

# Capstone Project Phase 2 - Nexus

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October 2024

## 1 User Personas

### 1.1 David



- Name: David Lee
- Details: 35-year-old IT specialist with a strong interest in technology and gaming. Comfortable with technologies. Enjoys meaningful discussions about tech and gaming.
- Goal: Wants to find like-minded individuals with whom he can share and learn from each other. To engage in discussions about tech and gaming.

## 1.2 Mildred



- Name: Mildred Wilson
- Details: 70-year-old Retiree from the midwest with limited dexterity and poor technical skills.
- Goal: Wants to stay in touch with her grandchildren across the country without feeling overwhelmed by technology.

## 1.3 Maryam



- Name: Maryam Inaya Khan
- Details: 25-year-old from the middle-east, introverted & shy in new environments, but warm and kind once she gets comfortable. Prefers building deeper connections with a few people rather than large social circles.

- Goal: At work, she struggles to engage with her new coworkers because she is shy in face-to-face interactions, finds it hard to connect with people with similar experience around stress and mental health.

#### 1.4 Jordan



- Name: Jordan Bells
- Details: Jordan Bells is a 22-year-old that just recently graduated from college, moving to a new state for his job. He enjoys spending time outdoors, enjoying activities such as hiking and climbing. Jordan is more comfortable with people he knows and doesn't like going out to places alone.
- Goal: As a recent grad moving to a whole new state for his job, Jordan feels isolated. He wants to meet people that enjoy similar activities as him, but is unwilling to go out alone as he finds it hard approaching new people. He would like to use Nexus to meet other recent grads in his area that would be willing to show him around and enjoy going outside.

## 1.5 Jade



- Name: Jade Chan
- Details: Jade Chan is a 20-year-old online student who leads a sedentary lifestyle, spending most of her time at home reading or watching shows. She values privacy, simplicity, and low-pressure social interactions, preferring tech platforms that offer streamlined communication without overwhelming her. Coming from a lower-middle class background, Jade enjoys using luxury items and is cautious about privacy when using technology.
- Goal: Jade wants a messaging platform that simplifies video communication and respects her privacy. Nexas appeals to her with its anonymous avatars, automatic transcripts, and algorithm-driven user discovery, allowing her to engage with others without social pressure or revealing too much personal information.

## 2 User Stories

1. As a tech enthusiast and gamer, I want to find a group of people with whom I can have discussions on tech and gaming topics so that I can share, learn, and engage in meaningful conversations beyond physical limitations and time.
2. As a retiree with limited dexterity and poor technical skills, I want an easy-to-use video messenger with simple navigation and large buttons, so I can effortlessly connect with my grandchildren across the country.
3. As a recent grad moving to a new city, I want to be able to find people in my area to communicate with so that I can make friends in my area.

4. As an online student with a sedentary lifestyle, I want to use a messaging platform with anonymous avatars, so that I can communicate without revealing my personal identity and maintain control over my privacy.
5. As a user focused on privacy, I want to be able to block users, so I can maintain safety and security.
6. As a social person, I want to send and receive video, so I can maintain connections with my friends
7. As someone who is often on the go, I want to be able to read transcripts of the videos sent, so that I can use the app while in loud areas.
8. As a person who isn't interested in the topic anymore, I want to leave the group, so I don't have to interact with the same people anymore.
9. As a self-conscious person, I want to turn off video when sending messages, so I can preserve privacy.
10. As a new user, I want to create an account, so I can send and receive messages.
11. As someone who is constantly busy, I would like to send reactions to messages, so that I can respond on the fly.
12. As someone who is very forgetful, I would like for notifications when messages are sent in my groups, so that I know to read and respond.

### 3 Use Cases

There are five primary use cases:

1. Form Groups
2. Find Groups
3. Create Account
4. Send/Receive Video
5. UI Navigation

#### 3.1 Form Groups

##### 3.1.1 Primary Actor

- **User:** A Nexus app user who wants to create a group for discussions.

### **3.1.2 Stakeholders and Interests List**

- **Primary User:** Wants to easily create a group to connect with others for discussions.
- **Group Members:** Expect to join a functional and well-named group, receive invitations, and participate in conversations.
- **Nexas Platform:** Ensures that group creation is smooth and secure, maintaining performance while handling multiple groups.

### **3.1.3 Pre-Conditions**

- The user is logged into the Nexas app
- The user has an existing account with Nexas.

### **3.1.4 Post-Conditions**

- A new group is created with the provided name, description, and members.
- Group members receive notifications about their inclusion in the group.
- The group is listed under the user's "My Groups" section.

### **3.1.5 Success Scenario**

1. **The user navigates** to the "Form Groups" option from the main dashboard.
2. **The user is prompted** to enter a group name, description, and select members from their contact list.
3. **The user confirms the creation of the group** by tapping the "Create" button.
4. **The system successfully creates the group** and sends invitations/notifications to selected members.
5. **The group appears in the user's group list** and the group is now active for discussions.

### **3.1.6 Extensions**

#### **3a. Invalid Information Input**

1. The user enters a group name that already exists.
2. The system displays an error and prompts the user to choose a different name.

#### **4a. Insufficient Permissions:**

1. The user lacks permission to invite certain members.
2. The system alerts the user and prevents invitations from being sent to restricted contacts.

### 3.1.7 Special Requirements

1. **Usability:** Group creation should be intuitive and easy to navigate for users of all levels of technical skill.
2. **Performance:** Group formation should be completed quickly.
3. **Security:** Ensure only authorized users can form groups or invite others to a group.

### 3.1.8 Technology and Data Variation List

1. **Mobile/Android Compatibility:** Users should be able to form groups seamlessly across different Android devices (e.g., varying screen sizes, processing power). The process should remain consistent, ensuring the app functions effectively on both older and newer Android versions.
2. **Contact List Variations:** The system may need to handle users with different-sized contact lists (large/small), ensuring performance remains smooth.
3. **Network Connectivity Variations:** The system should handle varying levels of network connectivity (e.g., 3G, 4G, 5G, Wi-Fi) without compromising the user experience. This includes optimizing data usage for lower bandwidth and ensuring that group formation processes are reliable, even in poor network conditions.

## 3.2 Find Groups

### 3.2.1 Success Scenario

1. **User opens the app** and navigates to the home screen.
2. **User selects "Find Groups"** from the main menu.
3. **Search options are displayed**, allowing the user to search by keywords or apply filters such as group type, location, or topics of interest.
4. **Relevant groups are shown** based on the search or filters applied.
5. **User clicks on a group** to view its details, including description, members, and recent activities.
6. **User selects "Join Group"** and is either added directly or sent a request for admin approval.

7. **The user receives a notification** confirming that they have successfully joined the group and can now participate in discussions.

### 3.2.2 Alternate Scenarios

#### 1. Invalid Information Input

- The user searches with misspelled or invalid keywords.
- The system suggests possible corrections or similar groups.

#### 2. No Results Found

- The search yields no matching groups.
- The system suggests creating a new group or recommends related groups the user may be interested in.

#### 3. Group Request Pending

- The user tries to join a private group, requiring admin approval.
- The system informs the user their request is pending and allows them to explore other groups while waiting.

#### 4. Network Error

- The user loses connection during the search or group joining process.
- The system saves the search parameters and prompts the user to retry when the connection is restored.

## 3.3 Create Account

### 3.3.1 Success Scenario

When a user wants to create an account, they should navigate to the signup page in the login screen. They should then be prompted to enter their name, email, and password. They will then verify their information and be navigated to the home screen where they can then immediately use the app's features.

### 3.3.2 Alternate Scenarios

#### 1. Invalid Information Input

- The user inputs an invalid email or weak password.
- The system displays an error message asking for valid information and preventing account creation until corrected.

#### 2. Failed Verification

- The user does not receive the verification code or the code entered is incorrect.

- The app provides the option to resend the code or try again, but if multiple attempts fail, the process halts.

### 3. Network Error

- The user's internet connection drops during account creation.
- The system saves progress and prompts the user to retry when the connection is restored.

## 3.4 Send/Receive Video

### 3.4.1 Success Scenario

1. **User opens the app** and navigates to a group
2. **Videos received are displayed**, allowing the user to scroll up to see the history of users send videos
3. **User selects "Send Video"** at the bottom of the chat
4. **Camera application opens**, allowing the user to record a video to send
5. **User selects "Send"** and the video is sent to the chat

### 3.4.2 Alternate Scenarios

#### 1. Network Error

- The user doesn't have network connection
- The application asks to resend the message or reload group

#### 2. Video Error

3. The video causes an error while uploading
4. The application asks to resend the message

#### 5. Group Deleted

6. The group is deleted while video is being sent
7. The application prompts user to return to the homepage, notifying them the group has been deleted

## **3.5 UI Navigation**

### **3.5.1 Success Scenario**

When a user opens the app, they are greeted by a minimalist home screen where they can easily identify options to navigate between features like "Start Video Chat," "Find Groups," and "Form Groups." The user selects "Start Video Chat," smoothly transitioning to the contact list. After choosing a contact, the user enters the video chat interface seamlessly, without any delays or confusion. Throughout the interaction, the user effortlessly accesses features such as enabling transcripts or adjusting settings, and successfully completes the video call with ease.

### **3.5.2 Alternate Scenarios**

#### **1. Difficulty Locating Features**

- The user struggles to find the "Start Video Chat" option.
- The app provides a clear prompt or interactive help, guiding the user to the correct menu item for starting a video chat.

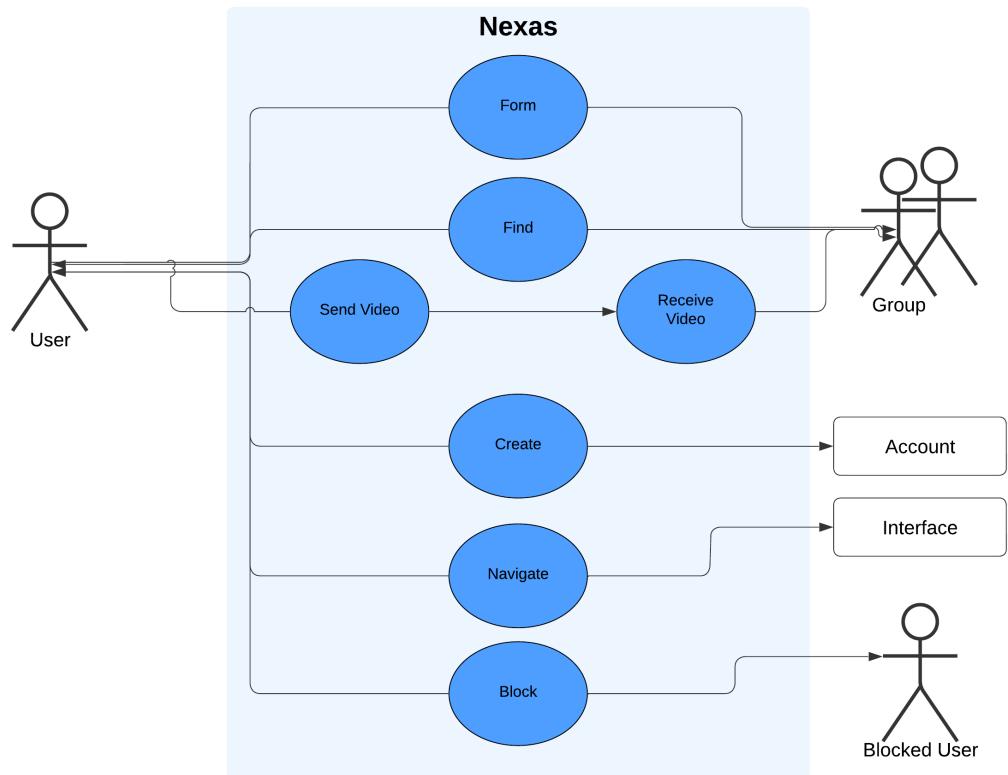
#### **2. Slow Navigation Response**

- The app takes too long to load between screens or actions.
- The system displays a loading indicator and suggests retrying if necessary, or provides troubleshooting tips to improve the app's performance.

#### **3. Accidental Exits**

- The user accidentally swipes or taps out of the video call screen.
- The app offers a quick return button or prompt, allowing the user to return to the ongoing video chat without losing their place in the conversation.

## 4 Use Case Diagram



## 5 Scrum

### 5.1 Product Roadmap

ID	User Story	Estimation	Priority	Sprint
10	As a new user, I want to create an account	3	1	1
2	As a retiree with limited dexterity and poor technical skills, I want an easy-to-use video messenger with simple navigation and large buttons	8	2	1
1	As a tech enthusiast and gamer, I want to find a group of people with whom I can have discussions on tech and gaming topics	5	3	1
6	As a social person, I want to send and receive video	8	4	1
3	As a recent grad moving to a new city, I want to be able to find people in my area to communicate with	3	5	2
5	As a user focused on privacy, I want to be able to block users	1	6	2
8	As a person who isn't interested in the topic anymore, I want to leave the group	2	7	2
9	As a self-conscious person, I want to turn off video when sending messages	1	8	2
7	As someone who is often on the go, I want to be able to read transcripts of the videos sent	3	9	3
11	As someone who is constantly busy, I would like to send reactions to messages	5	10	3
12	As someone who is very forgetful, I would like notifications when messages are sent in my groups	1	11	3
4	As an online student with a sedentary lifestyle, I want to use a messaging platform with anonymous avatars	8	12	3
Total		48		

## 5.2 Product Backlog

ID	User Story	Tests/ DoD
10	As a new user, I want to create an account	<p>Input: The user should be able to input account information into fields</p> <p>New User: A user account should be generated that can now be logged into, giving the user the ability to use the application</p>
2	As a retiree with limited dexterity and poor technical skills, I want an easy-to-use video messenger with simple navigation and large buttons	<p>Buttons: Button sizes are large enough to be able to easily select intended buttons</p> <p>Navigation: Number of screen pages is limited to allow the user a simple navigation of the application.</p>
1	As a tech enthusiast and gamer, I want to find a group of people with whom I can have discussions on tech and gaming topics	<p>Group Search: Can filter groups based on search</p> <p>Join Group: User can join a selected group after finding it</p> <p>Create Group: When selecting create group, user can enter group details to generate a new group</p> <p>Group details: Description and member count are clearly displayed</p>
6	As a social person, I want to send and receive video	<p>Send Video: When user records video and presses send, the video appears in other user's chat within the group</p> <p>Receive Video: When a user in a group has sent a video, it appears in group chat.</p> <p>Watch video: When a user clicks a video, the video should become full screen and play</p>
3	As a recent grad moving to a new city, I want to be able to find people in my area to communicate with	<p>Search Functionality: User can choose a location and distance to filter their search within</p> <p>Search: When user chooses to filter by a distance from a location, only groups defined in that specified location appear</p> <p>Group Recommendations: The app should recommend popular or nearby groups to the user based on location.</p>
5	As a user focused on privacy, I want to be able to block users	<p>User page: When clicking on another user's profile, a page appears with a block or unblock button based on if the user is currently unblocked or blocked</p> <p>Blocked: When a user has blocked another user, neither user will be able to find nor join groups that already contain the other</p>

ID	User Story	Tests/ DoD
8	As a person who isn't interested in the topic anymore, I want to leave the group	<p>Button: A button is displayed while the user is in a group chat that allows the user to leave the group</p> <p>Deletion: When leaving a group, the group and messages contained within are removed from the users groups</p> <p>New Messages: Messages sent in the group after leaving are not received</p> <p>Group Update: Members of the group are notified that the user has left the group</p>
9	As a self-conscious person, I want to turn off video when sending messages	<p>Button: Before recording a video, the user is able to toggle off the video functionality with a button</p> <p>Recording: When recording with video off, a black screen is displayed instead of an image to show the video is off</p>
7	As someone who is often on the go, I want to be able to read transcripts of the videos sent	<p>Transcripts: transcripts are automatically generated for every video and are accurate representation of the user's speech based on current auto transcript standards</p> <p>Button: A button is displayed next to the video while in the chat that brings up the transcript</p>
11	As someone who is constantly busy, I would like to send reactions to messages	<p>Quick Reactions: When pressing and holding a video, a selection of emojis are displayed that the user can select to send</p> <p>Reaction Display: Reactions are displayed next to the video that received the reaction without interfering with the UI</p>
12	As someone who is very forgetful, I would like notifications when messages are sent in my groups	<p>When: Notifications trigger when messages are received, reactions are received, a user leaves, a user joins, or a group is deleted</p> <p>Notification messages/reaction: Display sender's name and if it was a message or reaction</p> <p>Notification group change: Display group name and the action that occurred</p> <p>Notification settings: Allow toggling notifications on/off</p>
4	As an online student with a sedentary lifestyle, I want to use a messaging platform with anonymous avatars	<p>Button: While recording, a button is displayed that if selected allows the user to choose an avatar that replaces their face or turn off the avatar</p> <p>Avatar: The avatar replaces the user's face and mimics their mouth and head movements</p> <p>Video: The recorded video displays the avatar instead of the user</p>

## 6 Github Setup

<https://github.com/JLivanec/Nexas.git>