 2022

Table of Contents

Abstract	4
Introduction	5
1.1. Project Summary:	5
1.2. Problem Statement:	5
1.3. Solution:	5
1.4. Project Source:	6
2. Project	7
2.1. Project Objectives/Goals:	7
2.2. Project Scope:	7
2.3. Quick Project Timeline:	8
2.4. Technologies Used:	9
2.5. Technical Diagrams:	11
2.6. User Personas:	13
2.7. Use Cases:	18
2.8. Use Case Diagram:	21
2.9. Testing Plan:	21
2.10. Change Management Plan:	23
2.11. Budget:	24
2.12. Problems Encountered and Analysis of Problems Solved:	24
3. Conclusion	25
4. References	26

LIST OF ILLUSTRATIONS

Tables

Table 1: Project Timeline	10
Table 2: User Persona 1	17
Table 3: User Persona 2	17
Table 4: User Persona 3	18
Table 5: User Persona 4	18
Table 6: User Persona 5	19
Table 7: User Persona 6	20
Table 8: Use Case 1	21
Table 9: Use Case 2	22
Table 10: Use Case 3	22
Table 11: Test Logs	27
Table 12: Budget Table	33

Figures

Figure 1: Application Diagram	15
Figure 2: App Flow Diagram	16
Figure 3: Database Diagram	16
Figure 4: Use Case Diagram	24

ABSTRACT

With the rise of COVID-19, everything has begun to shift toward being on the internet. Grieving specifically has needed to move toward the internet because of how contagious COVID-19 has been. Before the pandemic families and friends would keep photos of their loved ones on their phones or in a photo album. These memories can be easily lost forever by misplacing the photo album or damaging your phone. Our solution, LifeShare, is a web application that would allow families to share the legacies of those who have passed on. The users can set up Vault pages for their loved ones, and give everyone in the family the option to add on to the album and share memories of their loved ones. LifeShare is a platform that allows users to grieve, reminisce through content and share the legacy that their loved ones created. In this paper we will discuss the web application we decided to build for our senior capstone project, called Lifeshare. Next, we will outline the objectives and project goals, following up with the project timeline and the tech stack. We will then review some diagrams that will better explain how our web application works and finally, we will review the budget for our project, testing plan, and change management plan.

1. Introduction

1.1. Project Summary:

LifeShare is a web application and social platform where people can go to upload and view the content of loved ones that have passed on. Content can be saved by uploading images, videos, audio files, and documents to a user's page. By backing up the data and storing it on servers located in different geographical areas LifeShare will ensure the content will be safe and accessible. We refer to this page as the Vault. This application allows family, friends, and co-workers to share memories, converse and reminisce. Users will also be able to communicate through the comment section on Vault posts and share content via Facebook, Twitter, and other social media platforms.

1.2. Problem Statement:

According to the CDC, there are 2.8 million deaths each year in the U.S. alone. 60 million worldwide. Once someone you care about dies, the images, videos, drawings, and audio files become all that is left of them. This makes this content extremely valuable as it represents their life legacy. "For our parents and grandparents, it was easy enough to organize, assemble and pass along a handmade book that told the story of their children's lives in photographs. But the digital world has seriously complicated that rite of passage." (Heidi Glenn).

The content we do have of those that have passed on has the power to help us remember, celebrate, and grieve for those we have lost. As time goes by these items become

lost and degraded. As these items fade away, so too do the memories we have of them. Clifford Lynch of the Coalition for Networked Information has said, “our kids will expect to review the stories of their lives digitally, and photo books will instead be for special life events like graduations and family trips. Albums will tell just a fraction of the story.”

People will not always be able to attend funerals in person. During times of crisis, it is not always possible to attend the funeral of a loved one in person. The COVID-19 pandemic was an example of this; 674,000 people died due to COVID-19 in the United States alone (Hannah Ritchie). Many people were afraid or not able to attend these funerals because restrictions would not allow them to congregate.

1.3. Solution:

Our solution is a web application that allows loved ones of the deceased to preserve the memory of those that have passed on by digitally preserving the content they have left behind. This platform will be a place they can come to celebrate, reminisce, and remember those they have lost. Provide direct messaging to allow users to connect with those who knew the deceased at different periods of that person’s life. Over time these pages will become a great way to introduce later generations to their family members' legacies.

Other social networks have few, if any, features to handle what happens to content once a user is deceased. Facebook has a memorialized account feature. This feature only allows you to mark a user account as deceased and keep the page alive. Facebook also allows admin rights to be assigned to the account and can be maintained. LifeShare will be a place that can help

users get in tune with their emotions around their loss and offer features designed specifically around the topic. Users will also be able to communicate through the comment section on Vault posts and via direct messaging with other users. Users can also share content via Facebook, Twitter, and other social media platforms.

Each created page will contain the funeral information and offer the ability to send flowers or gifts to the memorial. The site will offer helpful services such as resources for mental health help. There will also be useful features like the ability to gather all of the photos and videos of the deceased to create a slideshow to showcase and celebrate their lives, at their funeral or celebration of life.

1.4. Project Source:

This project idea was developed by Justin over the last seven years. The idea first came to him after his best friend died unexpectedly. They had been friends for more than fifteen years and yet he realized he had very few pictures or videos of him. Most of the photos and videos he did have were lost on old cell phones he had thrown away. The idea to be able to share content with family and friends was born here. This team came together because of the idea of LifeShare. Each of us has dealt with death and acknowledged how important the content our loved ones leave behind is.

2. Project

2.1. Project Objectives/Goals:

Our main objective is to create a digital space where people can come together to grieve and share content and stories about those they have lost, to give them the ability to communicate and connect, and to ensure that we keep the memories of those who have passed alive for generations to come.

- To preserve the memory of those that have passed on by digitally preserving the content they have left behind by allowing users to upload content that we will store and persist in the Cloud.
- To connect those who knew the deceased through comment sections and direct messaging.
- Help those in grief by creating a place online they can come to celebrate, reminisce, and remember those they have lost.
- To have a working web application that is hosted and has active users.
- To complete a minimum viable product.

2.2. Project Scope:

The main feature we will be concentrating on is the Vault feature. Users should be able to create a Vault page and do the following.

- Users should be able to create and sign in to a LifeShare account.
- Be able to use Facebook and Google as Single Sign-On.
- Be able to create and manage Vault pages.
- Be able to search for a person's Vault page.
- Be able to upload images, videos, audio files, and documents to a Vault page.
- Be able to view and update their account settings.
- Receive notifications that there is new content to approve.
- Approve or deny Vault submissions.
- Share content via social media and email.
- File a complaint against a user that violates the LifeShare user policy.

2.3. Quick Project Timeline:

Below is a timeline of the tasks and the duration each task took us to complete.

Task #	Task Name	Duration	Start Date	End Date
1	Project Contract Approvals	2 weeks	Sept 3, 2021	Sept 20, 2021
2	Project Management, Proof of Concept, and Tech Stack	1 week	Sept 20, 2021	Sept 27, 2021
3	User Personas, Use Case Diagrams	2 weeks	Sept 20, 2021	Oct 4, 2021
4	Backend Microservice	7 months	Sept 28, 2021	May 1, 2021
5	Frontend Application	6.5 months	Oct 4, 2021	May 1, 2021
6	Begin Wireframe and Mockup	2 weeks	Oct 5, 2021	Oct 18, 2021
7	Quality Assurance and Iteration Methodology and Change Management	2 weeks	Oct 5, 2021	Oct 18, 2021
8	Database Table Schemas	1 Week	Oct 11, 2021	Oct 17, 2021
9	Setup VueJS SPA and install libraries	1 Week	Oct 11, 2021	Oct 17, 2021
10	Budget, PM Technique	1 week	Oct 19, 2021	Oct 25, 2021
11	Setup Supabase DB	1 Week	Oct 19, 2021	Oct 25, 2021
12	Code API Routes	2 Weeks	Oct 25, 2021	Nov 1, 2021
13	Setup Auth	1 Week	Oct 25, 2021	Nov 1, 2021
14	Presentation Workshop	2 weeks	Oct 18, 2021	Nov 1, 2021

15	Technical Writing and Documentation, Technical Diagram	1 week	Nov 1,2021	Nov 8, 2021
16	Final Presentation	2 weeks	Nov 1, 2021	Nov 15, 2021
17	Stub out Pages and Components	3 Weeks	Nov 1, 2021	Nov 22, 2021
18	Code Components	1 Week	Nov 1, 2021	Nov 8, 2021
19	Unit Testing	1 Week	Nov 8, 2021	Nov 15, 2021
20	Code Vuex Store (API calls, global state management)	2 Weeks	Nov 15, 2021	Nov 22, 2021
21	Mock Store Testing	1 Week	Nov 15, 2021	Nov 22, 2021
22	Following and Unfollow Vault accounts	1 Weeks	Jan 10, 2022	Jan 17, 2022
23	Finish Account Settings	1 Week	Jan 17, 2022	Jan 24, 2022
24	Ability to Create Account and Sign In	3 Weeks	Jan 17, 2022	Feb 7, 2022
25	Ability to Upload Posts	1 Week	Jan 24, 2022	Jan 31, 2022
26	Ability to Approve and Deny Posts	2 Weeks	Jan 24, 2022	Feb 7, 2022
27	Ability to Search Vaults	1 Week	Jan 24, 2022	Jan 31, 2022

28	Ability to Create Vault Account	2 Weeks	Feb7 , 2022	Feb 21, 2022
29	Ability to Add Vault Admin View	2 Week s	Feb 21, 2022	Mar 7, 2022
30	Ability to Approve or Deny Posts	2 Weeks	Feb 21, 2022	Mar 7, 2022
31	Ability to Share Content	1 Week	Mar 7, 2022	Mar 14, 2022
32	Ability to File a Complaint	2 Weeks	Mar 14, 2022	Mar 28, 2022
33	Final QA and Manual Testing	4 Weeks	Mar 7, 2021	Apr 8, 2021

Table 1: Project Timeline

2.4. Technologies Used:

After considering our development experience and research, we decided to choose a tech stack purely composed of technologies that use the JavaScript programming language. One of the main benefits is that our developers were able to work on both the back and front-end codebase. This improved the understanding of the application architecture and sped up development time.

2.4.1. Front-End Stack:

VueJS - Vue is a front-end framework used to organize the front-end codebase as components. We chose this over other options because we believe the global state management system is superior to that of React and Angular and our front-end developer has experience with it.

Vuex - This is industry standard when developing Vue.JS projects and is used for Global State Management.

SASS - is a CSS Preprocessor. We chose to use a CSS Preprocessor because it gives us the ability to use variables, mixins, and structure our styles in a hierarchical structure.

Font Awesome is our chosen font library. We chose this because it is commonly used, has professional support and the fonts are professional and used around the industry.

Axios - This will be used for making HTTP requests. Its async/await and promise capability make it a reliable choice.

2.4.2. Front-End Testing:

Jest - Jest is a unit testing framework commonly used in the industry. Again, it is reliable and has support.

Cypress - We chose this because testing on Cypress is fast and easy to learn.

2.4.3. Back-End Stack:

NodeJS - Used to develop our backend REST API. We wanted to use JavaScript for our backend and NodeJS is the original solution created for running JavaScript outside of the browser.

Express - Used to develop our backend server. Commonly used with NodeJS.

Knex - Is an Object Relationship Mapper (ORM) which makes sending queries fast and less verbose.

2.4.4. Back-End Testing:

Mocha - Testing Framework most commonly used for unit testing.

Chai - is needed to perform Behavior Driven Design (BDD) tests using testing verbs.

2.4.5. Database:

Supabase – Open-Source Firebase Alternative which will helped us jumpstart our database tables and schemas.

2.4.6. Authentication:

Supabase - Has authentication features baked in and will save time that can be allocated to other features.

Custom Implementation JWT (JSON Web Token) for refresh and access tokens.

2.4.7. Content Delivery Network (CDN):

Cloudinary to serve images and videos and handle image and video optimization. Provides features needed and has reasonable pricing.

2.4.8. Continuous Integration/ Continuous Delivery (CI/CD)

CircleCI - Continuous integration framework. Has a free version and a fast setup.

2.4.9. Hosting

Netlify and AWS - Application Hosting. Netlify allowed us to host our frontend easily allowing us more time to develop code. We used AWS serverless lambda function to host the backend and will handle server settings, data backups, and more.

2.5. Technical Diagrams:

These are all of the technologies that LifeShare is using and these diagrams show the flow of data from one flow to the next. Below are the application diagram, the app flow diagram, and the database diagram of LifeShare.

2.5.1. Application Diagram:

The below application diagram shows how LifeShare was structured from the web application side to how it was hosted in Azure.

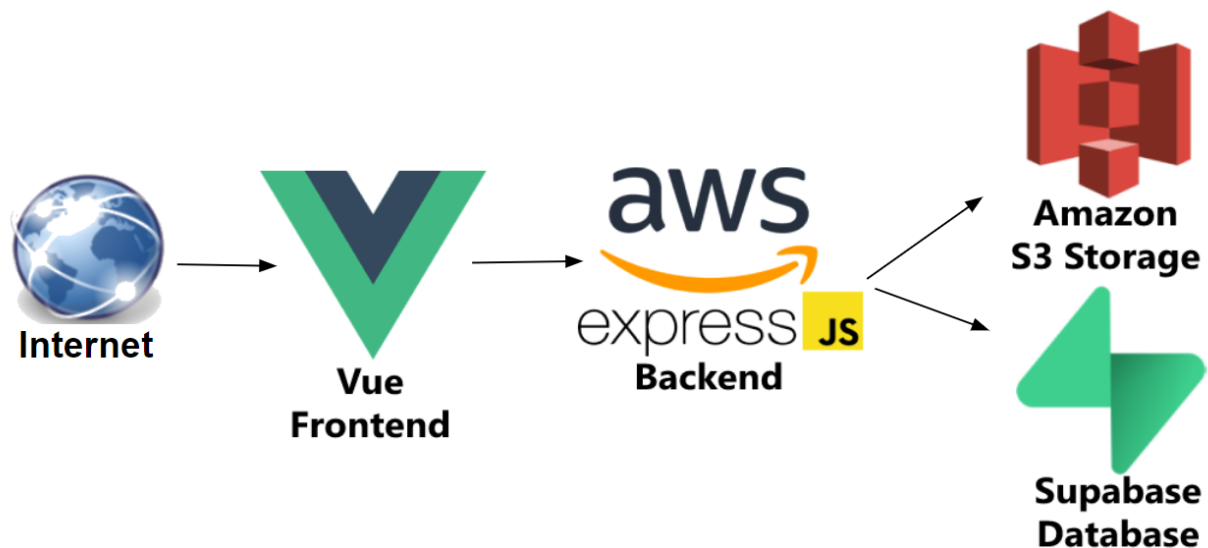


Figure 1: Application Diagram

2.5.2. App Flow Diagram:

The app flow diagram is a diagram used to show how the web applications' actions will flow and work together to make the app function.

2.6. User Personas:

Listed below are the user personas for our application. We considered different users that will interact with our web applications.

User Persona: 1	
	Title The Grieving Friend
	Name Jim John
	Age 28
	Gender Male
Behavior	Jim's best friend just passed away unexpectedly in a car accident. They went to school together in 5 th grade. Jim has never lost someone this close to him before and is having a difficult time coping with the loss.
Pain	Jim is a millennial and most of his social interaction is online. Jim and his friends don't have many if any physical photos, they save everything on electronic devices.
Needs & Goals	Jim wants to make sure he keeps his friend's memory alive. He has many photos and videos that he would like to share with his friends, and family. He wants to ensure these images and videos are preserved.

Table 2: User Persona 1

User Persona: 2	
	Title A mother who lost her world
	Name Jill Jenson
	Age 48
	Gender Female
Behavior	Jill's only son just passed away from a drug overdose. Her son was her life and she is taking this extremely hard. All her son's friends and Jill's family have been very supportive and have been trying to console her.

Pain	Jill is a middle-aged mother. She is married.
Needs & Goals	Jill wants to learn more about her sons' life experiences and the friends he had. She wants to be able to see the content his friends have to share and speak with them about her son.

Table 3: User Persona 2

User Persona: 3	
	Title A mourning mother
	Name Carly Cross
	Age 39
	Gender Female
Behavior	Carly just lost her son, Daniel, in a car accident. She works full-time at an insurance company. She uses her computer regularly but isn't particularly interested in technology.
Pain	Carly is planning the funeral for her son. Carly is mourning the post of her son
Needs & Goals	Carly wants a way to remember her son. She has some pictures and videos but wants all of them in one location. Carly wants to bring the family together and remember her son. She knows other family members have information on Daniel and wants them to bring them all together.

Table 4: User Persona 3

User Persona: 4	
	Title A friend who just lost a friend
	Name Steve Luna
	Age 21
	Gender

	Male
Behavior	Steve Luna lost his friend, Mark, due to an overdose. He's known Mark since middle school and they attended the same college. Steve is a college student and works part-time at Kroger. He is pretty savvy with technology and uses a computer daily, and he knows Mark's family very well.
Pain	Steve is still mourning the death of Mark. Steve knows Mark's family very well and often communicates with them. Steve has tons of videos and photos of Mark on his phone.
Needs & Goals	Steve wants a way to share some of the memories he has with Mark with their friends and family. Steve wants to connect with Mark's family and help them with the grieving process by being there and supporting them.

Table 5: User Persona 4

User Persona: 5	
	Title A mother who lost her mother
	Name Samatha Cole
	Age 31
	Gender Female
Behavior	Her mother has recently passed away within the last year. She has 3 kids under the age of 6. She and her mother regularly used Social Media.
Pain	Her mother came around during weekends to spend time with the kids. She and her mom have many friends that use social media. She doesn't know how to gain access to her mother's social media accounts.

Needs & Goals	She wants her kids to know who their grandmother is. She wants to inform the community about the passing. She wants to remember great memories of her mother.
---------------	---

Table 6: User Persona 5

User Persona: 6	
	Title Small Town Friend
	Name Jim Joe
	Age 25
	Gender Male
Behavior	His best friend just passed away recently. He has a small number of friends and doesn't use social media. James knows almost everyone in the town. He wants a place to keep the memories they shared.
Pain	They live in a small town and know everyone there. He does not know what he should do to plan the funeral.
Needs & Goals	He wants to have his friend remembered by others. He also wants to inform people who may have known him about the passing. He wants to use LifeShare as a place to store content related to his friend.

Table 7: User Persona 6

2.7. Use Cases:

These are our use cases for our application. The use cases were done to show the different steps that a user would take to use the features. We did use cases on features that would be the most used by the users.

Use Case ID	LS_01
Use Case Name	Uploading content to a Vault page
End Objective	Content is uploaded to a Vault page
User/Actor	Jim John (User Persona 1)
Trigger	The user will select a button to send their content to the admin of the Vault page
Frequency of Use	90% of users will upload content to a Vault page.
Preconditions	The user is on the specific Vault page
Basic Flow	1. User goes to the Vault page 2. User clicks on 'submit content' file upload button 3. System prompts users to select their desired content to upload 4. User clicks on 'submit' button 5. A message box displays saying "an admin will review this content and accept or reject" 6. System redirects the user back to the Vault page
Alternate Flow	N/A
Postconditions	The admin is sent a notification that the user is trying to upload content to the Vault page specified. If accepted, the content will be

	displayed on the Vault page. If rejected, the content will not be uploaded.
--	---

Table 8: Use Case 1

Use Case ID	LS_02
Use Case Name	Approve or deny a post
End Objective	Vault post is either approved or denied
User/Actor	Admin Carly Cross (User Persona 3), user - Jim John (User Persona 1)
Trigger	A user uploads content to the Vault page
Frequency of Use	Whenever a new item is uploaded, the admin will receive a request to approve
Preconditions	Request from user to upload a post
Basic Flow	1. Admin views post 2. Admin approves the content 3. Content is then displayed on the Vault account
Alternate Flow	1. Admin denies content 2. Notification is sent to the user that the file will not be uploaded
Postconditions	Approved content is displayed on the Vault page

Table 8: Use Case 2

Use Case ID	LS_03
Use Case Name	Post a comment to a Vault page
End Objective	A comment is posted
User/Actor	Jim John (User Persona 1)
Trigger	The user selects a Vault post and clicks the comment button, types a comment then clicks the post button.

Frequency of Use	There are going to be about 2-3 comments per post, and each user will comment on average 5 times through a month
Preconditions	The user post has comments enabled.
Basic Flow	1. The user clicks on the Vault page. (see EX1) 2. The user clicks on the desired Vault post. (see AC2) 3. The system redirects the user to log on. 4. The user logs on. 5. The user clicks on the comment button. (see AC1, AC3) 6. The user types a comment. 7. The user clicks the submit button on the comment.
Alternate Flow	A. Return to Main Course step 5 AC2 User logs off before submitting the comment B. Return to Main Course step 2 AC3 User does not have an account already B1. The user creates an account. B2. The system confirms account creation Return the user to Main Course step 5
Postconditions	The user's comment can be seen on the Vault post.

Table 9: Use Case 3

2.8. Use Case Diagram:

This is our use case diagram for our application. It shows how different users will interact with our application as well as the different services and authentication that goes on.

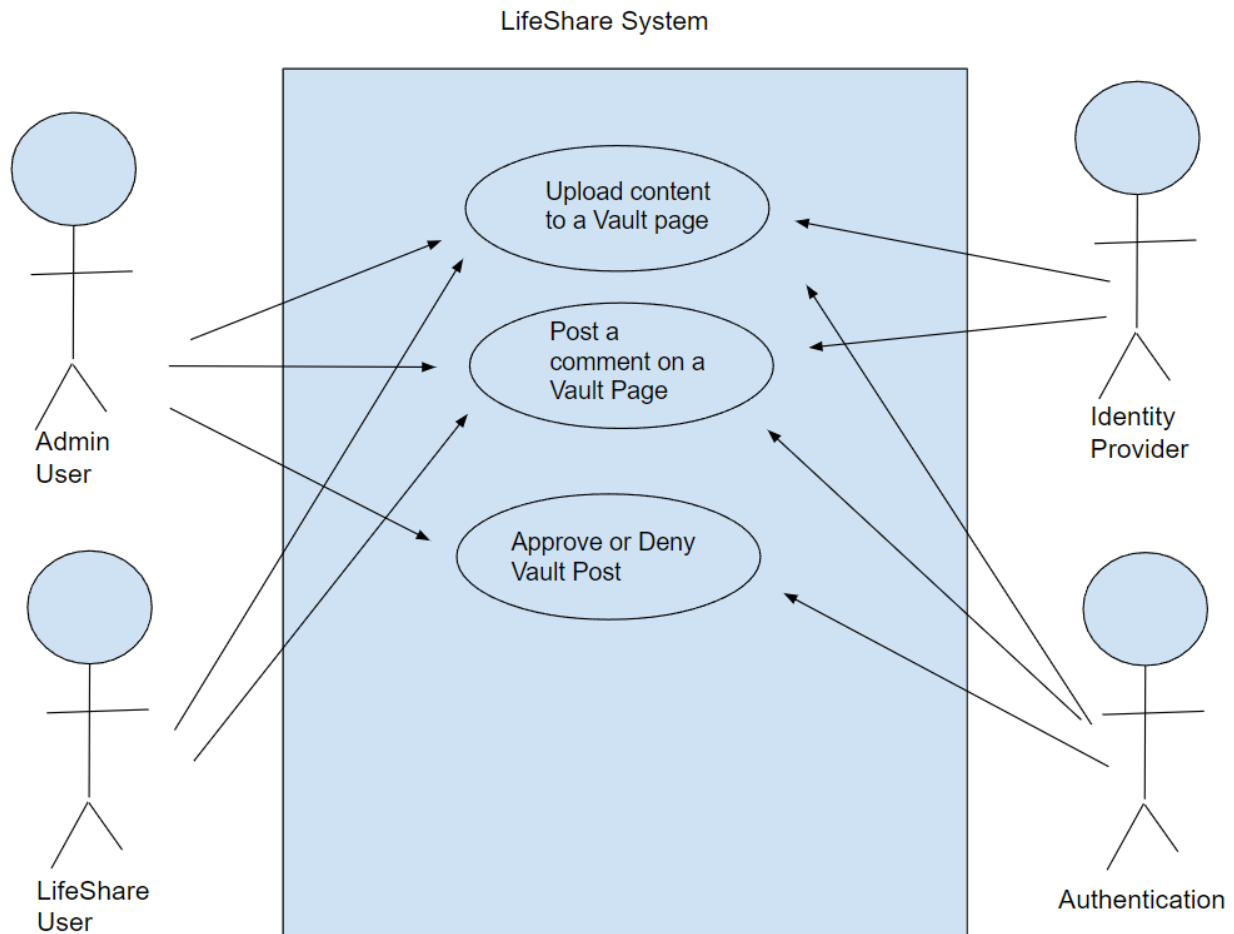


Figure 4: Use Case Diagram

2.9. Testing Plan:

The section below details the testing methodology that LifeShare followed along with and the scope of what we tested in our application.

2.9.1. Methodology:

The project follows the agile testing methodology where we create unit tests after we complete components to ensure the component would give us the desired outcome. We chose this methodology because it was identical to the work environment that Justin and Khron came from so it was what was most familiar. Doing our tests with this methodology allowed our code to be more flexible by letting our developers make the tests after the code was completed.

2.9.2. Back-end Scope:

- The database must be able to insert new Vault pages with all the correct data.
- The database should update and return the modified Vault page.
- The database should delete Vault pages and show that it is deleted from the database.
- The database should insert new comments and return that the comment was made.
- The database should delete the comment and show that it is been deleted.
- The database should insert a new post and return it with proper data.
- The database should update posts and return the post with modified data.
- The database should delete a post and show that it has been deleted.
- The database should insert a new user and return it with proper data.
- The database should update the user profile and return it with modified data.
- The database should delete a user and show that it has been deleted.

2.9.3. Front-end Scope:

- The user must be able to click on and navigate to their profile page
- The user must be able to view comments on a post.
- The user must be able to log in.
- The user must be able to delete a comment.
- The user must be able to like a post.
- The user must be able to create a Vault page.
- The user must be able to sort the page by file type.
- The user must be able to view who they follow.
- The user must be able to view the Vault pages they manage.

2.9.4. Objectives:

Our objective with testing all of this was to make sure LifeShare functioned correctly with no errors or bugs in our code. If any of the tests were to fail the developers would be able to correct the code and remedy the problem. With this testing in place, we were able to see different perspectives of how different features should be designed and it ultimately improved our application.

2.9.5. Test Logs and Procedures:

The table below shows the results of the user tests we complete to have outside users test the functionality of LifeShare.

Item #	Test Case #	User	Role	Expected Output	Actual Output	Pass/Fail	Reason for Failure/Success	Date
#1	#1	Kenwanna	Admin	Kenwanna was able to make an account, log in, and create a Vault account.	Kenwanna successfully created an account, successfully logged in, and successfully created a Vault account.	Pass	Kenwanna was able to create an account, log in, and create a Vault account.	02/28/2022
#2	#1	Kenwanna	User/Admin	Kenwanna should be able to upload a picture of her son to his Vault account and Kenwanna should be able to approve a post from a relative.	Kenwanna was able to upload a picture of her son but was not able to approve a post from a relative.	Fail	This test failed because the approve/deny functionality was not completed.	02/28/2022
#3	#1	Kenwanna	User	Kenwanna should be able to change her profile picture and filter through the media on a Vault page to look at only videos.	Kenwanna was able to change her profile picture and filter through the media on the Vault page, only displaying videos.	Pass	This test passed because Kenwanna was able to change her profile picture and filter out the	02/28/2022

							media on the Vault page.	
#4	#1	Chris	User	Chris should be able to comment on a Vault post.	Chris was not able to comment on a Vault post.	Pass	Chris was able to comment on a Vault post.	02/28/2022
#5	#1	Chris	User	Chris should be able to change the settings of her account.	Chris was not able to save the changes on the account settings.	Fail	The functionality to save settings has not been completed.	2/28/2022
#6	#1	Chris	User	Chris should be able to share the Vault post to Twitter.	Chris was not able to share the Vault post to Twitter.	Fail	The functionality to share a Vault post is not yet completed.	02/28/2022
#7	#2	Gabie	User	Gabie was able to make an account, log in, and create a Vault account.	Gabie successfully created an account, successfully logged in, and successfully created a Vault account.	Pass	Gabie was able to create an account, log in, and create a Vault account.	3/4/2022

#8	#2	Gabie	User/Admin	Gabie should be able to upload a picture of her son to his Vault account and Gabie should be able to approve a post from a relative.	Gabie was able to upload a picture of her son but was not able to approve a post from a relative.	Pass	This test failed because the approve/deny functionality was not completed.	03/4/2022
#9	#2	Gabie	User	Gabie should be able to change her profile picture and filter through the media on a Vault page to look at only videos.	Gabie was able to change her profile picture and filter through the media on the Vault page, only displaying videos.	Pass	This test passed because Gabie was able to change her profile picture and filter out the media on the Vault page.	03/4/2022
#10	#3	Ruby	User	Ruby was able to make an account, log in, and create a Vault account.	Ruby successfully created an account, successfully logged in, and successfully created a Vault account.	Pass	Ruby was able to create an account, log in, and create a Vault account.	03/04/2022

#11	#3	Ruby	User	Ruby should be able to comment on a Vault post.	Ruby was able to comment on a Vault post.	Pass	Ruby was able to comment on a Vault post.	03/04/2022
#12	#3	Ruby	User	Ruby should be able to change her profile picture and filter through the media on a Vault page to look at only videos.	Ruby was able to change her profile picture and filter through the media on the Vault page, only displaying videos.	Pass	This test passed because Ruby was able to change her profile picture and filter out the media on the Vault page.	03/04/2022
#13	#4	Vaelyn	User	Vaelyn was able to make an account, log in, and create a Vault account.	Vaelyn successfully created an account, successfully logged in, and successfully created a Vault account.	Pass	Vaelyn was able to create an account, log in, and create a Vault account.	03/04/2022
#14	#4	Vaelyn	User	Vaelyn should be able to comment on a Vault post.	Vaelyn was able to comment on a Vault post.	Pass	Vaelyn was able to comment on a Vault post.	03/04/2022

#15	#4	Vaelyn	User	Vaelyn should be able to change her profile picture and filter through the media on a Vault page to look at only videos.	Vaelyn was able to change her profile picture and filter through the media on the Vault page, only displaying videos.	Pass	This test passed because Vaelyn was able to change her profile picture and filter out the media on the Vault page.	03/04/2022
-----	----	--------	------	--	---	------	--	------------

Table 10: Test Logs

2.9.6. Testing Review:

We learned that testing is very important to make sure our web application is bug-free. What was different from this experience to previous work experience was that we had to build every function from the ground up. Testing allows us to accurately second check our code to ensure that it works and also allows us to see exact problems that may occur within the code. When we test with potential users it allows us to see what we may have messed up or could change from an outside perspective.

2.10. Change Management Plan:

The change management plan below details how a request to change something in our project would go through our team, whether it's from our advisor or someone in our group. The change management plan shows the actions the group would take to respond to the request.

2.10.1. Members of the group:

- A team member wants something to change in the application.
- If it is urgent then the meeting will be held on the same day if it is not then the group will meet during the retrospective or weekly standup meeting.
- The pros and cons of the change will be discussed during the meeting.
- After the discussion, a vote will take place on whether to adopt the change or not. If a majority of members want the change then the change will be adopted.
- If the change is adopted then user stories will be created and progress on the change will begin.

2.10.2. Advisor:

- An advisor comes to our team with a change they would like to see implemented.
- The team will hold a meeting to discuss the request during the next stand-up meeting.
- The pros and cons of the change will be discussed during the meeting.
- After the discussion, a vote will take place on whether to adopt the change or not. If a majority of members want the change then the change will be adopted.
- After the vote takes place the advisor will be notified whether the change will be adopted or not.
- If the change is adopted then user stories will be created and progress on the change will begin.

2.11. Budget:

The chart below is the estimated budget of our project. The chart includes the cost for the work our members have done, the domain name, and the fees it would cost to host our web application. Each member would make 40 dollars per hour, we chose this number because it's the amount we feel we would make in a full-time role on this project. The \$2,500 is the estimated price for the current domain name that we would purchase. The \$1200 is the cost for hosting the application on Azure. This price is estimated because we have yet to purchase a hosting package from Azure.

				Ongoing Annual		
	Rate Per/Hr	Work Effort (Hours)	1 X Costs	Rate Per/Hr	Work Effort (Hours)	1 X Support Cost
Labor - IT	40	576	\$ 2500	40	80	\$ 1200
Labor - External			\$ - 0		0	\$ -
Software - External			\$			
Hardware - External						
Misc.						
TOTAL			\$ 2500			\$ 26,740

Table 11: Budget Table

2.12 Problems Encountered and Analysis of Problems Solved:

The sections below show the problems we encountered as a group, and the ways we're able to solve the issues.

2.12.1 Continuous Integration with CircleCI:

Originally, when we started the project we had one repository that hosted the front-end and back-end of our project. We wanted to incorporate CircleCI for continuous integration and testing. However, we had trouble with our YAML file trying to locate the subdirectories within our repository, we tried to change the file for many hours before we eventually abandoned trying to make the project with one repository. We came up with the solution to just separate the front-end and the back-end of the project, so we split the repositories into two, one for back-end and front-end, and put a separate YAML file into each one. With this solution, we were able to get our testing done even with the trouble CircleCI caused.

3. Conclusion

As a team, we learned and developed in many ways that will help us in our future careers. During this project, we were able to work effectively as a team, every week we had several meetings throughout the week, delegating work appropriately, pair-programming to gain experience and help each other out with the technical side, bringing up problems as they arose and working together to find a solution, and doing retrospectives to look back at the week to see if there are things that need to be improved. As the semester went on, our teamwork skills have improved, we became more comfortable with our routines as the weeks progressed and communication has been astonishing, allowing us to set a strong foundation for our project and build momentum for the spring semester. In the spring semester, we completed the ability to create and manage Vault pages, messaging between users, a site homepage, and a login page. Once we completed these tasks and presented our project to the judges at IT Expo we felt confident about our application and our chances of winning our category.

4. References

- [1] Ritchie, H., Mathieu, E., Rod  s-Guirao, L., Appel, C., Giattino, C., Ortiz-Ospina, E., Hasell, J., Macdonald, B., Beltekian, D., & Roser, M. (2020)
- "Coronavirus Pandemic (COVID-19)". Published online at OurWorldInData.org.
Retrieved from: '<https://ourworldindata.org/coronavirus>'
- [2] Glenn, H. (2013, July 30) In The Digital Age, The Family Photo Album Fades Away.
<https://www.npr.org/sections/alltechconsidered/2013/07/25/205425676/preserving-family-photos-in-digital-age>
- [3] MedIndia Content Team, World Death Clock
<https://www.medindia.net/patients/calculators/world-death-clock.asp>
- [4] The World Counts. (2021). Retrieved from
<https://www.theworldcounts.com/populations/world/deaths>