

1. Project Scope

1.1. Project Title

MyWed App, a productivity and social media app for planning the ultimate wedding reception.

1.2. Capstone Category and Related courses

Web Development

1.2.1. Design Courses:

- 1.2.1.1. Information Systems Design (ISMT S-170)
- 1.2.1.2. Visual Communication Design (DGMD E-50)
- 1.2.1.3. Wearable Technology and the Internet of Things (ISMT S-78)
- 1.2.1.4. Modern and Mobile Front-End Design II (DGMD E-27)

1.2.2. Development Courses:

- 1.2.2.1. Website Development (CSCI E-12)
- 1.2.2.2. Intensive Introduction to Computer Science (CSCI E-50)
- 1.2.2.3. Web Programming/Javascript (CSCI E-3)

1.2.3. Delivery Management Courses:

- 1.2.3.1. Agile Project Management (ISMT E-101)

1.3. Project Goal

1.3.1. The Problem

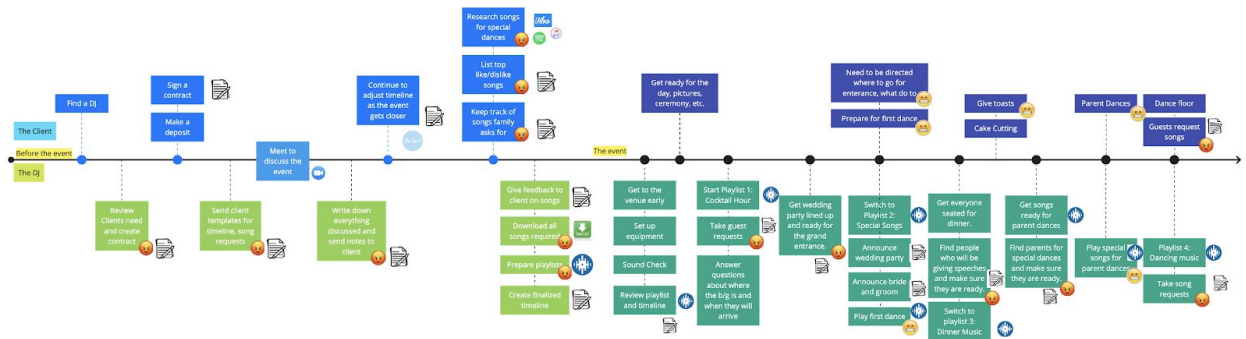
The current experience and process for working with a DJ to plan a wedding has a lot of manual steps. Several different tools are used and it can not only be very time consuming, but also very stressful for both the DJ and the couple getting married (the couple will be referred to as 'hosts' throughout this proposal).

Then during the event, guests have to constantly go up to the DJ booth and ask for songs they want to hear to be played, sometimes these songs are on the do not play list from the hosts, or the DJ may not have the song, or he might not have heard what they said. "Can you play my song next? ... can you play some rock and roll? ... Play the cupid shuffle?" the requests are endless, and can end up causing a DJ to misread the crowd or upset a crowd by playing what one

person wants to hear. (Bunn DJ Company, 2019)

1.3.2. The Current Solution

Most DJ's follow the manual process as outlined in the workflow diagram below, which can also be viewed [here](#). They end up sharing several documents and spreadsheets with their clients and spend a good amount of time reviewing the information and making sure it is accurate before then putting it into a finalized document for the day of the event. They then have to make sure they have all the music requests and create playlists for different parts of the event, ensuring they have the correct special event songs. Hosts have been starting to ask for guests requests prior to the wedding and sharing the song list with their DJ, because some DJ's have stopped taking requests due to the absurd nature of the requests. A great video describing this process from a DJ's perspective is "[Stuff People Say to DJ's Part 1](#)" and "[Stuff People Say to DJ's Part 2](#)" by the Bunn DJ Company.



Some DJ's have started using a platform called [Vibo](#); which will be the main competitor with MyWed App. Vibo's product seems to only focus on the organization and music request portion of the problem at hand, not the end to end experience for all users involved.

1.3.3. The Goal

Create a simple and intuitive real time wedding productivity and social media mobile app using React Native, allowing for support across various devices, that can be utilized from the early stages of the wedding planning process and throughout the day of the event.

MyWed App's objectives include allowing DJ's and hosts to be able to create, adjust, review and share the wedding timeline, as well as, curate, share and select music to be played throughout the event. Guests will be able to request songs and favorite the songs they want to hear played throughout the event.

The songs that start trending, or get favorited the most, are more likely to be played by the DJ because the DJ will know that multiple guests would like the song to be played.

Some future goals, which are outside of the scope of this capstone, include integrating a way for hosts to select a DJ, sign documents and make payments through the app. Guests can upload photos and video from the event to a live gallery, which could be integrated with solutions like [Photobooth Supply Co.](#) DJ's have a seamless integration with Serato, VirtualDJ, Denon, iTunes, etc. to allow for auto creation of playlists based on the event timeline.

1.4. Learning Goals

1.4.1. Javascript framework for mobile apps

1.4.1.1. Learning Goal

Although I have taken several web development courses, I have not learnt about using a javascript framework that will work for creating a mobile application. Over the past few months, I have researched, analyzed and selected a javascript framework that I will be learning in order to complete my capstone. The frameworks I looked into include [ReactNative](#), [Native Script](#), [Angular](#), [Flutter](#) and a few others. I have decided on using ReactNative.

1.4.1.2. Why use a javascript framework?

1.4.1.2.1. Progressive Web App:

A progressive web app is a combination of web pages and native apps that can leverage push notifications, device hardware, improved touch gestures and other features that are similar to native apps. These apps are easy to maintain, less expensive and don't need to go through the app store. The downsides to progressive web apps is that they run in a browser, can be slower, not as intuitive, are hard to find and lack compatibility across all devices. (Dossey, 2019)

1.4.1.2.2. Native App Development:

A native app is best for apps that will be used heavily, need to be lightning fast, deliver the best performance and need all the access to the operating systems functionality. Native apps can be built using Object C or Swift for iOS and Java or Kotlin for Android. These apps have the most discoverability in the Google Play Store or Apple App

Store. The downside to native app development is that you have to build two different apps for different operating systems, which can be time consuming and costly, as well as, a lot of maintenance. (Dossey, 2019)

Alternatively native apps can be built using a framework that will make the app cross platform compatible. There are a variety of frameworks available to build a native app including Xamarin, ReactNative, Native Script, Flutter. Each one has a different approach but the end goal is the same, to make a native app compatible across multiple platforms.

1.4.1.2.3. Hybrid Mobile App:

A hybrid mobile app works across multiple different platforms, and similarly to progressive web apps, are a combination of native and web apps. The main difference from a progressive web app is that it can be installed on a device like a native app, instead of using a browser window. It is basically a mobile version of a website that runs within a mobile app. The downsides of hybrid apps are that they are much slower, need to have more customization, and they don't have as much access to the operating systems functionality. (Dossey, 2019)

1.4.1.2.4. Which is best for MyWed App?

Based on the long term goals of MyWed App, it would be best to build out a native app because having the benefit of access to the operating system's functionality, as well as, the speed of the app are very important. Furthermore, using a javascript framework makes the most sense because of my previous knowledge of javascript and the cross platform compatibility so that I don't have to learn two new languages.

1.4.1.2.5. Why ReactNative?

ReactNative is an open source framework that was created and is maintained by Facebook written based on the React Javascript library. ReactNative is also similar to React UI, therefore if there is a need for a browser or desktop app the code can easily be reused with minimal changes in React.

1.4.2. Music Library API

I've started research on utilizing [Deezer](#) as a [music library API](#), which would allow users to search for 56 million songs. I am also looking into [Spotify's API](#) to see if there is a way to curate playlists, which would allow the users to search through a playlist if they are unsure of what song they want.

1.5. Elevator Pitch

When planning a wedding, the process can be very time consuming... there are a lot of components that go into the process, such as picking the perfect songs, perfecting the timeline, listening to all the requests your guests have, and a whole lot more. With MyWed App, you will be able to do all of that from your mobile device. Making wedding planning simple and intuitive, MyWed App, is a next generation real time wedding productivity and social media app used by DJ's, brides, grooms, as well as guests to curate, share, and select music throughout the wedding timeline.

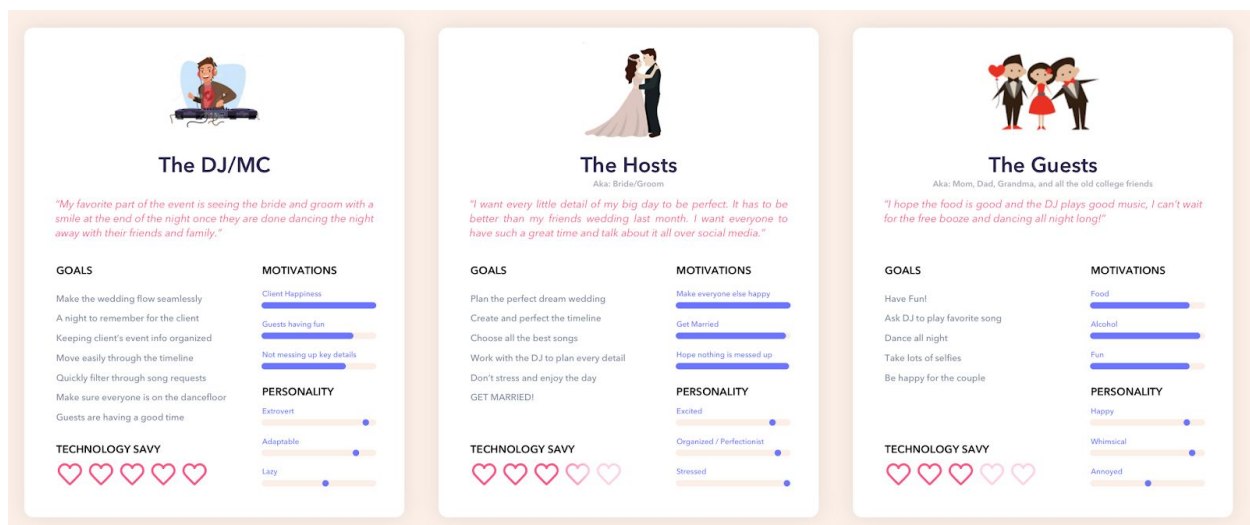
1.6. Target Audience

1.6.1. User Demographic

The target audience for MyWed App is very specific and can be broken into three categories: DJ's who specialize in Wedding Entertainment, engaged couples planning a wedding, and wedding guests.

1.6.1.1. Persona's

InVision: <https://cortneystauffer802923.invisionapp.com/public/share/3UWU6C5Y9>



1.6.1.2. Empathy Maps

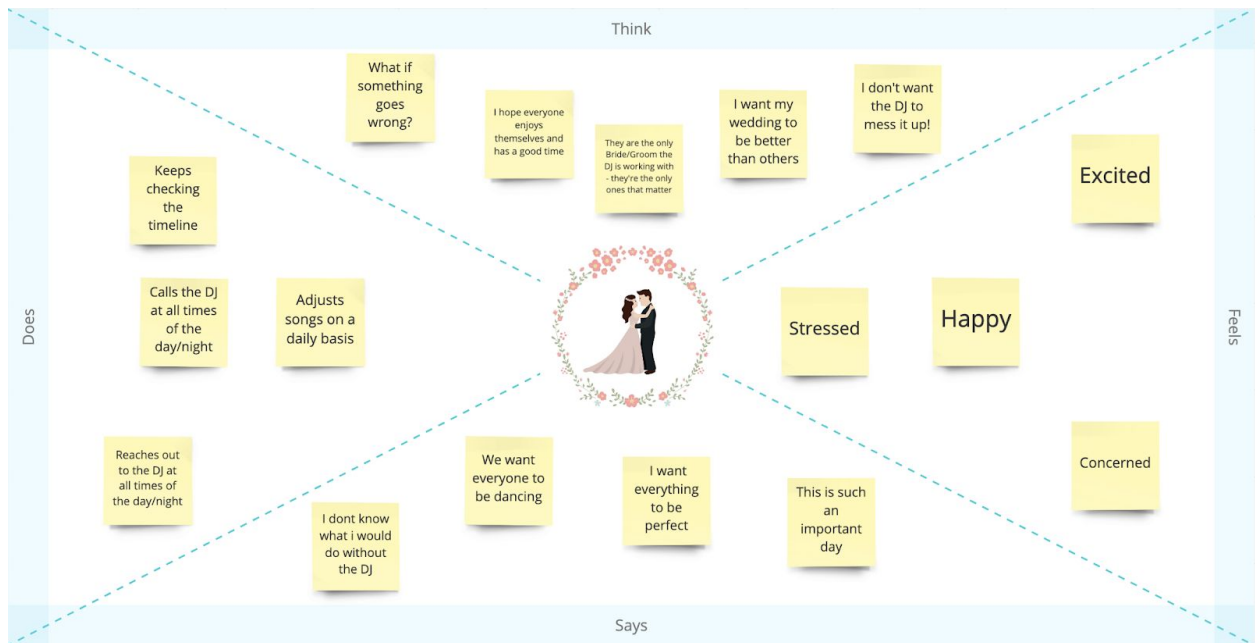
Empathy Maps for each user persona

Miro: https://miro.com/app/board/o9J_kw6I84s/

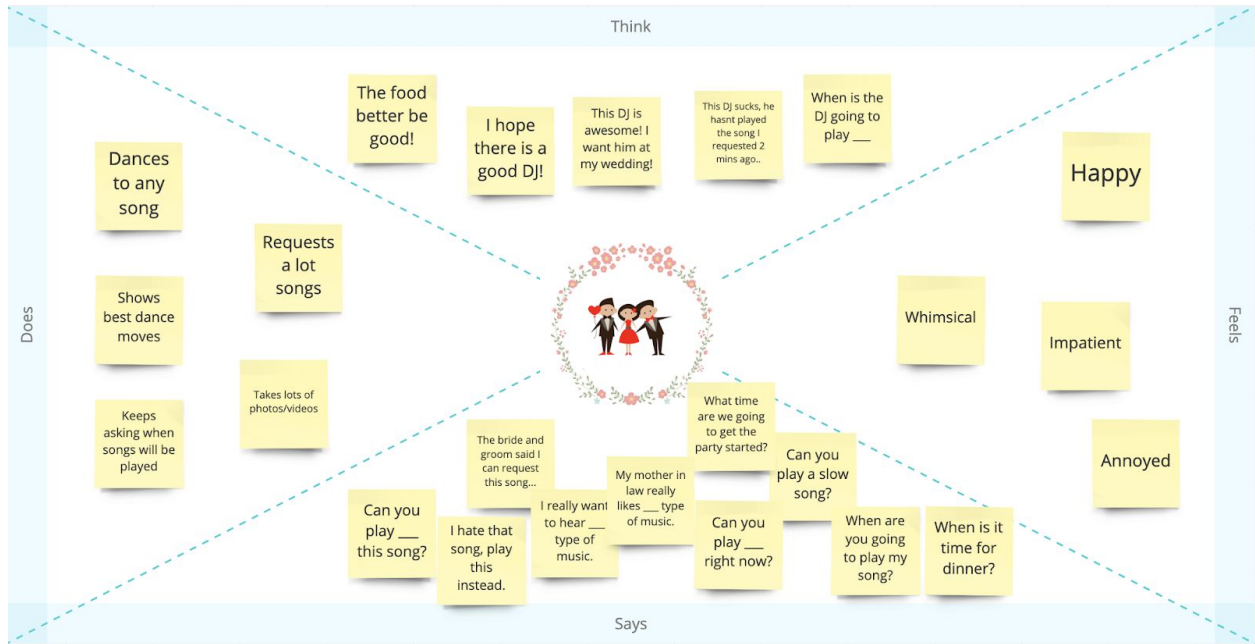
DJ



Host



Guests



1.6.1.3. Beta Feature, Persona Matrix

A list of all the beta features and the persona's who will have access to each feature.

Feature	DJ	Host	Guest
Timeline	Edit, View	Edit, View	View
Special Songs	Edit, View	Edit, View	
Song Requests	Add, View, Remove	Add, View, Remove	Add, View
Influence/Favorite Requests	View	View	Favorite, View
Event Notifications	Send, View	View	View

1.6.2. How will people be aware of MyWed?

From a marketing perspective, the product will be marketed towards both DJ's and hosts. Either can sign up and create an account to start using the app. Ideally wedding DJ's will be the users who will subscribe to the app and offer MyWed App as part of their services for their clients. Therefore, if a host creates an account and uses MyWed App, they will have limited amount of functionality unless they ask their DJ to join the app as well. Guests will become aware of the app if both the DJ and Host are using the app, so that the

songs they request will get played.

1.6.3. Usability Study

During the next few months, I will be conducting a usability study with about 5-10 participants. This research study focuses on two major research pieces of building a new to market app: Market Research and App Usability.

This will be a qualitative study, focused on working with a small group of newly weds, engaged couples, and wedding guests to learn about their opinions, values and thoughts in relation to the product being built. This method will help ensure that the product is headed in the right direction, identifying problems earlier on in the development lifecycle.

1.6.4. Long Term Strategy (*After the capstone*)

Since this product is new to market, there will be thought put into a marketing strategy and a way to roll the product out to a small subset of 5-10 DJ's that are willing to beta test the product.

To reach a wider audience initially, MyWed App will be available to use on mobile devices. Once beta testing is complete, bugs are fixed and features are enhanced, the app will be available for wedding DJ's to subscribe.

Initially, MyWed App will only be focused on weddings so that the experience can be specialized and built out with all the details of a wedding. This could then expand to a product line not only for weddings but sweet sixteens, birthday parties, communions, etc. to then reach a larger demographic.

1.7. Metrics, Rubric Table and User Survey

1.7.1. Metrics

The ultimate measure of success will be to have 2 DJ's and 5 hosts that will beta test the app. They will be able to perform tasks such as creating a new event, generate the event timeline, search for songs, add songs to their timeline, request and favorite songs.

1.7.1.1. Success Timeline

- An alpha version of MyWed App by the end of March 2020.
- A beta version of the app by the end of April 2020.
- By the end of the semester, a DJ should be able to login, view and edit an event.

- By the end of the semester, a host should be able to login, view and edit an event.
- By the end of the semester, guests should be able to view information about the event, search and request songs.

1.7.2. Rubric

A rubric to measure the success of the capstone project broken down into three categories: User Experience, Visual Design and Development.

User Experience	1 (MVP)	2 (Meets)	3 (Exceeds)
Login experience	The user has no idea what to do when they login to the app.	The user has a clear understanding of what to do when they login.	The user has a clear understanding of what they are trying to do and what will happen next.
Completing tasks	The user gets frustrated easily when trying to complete a task.	The user can complete most of their tasks without any frustration.	The user enjoys completing all their tasks without any issues.
User engagement	User gets bored quickly or doesn't understand the point of the app.	User enjoys using the app and continues to use the app.	User enjoys the app and recommends it to others to use because it helps make their lives easier.
Visual Design	1 (MVP)	2 (Meets)	3 (Exceeds)
Look and Feel	The app is not aesthetically pleasing and difficult to look at, the user doesn't want to use the app.	The overall look and feel of the app is clean and well balanced. It makes the user enjoy looking at the app.	The look and feel is very pleasing, easy to use and makes the user want to use the app again.
Information/data hierarchy	Everything looks the same font size, weight color, so the user has a difficult time using the app.	There is a clear hierarchy between information and data elements, the user can navigate around.	The hierarchy between the information and the data is very clean, clear and concise and makes the user understand what they need to do, which makes the application easy to use.
<u>Color Contrast Standards</u>	Doesn't pass color contrast standards.	Passes WCAG 2.1 AA Color Contrast Standards	Passes WCAG 2.1 AAA Color Contrast Standards.
<u>Atomic Design</u>	There is no common design conventions. Every page looks different.	Common design components are used. There is a sense of consistency.	All the pages look and feel consistent using the same design conventions.
Brand Identity	There is no unique brand identity.	The branding is cohesive throughout the app.	The branding is cohesive, memorable and recognizable.
Development	1 (MVP)	2 (Meets)	3 (Exceeds)
Code Compiles	Does not compile or has a lot of errors.	Compiles with few errors.	Compiles with no errors.

Code Structure	The code is very messy, can't find or understand the code.	The code is easy to scan through and understand how it was built.	The code has notes and explanations on how it was built, making it very easy to understand.
File Structure	Very messy structure.	Organized and what would be expected.	Organized with readme's and notes to understand how to review the code.
Open source Frameworks/ Libraries	No open source frameworks were used.	Open source frameworks were used out of the box.	Open source frameworks were used as a starting point and were further expanded upon.
Works on iPhone	Has a lot of issues or doesn't work on this device.	Works properly overall with a few issues.	Works seamlessly, loads quickly and has no issues.
Works on Android	Has a lot of issues or doesn't work on this device.	Works properly overall with a few issues.	Works seamlessly, loads quickly and has no issues.

1.7.3. User Survey

The following questions could be asked in a user survey once the capstone is complete to help measure the success of MyWed App.

1. How did you first learn about MyWed App?
2. What was your first impression when hearing about MyWed App?
3. How likely is it that you would recommend MyWed App to a friend?
4. What comes to mind when thinking about MyWed App?
5. Rating the app on a scale of 1 (Difficult to use) - 5 (Easy to use), how user friendly would you find it?
6. Rating the app on a scale of 1 (Difficult to use) - 5 (Easy to use), how did you find the timeline features?
7. Rating the app on a scale of 1 (Difficult to use) - 5 (Easy to use), how did you find the music search feature?
8. Rating the app on a scale of 1 (Difficult to use) - 5 (Easy to use), how did you find the song suggestion features?
9. How satisfied are you with the look and feel of MyWed App? 1 Not Satisfied - 5 Extremely Satisfied
10. Which similar apps, if any, did you use before MyWed App?
11. What do you like the most about MyWed App?
12. What do you like the least about MyWed App?
13. What feature(s) do you find most important for your needs?
14. What is the most important feature we should add to MyWed App?
15. Did MyWed App make a difference in planning your event?

1.8. Life of the project beyond capstone

My goals for MyWed App go far beyond the capstone. As a co-founder of a mobile DJ entertainment company, I can personally utilize the app with our clients, where I can test and improve upon the app, and continue to build out additional features. I will then launch a new business specifically for MyWed App, so that others can utilize my app for their wedding planning needs.

Once the app is well received by my target audience, I hope to search for sponsors and funding so that I will be able to build out a team to continue to develop new features based on feedback from customers, as well as, a support team for the existing features and enhancements.

A lot of effort will then go into the marketing and sales process, meeting with DJ's and pitching the idea and how it would benefit their business. Focusing on the DJ's for this part of the process is key because MyWed App would make profit through creating a subscription service that would be paid by the DJ's using the app. The price of the service would be based on the amount of events, number of in-app features and level of customer support. Hosts and guests would not be charged to use the basic app, but could have in-app purchases for additional features that may come in the future.

Later, after the success of MyWed app, I plan to build out similar apps that cater to all different types of events, beyond weddings.

2. Competitor Review

2.1. Competitor 1: [Vibo](#)

Vibo is a mobile app that connects couples with their DJ to request songs, as well as, allow for guests to request songs. Users can search for songs, view recommended songs, listen to songs via YouTube, and like songs.

2.1.1. Pros

- There is a mobile app for DJ's and hosts to use, guests don't need to login to request songs. DJ's also have access to a website on their desktop to manage clients.
- The app can be used for other events, not just weddings.
- Users can play songs, and link with spotify playlists.
- DJ's match songs with their library and import playlists into their DJ software.

2.1.2. Cons

- This app is very difficult to get started with and is pretty locked down until you have a DJ that is willing to sit on an hour long sales call then pay \$100+ a month.
- There are a lot of restrictions and parameters for the DJ to set up.
- It looks awful and is very difficult to use.
- The DJ song matching is very clunky and requires additional desktop apps.
- Not a good user interface for building a timeline.
- Very DJ focused

2.2. Competitor 2: [WeDo](#)

WeDo Is a website/mobile app that focuses on connecting wedding guests during the reception. The online app allows the bride/groom and guests to request and like songs from music database, compete in bride & groom trivia, vote on survey questions, upload/share photos and videos, share food and drink menus, create cocktail recipes and create seating charts.

2.2.1. Pros

- Very interactive and fun app for wedding guests to keep them busy during dull moments.
- Fun and exciting look and feel.
- Fairly easy to use once you create an event.

2.2.2. Cons

- No interface for DJ's, DJ's would have to join as a guest
- Event creation process is confusing.
- Hosts can only login online to edit and customize the app. Mobile app is for guests only.
- For Bride/Grooms to create an event costs: \$249.99 CAD, free for guests to use.

2.3. Competitor 3: DJ Event Planner

The DJ Event Planner is a CRM and online planning tool for different types of events. This tool includes forms, quote generators, music database, online payments, event calendars, music request system, timeline, email tracking and scheduling, third party integrations, financial remoring, and more. This tool is the ultimate tool for a DJ company with a lot of events and keeping track of all the management functions for running a DJ company.

2.3.1. Pros

- Pricing isn't too bad its tiered starting at \$10/month.
- The functionality is pretty straightforward to use

- Widely used in the industry because it has features for timeline, song requests, internal notes, payments, CRM and more.

2.3.2. Cons

- Not very user friendly
- Has way more functions than necessary
- Minimal user interface for the guests
- All done online, there is no app for the hosts or guests
- Not much branding, very barebones and not very modern look and feel

2.4. Comparison Matrix

2.4.1. DJ Perspective

Competitor review comparison matrix from the perspective of the DJ.

Note: WeDo does not have a DJ persona and has been excluded from this competitor review.

Feature	Vibo	DJ Event Planner	My App
App Compatibility	Online Website Additional desktop downloads	Online Website	iOS, Android App
Marketing Website	One page website	Large complex Website	Small Multi-page Website
Onboarding	Meet with owner of Vibo for a 1 hour video sales conversation then once you pay you can get access to login.	Easy create login on website and get started right away with a free trial.	Day 1: Link on the website to app store, once user downloads app they can create an account. Day 2: First event is free, In-app purchases for multiple events.
Songs	Import list of DJ's own song list/database using an additional tool to add and match songs with YouTube to make them searchable. Or use prebuilt database.	Add your own database or use 3 of the pre built song list options.	Day 1: Utilize existing pre built databases Day 2: Allow users to import their own songs
Create Timeline	You can have preset groupings of songs for the events, rename them and move the ordering. If you want to add a start time, you add it in the notes.	Add or drag in activities, add the time and notes.	Timeline is the same as the hosts timeline, although you have the ability to add internal comments.
Export Songs	Songs can be downloaded in a file compatible with Serato or Virtual DJ.	Unknown.	Song list can be exported as a spreadsheet or CSV. Day 2: Download compatible

			file to Virtual DJ or Serato
Overall usability	Very confusing, A lot of different apps and tools to use in order to do minimal functionality.	Very confusing because there are so many different components and tools, maybe it would be easy to learn over time once you get used to it. Seems very technical rather than user friendly.	Very easy to use, seamless end to end experience.
Requests/Likes	Does not allow guests to like or request during the event.	Does not allow guests to like or request during the event.	Will allow guests to like or request during the event and will be sent update notifications to the playlist.
Others	A lot of functionality to add permissions, restrict functions, enable different views, turn off request features, etc.		

2.4.2. Host Perspective

Competitor review comparison matrix from the perspective of the host.

Feature	Vibo	WeDo	DJ Event Planner	My App
App Compatibility	iOS, Android App	Online Website	Online Website	iOS, Android App
Onboarding	Fairly difficult to figure out process. No links to app store on the website. Create account on app.	Very difficult, couldn't create an account due to error on create account.	Unknown how couples create account, website is geared toward DJs only.	Link on the website to app store, once user downloads app they can create an account.
Search for songs	Search Youtube. Can play youtube video then add song to list	Search from some music database and add song to the list.	Search from built in music data base or DJ's uploaded database.	Search from a database.
Import Songs	Import Spotify Playlist. Login with spotify account to import.	No.	Add a song title and artist or connect with spotify.	Import from spotify or add a song title.
Recommended Songs	Groups of lists of songs. You can play the song on YouTube then add to list.	No.	Has a few lists of top songs and recommendations.	Songs grouped by different categories to suggest top songs for different parts of the event.
Like Songs		Like songs by tapping on the Let's	No - guests have no access to this app.	Like songs by clicking on the heart

		Dance icon.		icon. The more likes, the song moves up in the playlist. Songs added by couple will have a special indicator to show the couple requested this song.
Invite Guests	Send a link to open the app and create an account so that they can request songs.	Send a link and login with email and wedding code.	Give guests a URL and password to request songs prior to the event.	Add guestlist along with the guests email or phone number prior to the event, or share a unique link. During the event the guests can scan a QR code. Songs can be requested by the guests before and during the event.
Create Timeline	No timeline, can only add music to specific sections. (i.e Prelude, first dance, etc). For each section you can add notes.	No timeline but can create seating charts, menu, bar details, wedding party details, vendor lists, etc..	Add or drag in activities, add the time and notes.	The timeline starts out by the couple answering a few questions and will be populated based on their answers. Then they can go in and adjust the timeline at any time prior to the event. The timeline will have links to important guests so that they can receive notifications during the event when something is about to occur.
Export	Export music list to PDF	No export.	Print.	Share link, export to PDF.
Overall usability	So confusing and difficult to use.	Fairly easy to use.	Somewhat easy to use, but not modern. Very old UI.	Very easy to use, seamless end to end experience.
Others	None	Trivia, Polls, Drink Randomizer, Food and Bar Menus, Guest Profiles, Seating Chart, Upload Pictures/Videos and share.	See previous and outstanding payments, pay on the app. Forms, love story, sign documents digitally,	Notifications. Most others are going to come in a later release.

3. Technology Requirements / Resources / Material

3.1. Balsamiq MockUp

3.1.1. Description

A tool for low fidelity wireframes and concepts.

3.1.2. Related Course/Experience

As a UX Design professional, I use a variety of tools for low fidelity wireframes, balsamiq being one of the quick tools at the ideation stage.

3.1.3. Alternative Technologies

Axure, Figma, Sketch, InVision, AdobeXD

3.1.4. Why this technology?

Balsamiq is a very lightweight tool, that keeps to the true nature of low fidelity wireframes. Most other tools now combine both visual design and user experience design together, which will be helpful later in the process, but for the early ideation stage, Balsamiq will keep the focus on creating low fidelity iterations to figure out the workflow rather than focusing on all the small details.

3.1.5. How will it be used?

I will be using balsamiq to sketch out all the baseline workflows, then share them to a group of potential users to validate that the workflow and key concepts make sense, prior to moving onto high fidelity mockups.

3.2. Sketch + InVision

3.2.1. Description

A tool for high fidelity mockups, basic prototyping, reviewing styles for development, and sharing with others for feedback.

3.2.2. Related Course/Experience

As a UX Design professional, Sketch and InVision are both essential tools in the process of design, prototyping and design to developer hand off.

3.2.3. Alternative Technologies

Axure, Figma, AdobeXD

3.2.4. Why this technology?

Sketch is the industry standard and tool I am most familiar with so I can quickly iterate and get designs completed. InVision is one of the best all in one tools for designers. It is fast, easy to use and hosted on the cloud, so I can work on the designs from any computer. I can easily share designs with others for feedback and use as a baseline for development.

3.2.5. How will it be used?

Working with Sketch will help when it comes to focusing on the details, the look and feel, atomic design patterns and branding of the app. I can then pushed using the craft plugin to InVision. With InVision, I can prototype and validate my designs with end users and can also use the developer tools to inspect and review colors, fonts, spacing, etc. for easy conversion into front end development.

3.3. Adobe Creative Suite (Photoshop, Illustrator, Premiere, After Effects)

3.3.1. Description

The industry standard software for creating branding assets; logos, favicons, animations, videos, etc.

3.3.2. Related Course/Experience

Visual Communication Design (DGMD E-50)

Video Editing and Digital Design (DGMD E-35)

3.3.3. Alternative Technologies

There isn't really any reliable alternatives.

3.3.4. Why this technology?

I will need to create a brand identity for my app, so therefore I will need to use this software to create the logo and branding.

3.3.5. How will it be used?

Adobe Illustrator will be used to create a logo for the app. Premiere and After Effects will be used to create some sort of promotional introductory video or animation for the app.

3.4. Google Firebase

3.4.1. Description

Google Firebase is an app development platform where you can manage the app and its infrastructure.

3.4.2. Related Course/Experience

Spent time researching what would be the best way to manage the infrastructure of the app and found that Firebase is an easy to use, all in one solution with great documentation and is easy to learn.

3.4.3. Alternative Technologies

Parse and Back4App

3.4.4. Why this technology?

The decision was between Parse and Firebase, I choose firebase based on the documentation that was readily available and how easy it is to consume. Having minimal back end experience, I need a platform that is very easy to utilize.

3.4.5. How will it be used?

Firebase has several different components that I can leverage including user authentication, cloud storage, hosting, real time database, performance monitoring, cloud messaging, and more.

3.5. Deezer Open Source API

3.5.1. Description

An api with over 30 million tracks available to search for.

3.5.2. Related Course/Experience

None, learning through research.

3.5.3. Alternative Technologies

Spotify API

3.5.4. Why this technology?

Originally, I wanted to go with Spotify API, because of its ease of use, but after reading into it, I found that if users did not have a spotify premium account, they would not be able to search for the exact song that they are looking for. Therefore, Deezer seems like a more logical choice, where users can search for a song in a library of 30 million options. The downside is users won't be able to listen to the song, but that is not a necessary requirement for the app's success.

3.5.5. How will it be used?

Users will be able to search song titles or artists to pick a song they want to hear the DJ play.

3.6. ReactNative

3.6.1. Description

A javascript library for building apps, combining native development with react. React Native allows for shared code that can be used for both iOS and Android development.

3.6.2. Related Course/Experience

CSCI E-12 Website Development

CSCI E-50 Intensive Introduction to Computer Science

CSCI E-3 Web Programming/Javascript

DGMD E-27 Modern and Mobile Front-End Design II

3.6.3. Alternative Technologies

Native Script, Ionic, Flutter, Apache Cordova, Native App development

3.6.4. Why this technology?

React Native seems to be the most heavily used framework, backed by Facebook and has a lot of support and stability. The app can be used cross-platform; which allows both iOS and Android apps to be built in parallel. Since the code is very similar to React, only small changes need to be made in order to also make the app work as a React desktop/browser app, which could be good for future support. The benefit of using a javascript based framework is that I have a lot of knowledge from my previous coursework, that can carry over into the development of the app.

3.6.5. How will it be used?

I will be using React Native to build the app using the javascript framework.

Note: React Native has the following dependencies that need to be installed and part of the workflow for using React Native: Homebrew, Node, Watchman, JDK, React-Native-Cli, Xcode and Android Studio.

3.7. Expo

3.7.1. Description

A tool for building and seeing the app in real time on a device while you edit the code.

3.7.2. Related Course/Experience

None, was suggested as part of the React Native development workflow.

3.7.3. Alternative Technologies

N/A

3.7.4. Why this technology?

Expo is utilized to see what the app looks like, without having to deploy to the app store while developing.

3.7.5. How will it be used?

I will be using Expo to view the app while developing.

3.8. Asana Project Management

3.8.1. Description

A tool for product management, viewing the backlog and keeping track of tasks.

3.8.2. Related Course/Experience

Agile Project Management (ISMT E-101)

3.8.3. Alternative Technologies

Jira, Trello

3.8.4. Why this technology?

It's a lightweight and free way to track progress and keep the backlog in order.

3.8.5. How will it be used?

All the work will be broken down into user stories and prioritized on the backlog and break apart into two week sprints. This then will allow for me to easily track progress for each milestone.

4. Developer Manual / Product Design / Methods

4.1. Database Structure and Workflow

Permissions and authentication will allow users to see what events and features they are entitled to see. Once the user logs in, using the Firebase Authentication service, all data can be properly authenticated and securely distributed to the correct users. Then, all relevant information will be fetched through Firebase. Most of the data, aside from a few API's, will be running through Firebase and stored in the cloud. Which means, when users update, change, or save any information it will be pushed to the database through Firebase, where the data can easily be fetched and displayed in real time to other users. See diagram (right) for a visual representation of how Firebase database structure interacts with ReactNative.

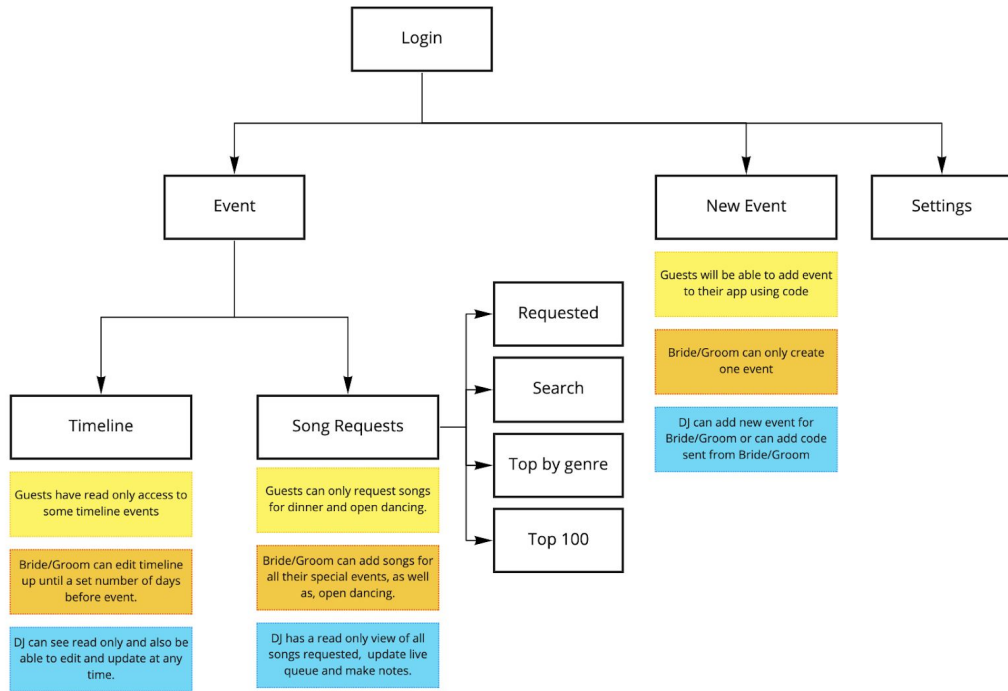
For example, when a user favorites a song they want to hear, the metadata describing the song and number of favorites will then be pushed to the cloud and fetched by all users that have permission to the specific event. Then all users will see the song move in priority order on the song request list with the new favorite.



4.2. Design Workflow

When building out the user interface, the three main user types will have very similar screens. They will just see different details and options based on their permissions and role. Once users log in, they will be able to view an event or add an event, as well as, have some general settings. When adding a new event, users will be able to pick what role they are for the specific event, then will be redirected to the event page for that specific event. On the event page, users can view a timeline or the song requests. DJ's have a bit of a master view on these pages, where as guests have limited functionality. But overall, the look and feel should be the same for all users. See below for a site map of the different views and the users permissions, also available on Miro: https://miro.com/app/board/o9J_kw6JOoo/ .

For example. focusing on the song requests, there then will be a subset of pages where the user can view requested songs, search for a song, view songs by genre or top 100. These are the views where users will then be able to favorite songs they want to hear.

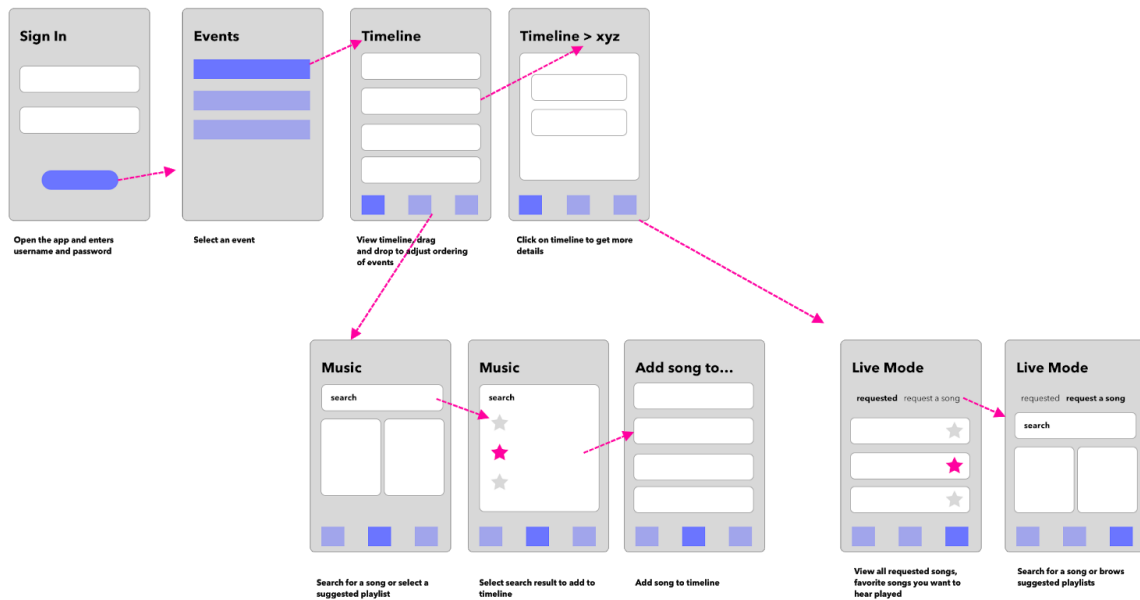


5. User Manual / User Journey

5.1. Wireframes

Wireframes of the main user flows.

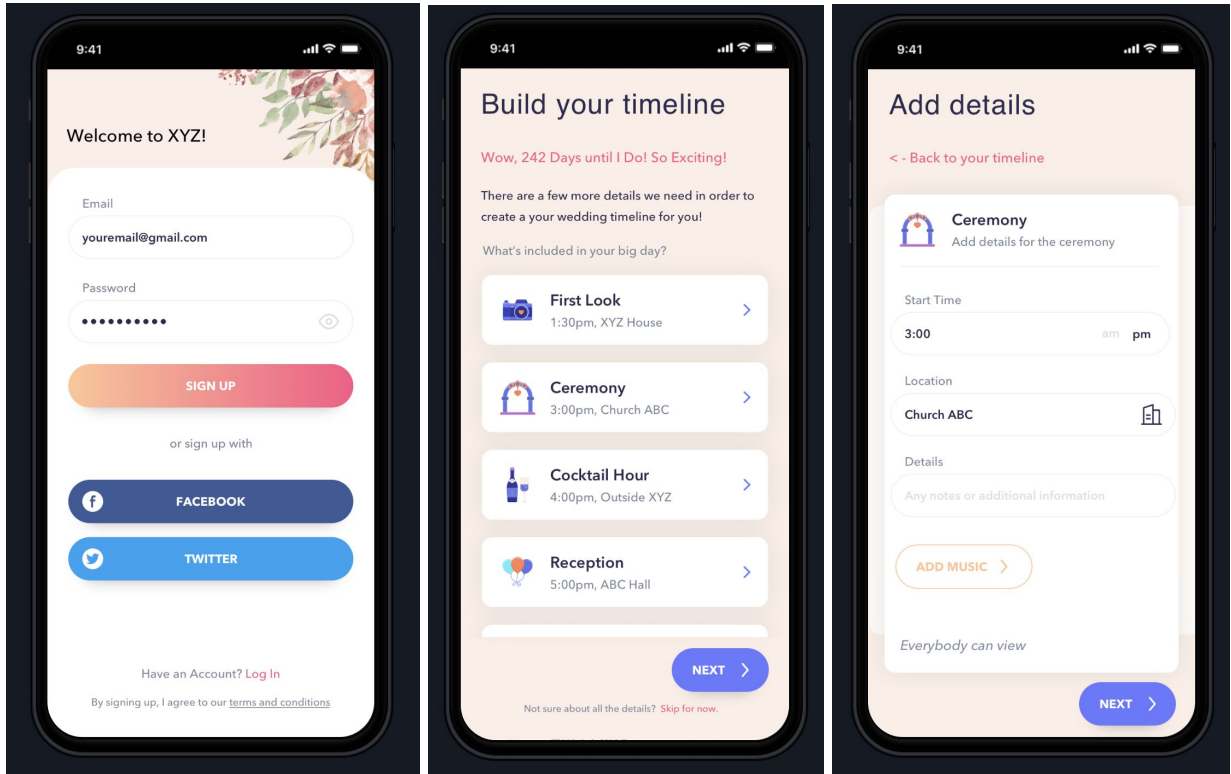
In Vision: <https://cortneystauffer802923.invisionapp.com/public/share/3UWU6C5Y9>



5.2. Mockups

Mockup of the look and feel.

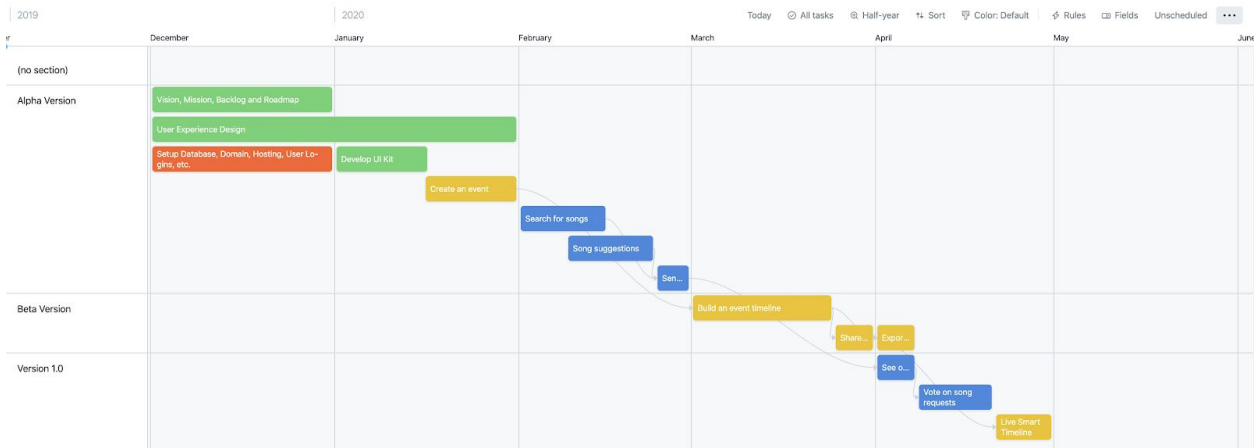
InVision: <https://cortneystauffer802923.invisionapp.com/public/share/ZMWU05MPK>



6. Work Plan / Milestones

6.1. Gantt Chart

Gantt Chart to show the milestones over the course of the timeline for next semester.



6.2. Work Plan

Overall roadmap for the capstone project.

Name	Version	Timeframe	Category	Notes
Send song requests	Alpha	Feb 24-29	Song Share	<p>Guests can select a song and send song request to a shared list viewable by all users.</p> <p>DJ and Host will get a notification that there is a new song request.</p> <p>Host can mark requested songs as Do not play if they don't want to hear the song played.</p> <p>DJ can add the song into a playlist or queue.</p> <p>The day of the event, notifications are turned off for the Host so that they are not disturbed during their wedding.</p>
Song suggestions	Alpha	Feb 9-23	Song	<p>Create song suggestion database OR associate with playlist API's.</p> <p>All users should be able to see song suggestions then select a song and associate it with an event.</p>
Search for songs	Alpha	Feb 1-15	Song	<p>Allow any user (DJ, Host, Guest) to be able to search for songs.</p> <p>Songs should be retrieved via music API.</p> <p>User should be able to select a song and associate it with an event.</p>
Live Smart Timeline	1.0	April 21-30	Event Share	<p>The day of the event the timeline goes into Live Mode, where the DJ can see what event is happening next, set reminders, and check off when that event is finished. The DJ and associated users will get notifications when certain events are about to happen so that they are prepared. For example, all guests will get a notification 10 minutes before the grand entrance is about to start so everyone can be in their seats.</p>
Vote on song requests	1.0	April 8-20	Song Share	<p>Guests can vote on a song once. The list of song requests should be sortable by vote.</p>
See other song requests	1.0	April 1-7	Song Share	<p>All users can see a page where the requested songs queue up.</p> <p>Songs added by the Host will be styled differently to allow the guests to know that the host requested this song. The list can also be filtered on "requested by host".</p>

Export event timeline	Beta	April 1-7	Event Share	Users can export the timeline to PDF or CSV.
Share event timeline	Beta	March 25-31	Event Share	The host can share the event timeline with the DJ... when they are ready to share, the notification gets sent to the DJ notifying that the timeline is ready for review. The DJ or Host can mark certain aspects of the timeline "public" for all to view, vs "private" to stay between Host and DJ. The DJ or Host will then publish the timeline for guests to be able to view.
Build an event timeline	Beta	March 1-24	Event	DJ and Host can edit the details of the event, creating a timeline and adjusting the details up until the day of the event.
Create an event	Alpha	Feb 16-31	Event	Develop the workflow for creating an event. This workflow should be available to DJ and Host. Event details should be stored in the database.
Setup Database, Domain, Hosting, User Logins, etc.	Alpha	Dec 1- 31	Backend	Make sure all the initial setup is done so the app can easily be hosted. Setup the database and allow for account and password setup. Create demo users for DJ, Host (Bride/Groom), and Guest. This should all be done in Google Firebase.
Design System	Alpha	Jan 1-16	Product	Create a design system/library of reusable styled components for the app, based on atomic design principles.
User Experience Design	Alpha	Dec 1-Jan 31	Product	Create wireframes, workflows, and mockups for the website and app. Validate mockups through a simple InVision prototype shared with a few usability study participants. Document findings and iterate on the design based on feedback.
Vision, Mission, Backlog and Roadmap	Alpha	Dec 1-31	Product	Define the project roadmap and backlog using Asana, create a short presentation to express the vision, mission, goals, etc. of the product.

7. References

Bunn DJ Company. (2019, October 29). Retrieved from <https://vimeo.com/128150184>.

Dossey, A. (2019, October 1). A Guide to Mobile App Development: Web vs. Native vs. Hybrid. Retrieved from <https://clearbridgemobile.com/mobile-app-development-native-vs-web-vs-hybrid/>.