

Voxalburgh

Game Design Document

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Summary

Voxalburgh is a **location-based AR game** with a theme of **postcrossing** where players travel at Strip District, reveal culture stories through AR interactions, and learn about **culture integration** from stories and the history.

Voxalburgh is also a framework with possibilities of being replicated in different cities with different cultures around the world.

Inspiration

Mailbox

The reason why we chose mailboxes as a starting point of our inspiration is that:

1. Mailboxes can be great anchors for detecting AR interactions in our game.
2. Mailboxes are widespread all over the world. Therefore, scanning mailboxes can be replicable in other cities.

Postcrossing

Postcrossing is a **postcard exchange** project that invites everyone to send and receive postcards from random places in the world.

Mindset

As our game is about culture integration and culture mixture, for those who are not familiar with the culture stories in certain historical locations, we would like players to feel **excited, curious and surprised** when they learn about new facts. For those who have been familiar with those places, such as residents, we hope they can find a sense of **belonging, respect and value** as they are part of the community besides being excited to find out new facts from what they have been living for a long time. To conclude, we wish players to feel refreshed and different about those locations after they play our game.

Gameplay

This experience is a location-based AR game where players meet an AR magical messenger mailbox and find AR postcards from people in the past from the mailbox. With the help of the mailbox, players are able to communicate and connect with those people who helped to build the foundation of the present day community.

General Game Flow

Description

There are 3 chapters in the game, with each chapter telling a cultural story about a certain location at Strip District, Pittsburgh. For a more detailed narrative, please refer to our Narrative Design Document: [Postcrossing Voxalburgh](#).

In each chapter, there are 3 steps for the players to learn more about this location and finish this chapter:

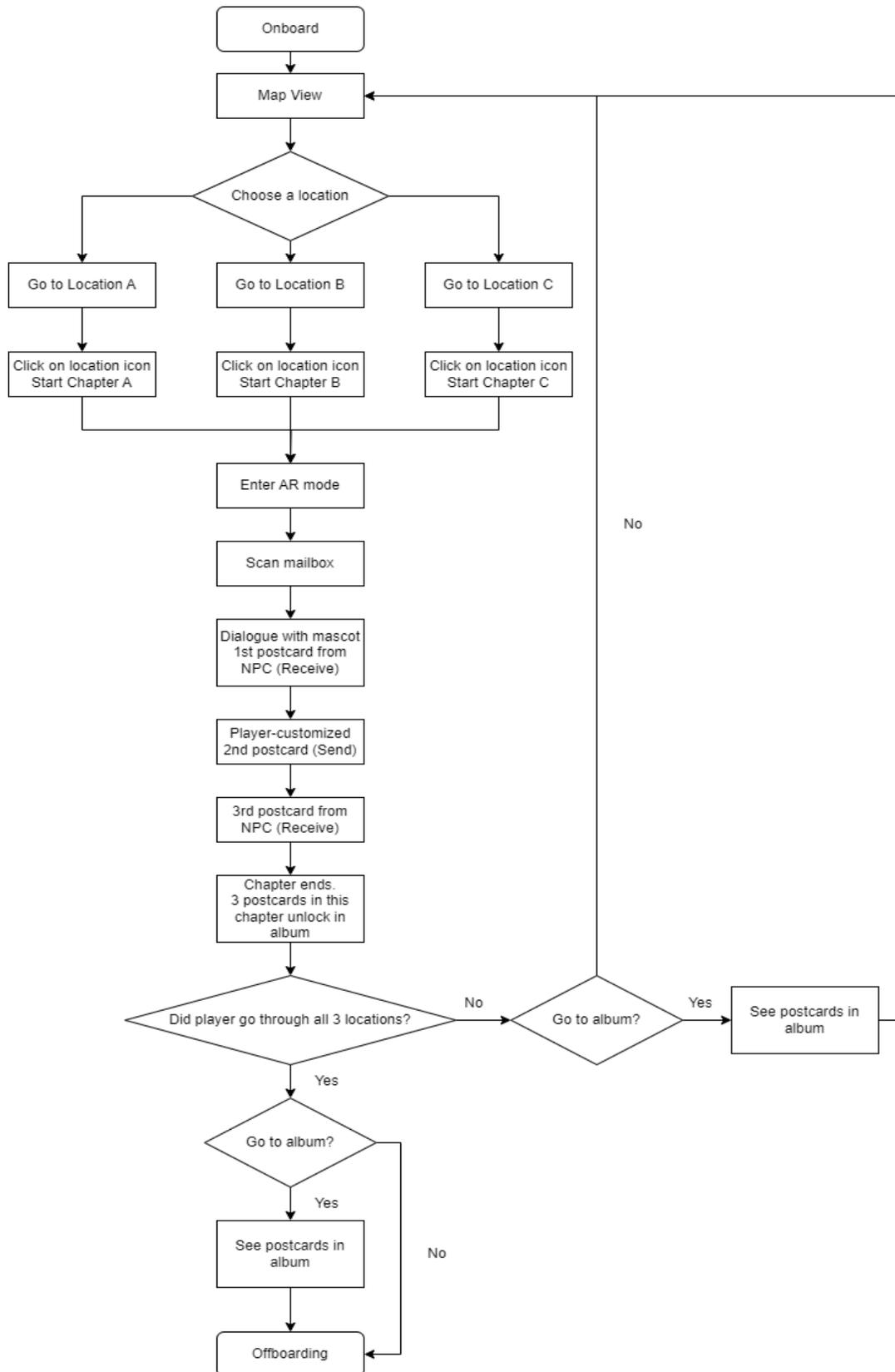
- a. **Find** and receive an **AR postcard** that is sent from a character(NPC) from the past from the magical mailbox.
- b. **Reply** to this postcard by **customizing** the contents at the front and back of the postcard.
- c. **Receive** another postcard from the NPC from the magical mailbox which **reveals more stories** about the NPC and the location.

For general game flow, players will:

1. Onboarding: Player learns the backstory from 2 characters that the game is in a magical setting, and a magical messenger mailbox who is an important role in the game will be introduced to the player.
2. Player enters the map view, and sees 3 locations on the map. Each location represents a chapter in the game.
3. Player chooses a location and heads for this location.
4. Then the player will choose one of those locations and head for this location.
5. Once the player is close to the location and clicks the icon of this location in the game, they can start this chapter.
6. Player will enter AR mode to scan the surrounding environment. After scanning, an AR magical messenger mailbox will pop up on the screen, and the player can have a conversation with this mailbox.
7. The mailbox will tell the player that there is a postcard from the past that needs to be replied by the player. An AR postcard will be presented to the player.
8. Then the player will start interacting with the postcards. To interact with the postcards, player will:
 - a. View the 1st postcard which is sent from the character(NPC) from the past. By clicking on the [Flip Button](#) or [swiping](#) the postcard, the player can view both the front and back of the postcard. To read the contents on the back of the postcard clearly, the player can click on the text and enter [Read Mode](#).
 - b. After reading the first postcard, the player can start replying to this postcard.
 - i. First, the player needs to [take a photo](#) for this location as requested. This photo will be used as the front picture of the postcard.
 - ii. Next, the player can [choose a preferred stamp and reply](#) from multiple choices for the contents on the back of the postcard.
 - iii. Players can retake photos and revise contents before submitting this postcard to the mailbox.

- c. After the player sends their reply postcard to the character. The player will receive a 3rd postcard from NPC. Player can view this postcard with the same interactions with the 1st postcard. More stories will be revealed by this postcard.
9. When the player successfully sends and receives all of those three postcards, player finishes this chapter and can go to the album to check the postcard collected.
10. Then the player can choose other two locations when they go back to the map view, and go through the same steps listed above.
11. Once the player goes through all of the 3 places, the game starts offboarding.
12. Offboarding: Characters that appear in onboarding will express their gratitude to the player.

General Game Process Flowchart



Postcard Interaction

After player scans the mailbox and has a conversation with the mascot, player will receive a first postcard from a NPC who has connections to this location in game. This is where interaction with the postcards starts, and each step of what the player needs to do (abbr. Mission) will be displayed in the corner of the screen.

1st Postcard

Description

This postcard is sent to the player by a NPC, which reveals a story that is related to the NPC and the location. The postcard and the mascot will imply the player to take a photo for a certain location and reply to this postcard.

| | |
|----------------------------|---|
| Who sends this postcard | A NPC who has connections to one of the three locations in game (abbr. NPC) |
| Who receives this postcard | Player |

Interactions

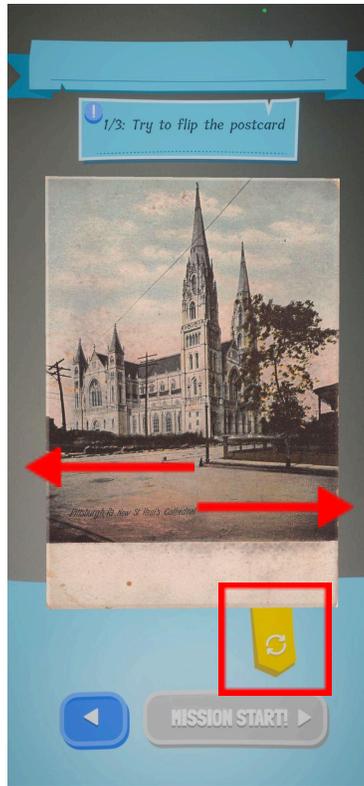
The front of the postcard will be enlarged and displayed vertically in the center of mobile phone's screen after clicking the postcard icon in front of the mascot.

Flip

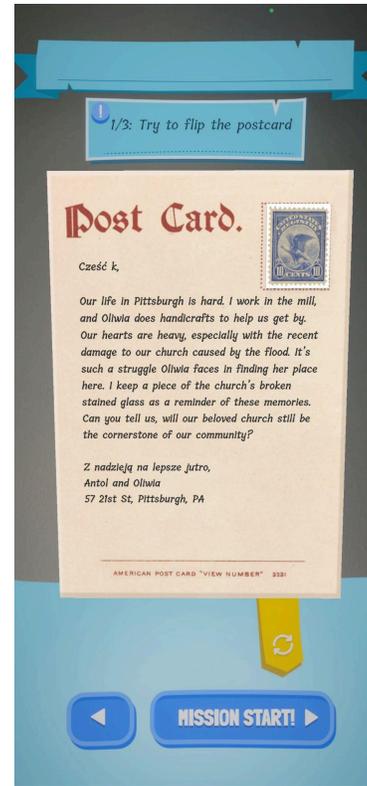
While displaying both the front and back of the postcard at the same time on a mobile phone screen makes the postcard extremely hard to read, we decided to place only one side of the postcard in portrait view, enabling the postcard to be as large as possible on a mobile phone screen.

Therefore, in order to enable the player to view both front and back of the postcard, there is a flip button below the postcard. The default view of the postcard is the front of the postcard, and when the player hits the flip button, the postcard will turn around and display the backside with narrative on it. Player can click the flip button again to turn it back to the front side.

To enhance user experience, we've also incorporated a feature that suits the common hand gesture of swiping. Now, players can simply swipe left or right on the screen to flip through postcards, mirroring the familiar action used in navigating electronic books.



Swipe or click Flip Button to flip postcard



View the back of the postcard

Rotate Postcard

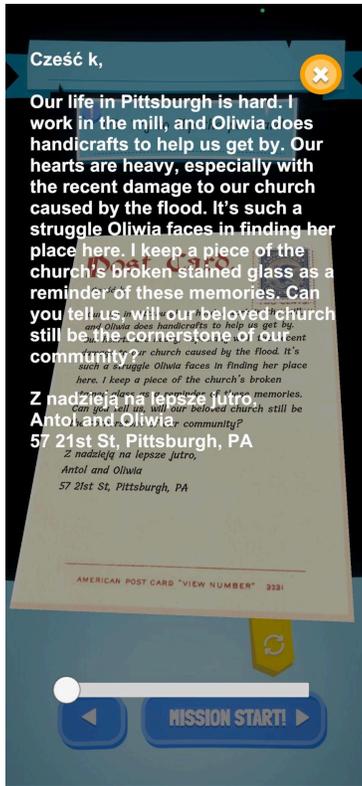
Using the accelerometer (gravity sensor) inside the phone, when the player slightly rotates the phone, the postcard will also rotate and follow the rotation of the smartphone as if the player is really holding a postcard and can take a look at it. The rotation angle of the postcard is limited to a certain range in order to avoid the misarrangement of the direction of the postcard, and it is applicable to both front and back of the postcard.

While rotating the postcard may affect text reading on the back side of the postcard, there will be another button called **Lock Rotation** next to the Flip button. If the player doesn't want the postcard to rotate, the player can click this button and then the postcard will face the player all the time.

Read Mode (On the back of the postcard)

A hand-written font of the content will be displayed on the backside of the postcard. As the text might be small and hard to read in a hand-written font while we would still like to keep the font because it enables the postcard to feel authentic, we decided to have a **Read Mode** for the player to read the content on the postcard more clearly.

To enter the Read Mode, the player needs to click on the text area, and a transparent gray interface will hover over the screen, with the content with a standard font displaying in the interface. There is a slider on the bottom of the screen, and the player can adjust the slider to increase and decrease the text size to resize the text to a preferred size.



Default text size



Increase text size

2nd Postcard

Description

This postcard can be customized and sent by the player as a reply to the first postcard. The player needs to take a photo of a desired location, choose a stamp, and choose a reply message to create a postcard.

| | |
|----------------------------|--------|
| Who sends this postcard | Player |
| Who receives this postcard | NPC |

Interactions

Take Photo

After the player reads the first postcard, the player can start their mission of replying to this postcard. Firstly the player needs to take a photo of where this story is talking about, and an interface of camera view will be provided. After the player finds the location and presses the 'Confirm' button, the photo will be taken and be used as the front picture of the postcard.

After the photo is taken, there will be a preview of the photo, and the process will move forward if the player is satisfied with the photo. If the photo taken is not satisfied, the player can go back to the previous stage and retake the photo until a satisfied photo is taken.



Interface of taking a photo



Preview after photo is taken

Reply (On the back of the postcard)

Next step after the photo is drafting the content on the back of the postcard. Once the player proceeds to this step, the back side of the postcard will be displayed with **4** options of post stamps and **3** reply choices for the player to choose. Each option will have a simple description that indicates the theme of the reply, and after the player chooses a reply and a stamp, the player can review the postcard with the chosen stamp and full content of reply with the same interactions of [Flip](#), [Rotate Postcard](#), and [Read Mode](#) as in the 1st Postcard.

Similar to the interactions in Take Photo, if the player is not satisfied with the stamp style and content, the player can choose to go back and customize the back side of the postcard again.



Customize player's postcard



Preview after making a choice

3rd Postcard

Description

This postcard is from the NPC that replies to the 2nd customized postcard sent by the player, serving the function of revealing more stories about the NPC and the location.

| | |
|----------------------------|--------|
| Who sends this postcard | Player |
| Who receives this postcard | NPC |

Interactions

Basic interactions like [Flip](#), [Rotate Postcard](#), and [Read Mode](#) are the same as the 1st Postcard.

Depth Space/Fake Interior

Taking inspiration from Moncage, which is a puzzle game that uses optical illusions. In this game, each side of the cube displays a different '3D' space for the player to explore and find clues to solve puzzles.

In our game, the picture on the front side of the 3rd Postcard is different from the 1st and 2nd postcard, in which there is a depth effect created by using Unity Shader Graph. It looks like there is a space in this postcard, while the player rotates the postcard, the player can see the

interior of this space. However, if the player tries to rotate the postcard at a larger angle to see if there really is a space behind the postcard, they will find that there is no space but the backside of the postcard behind the postcard.

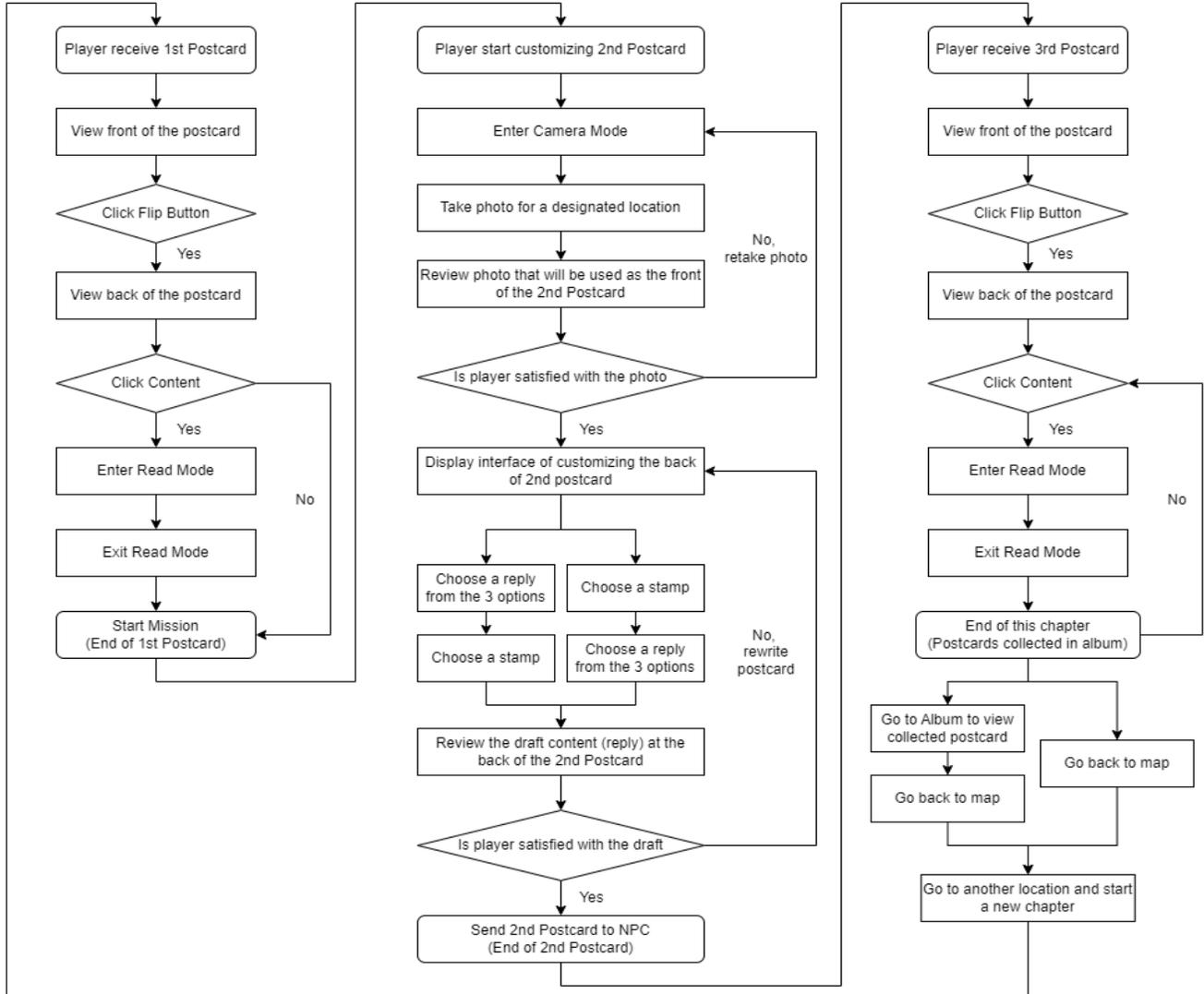


View Pennsylvania Macaroni Company's interior from different angles

After the player reads this postcard, the player finishes this chapter, and all of the 3 postcards mentioned above will be collected into the **album**.

Postcard Interactions Flowchart

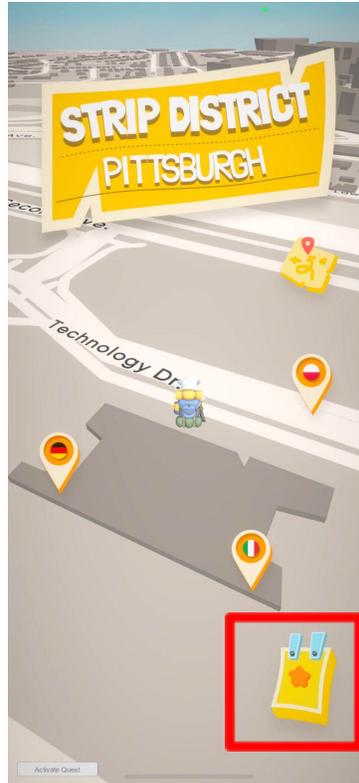
For each postcard, the postcard interaction flow is:



Album

Go To Album

Players can go to the album by the **Album Icon** in the main interface (map view).



Album Icon (Bottom Right Corner)

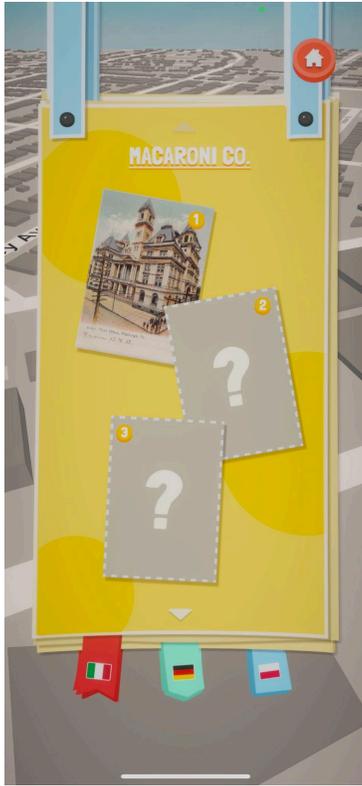
Postcard Collection

The 3 postcards that have appeared in each chapter will be collected into the album **after they finish each chapter**. This means players cannot view the postcards in the chapter unless they finish the chapter.

Exiting the chapter and returning to the main interface while playing through a chapter does not enable the player to view postcards they have already seen in this chapter in the album.

However, this doesn't mean that the player has to stay in the chapter and must not exit the chapter because the game has auto-save functionality.

Postcards not yet collected in the album will appear gray, marked by a central question mark, and cannot be viewed, meaning the player hasn't found these postcards.



Album before finishing a chapter

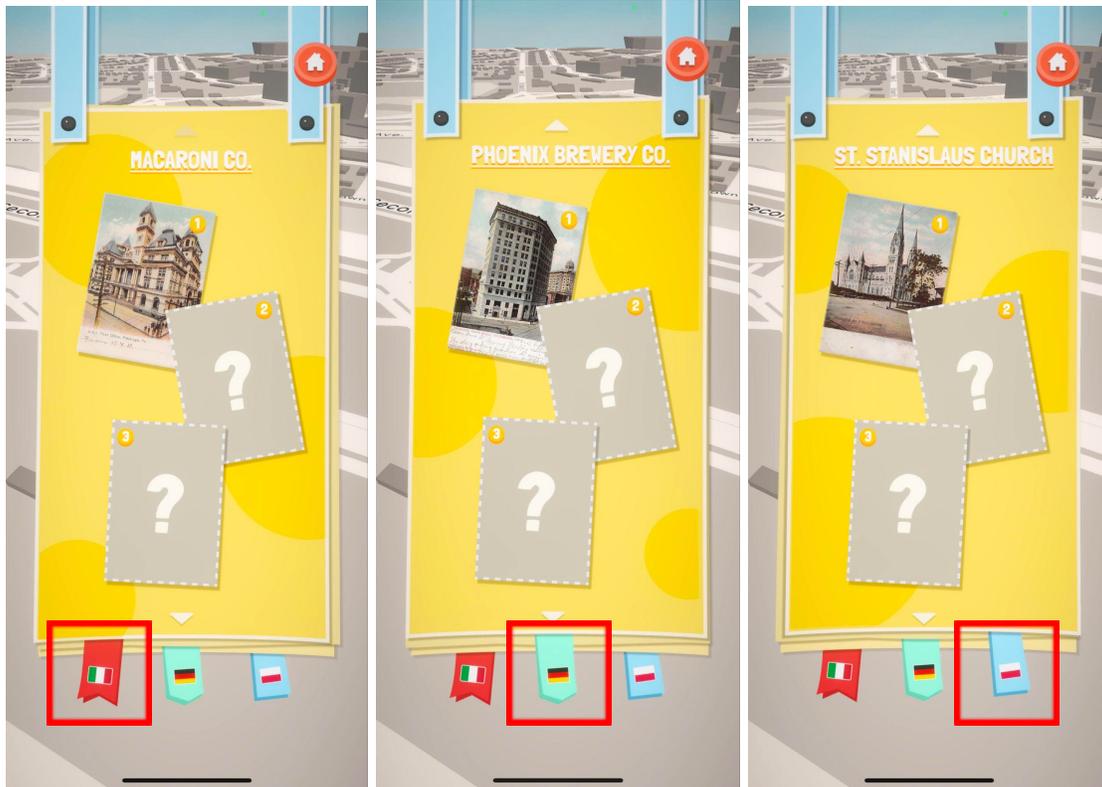


Postcards collected after finishing a chapter

Interactions in Album

Tabs

There will be 3 tabs at the bottom of the album. Each tab has an icon that represents a location and the related culture. When the player clicks on the tab, postcards related to this location will appear on the screen.

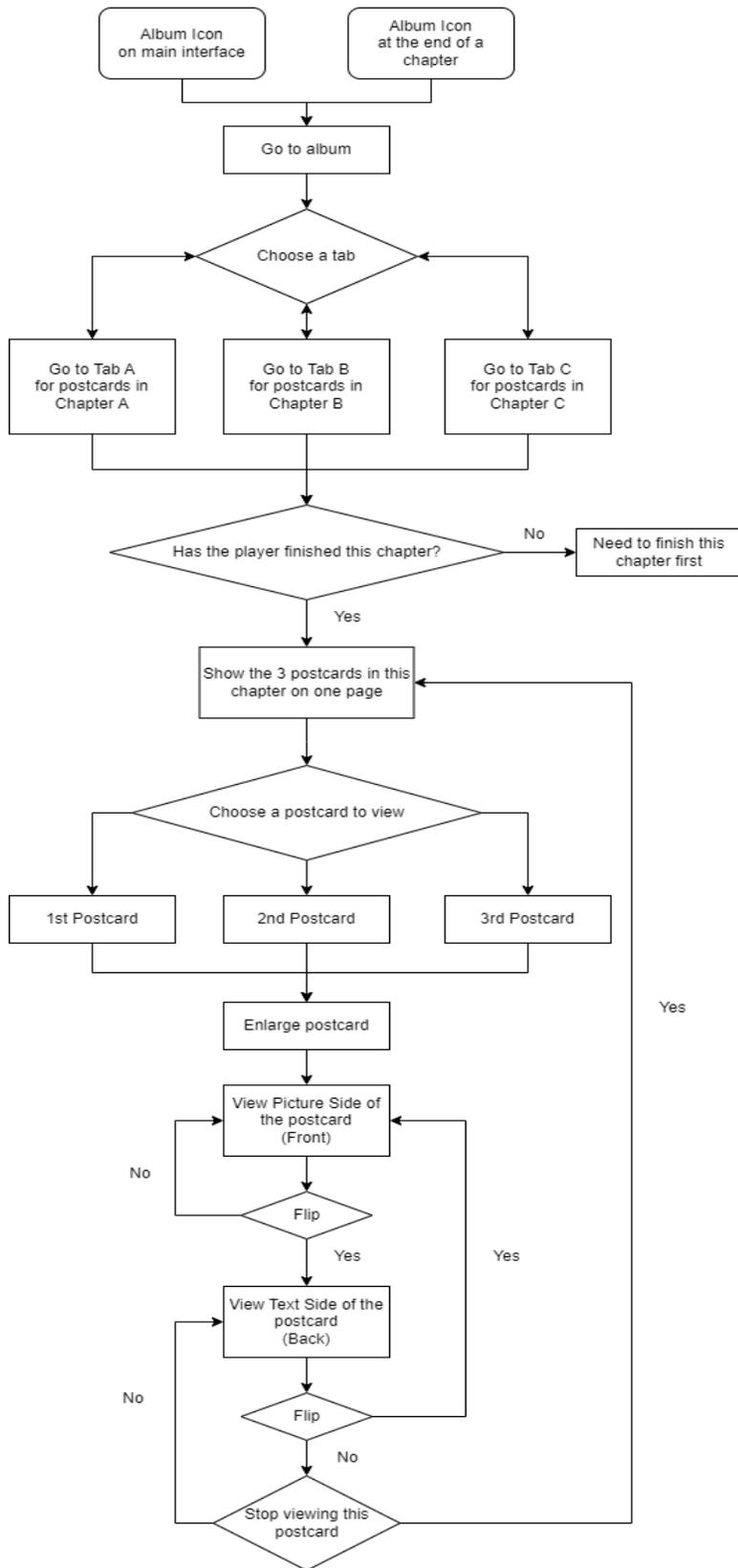


Tabs that represents different cultures

Postcards in Album

Each chapter's three postcards are displayed on a single page. Clicking on a postcard enlarges it, allowing the player to flip it over to view the images on the front and read the text on the back.

Album Interactions Flowchart



Deluxe Gameplay

We have more deluxe design concepts that haven't been implemented into our game yet as we are balancing our objectives and constraints as well as setting up priorities during the semester. However, we would like to share our possible deluxe gameplay design concepts in this section to show the possibilities of the future of our game.

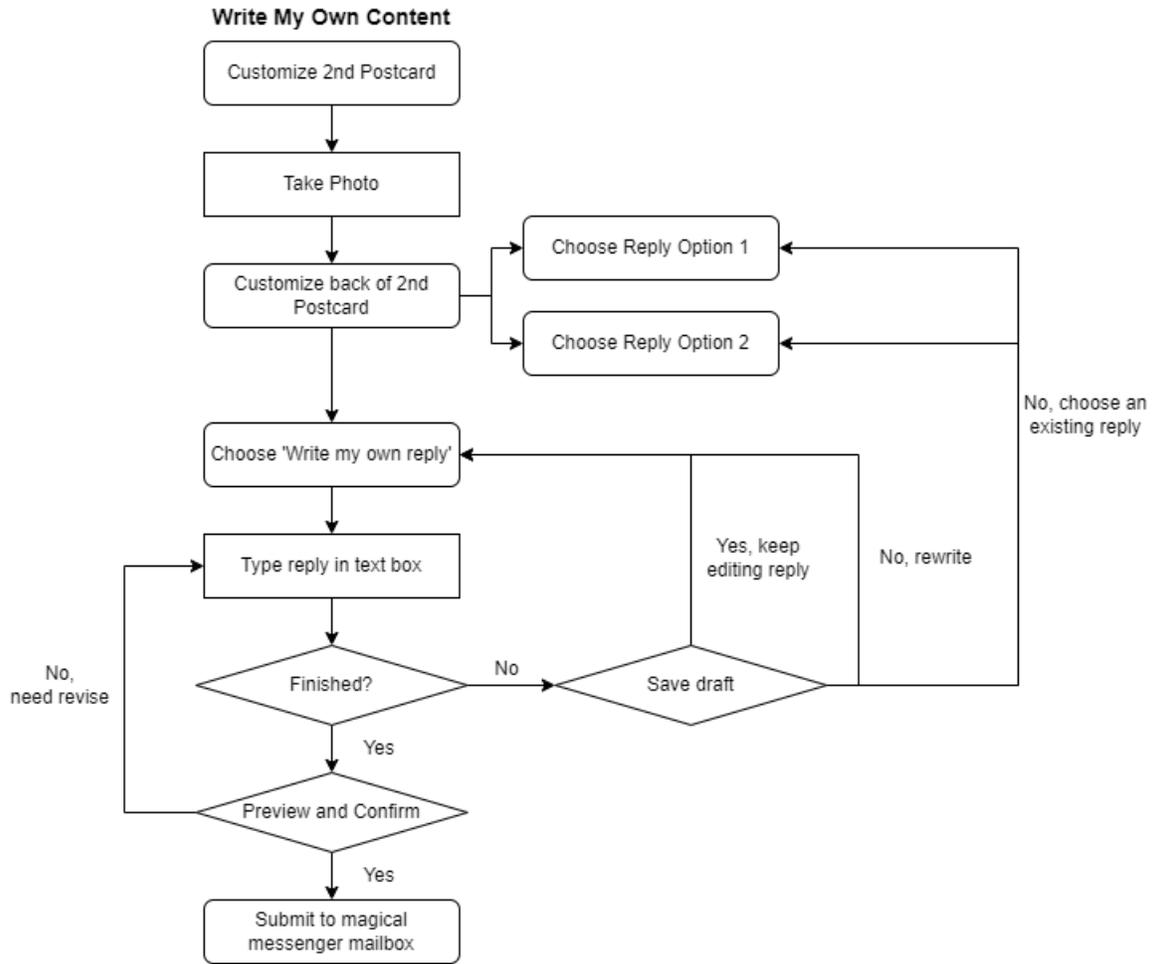
User & AI Generated Content

As we have mentioned in previous gameplay, players can choose their preferred reply from 3 reply options when they are customizing their 2nd Postcard. However, some players might think those replies are not representing their thoughts, and in order to enhance the game into a more immersive experience, they would like to write a reply for the 2nd Postcard themselves.

Therefore, in this case, there are **two separate ways** players can write their own reply on the postcard.

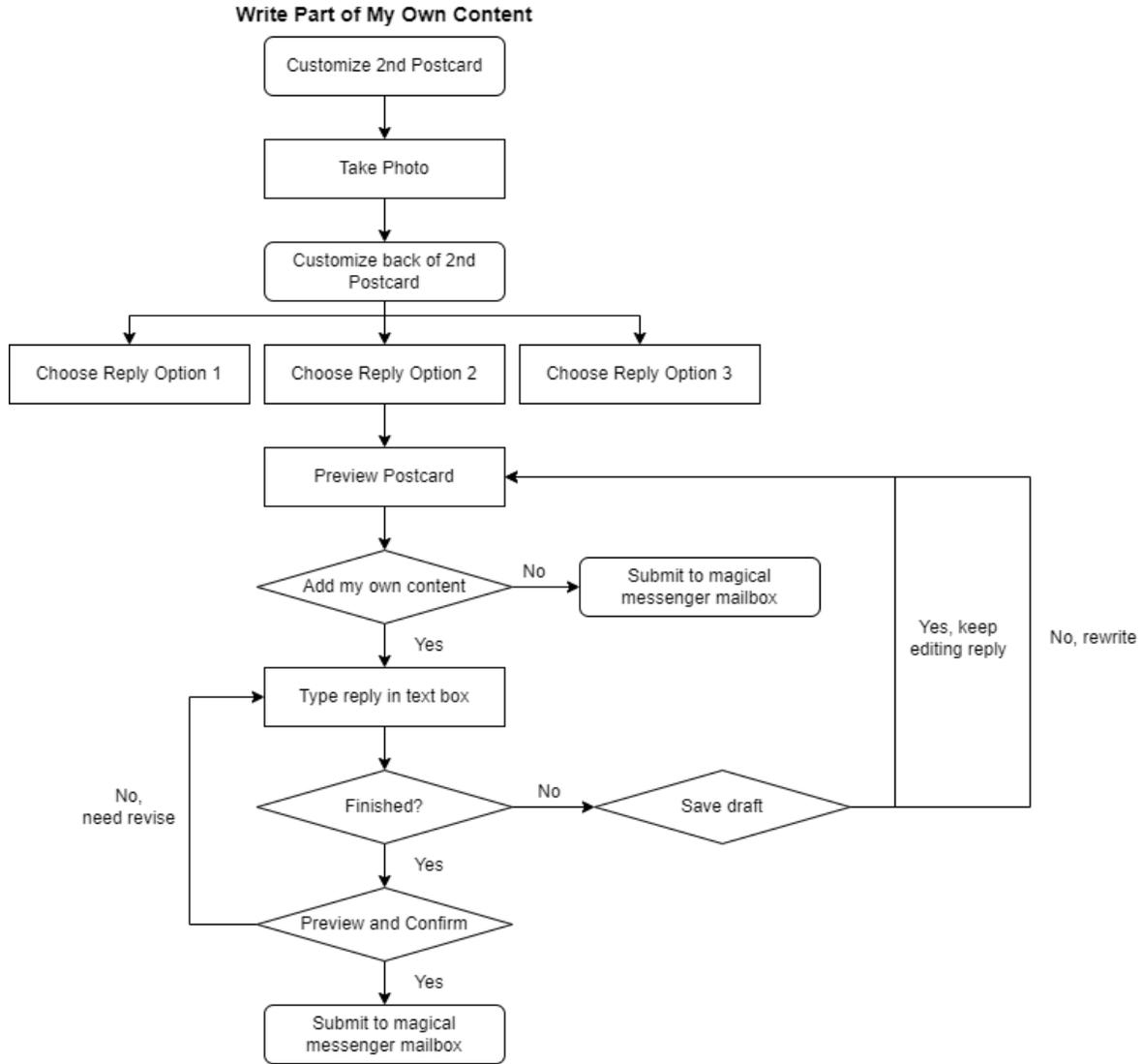
UGC1: Write My Own Content

Instead of displaying 3 reply options in the reply interface, the 3rd option will be replaced as "Write my own reply". If the player chooses this option, an empty text box and a default keyboard of the player's smartphone will appear as a hover above this interface, and the player can write their reply by typing or using voice typing function on the keyboard. Players can save the draft while writing their content, and if they finish writing, they can choose to check details to preview before submission, which is the same as the way the 2nd Postcard is submitted in the game currently.



UGC2: Write Part of My Own Content

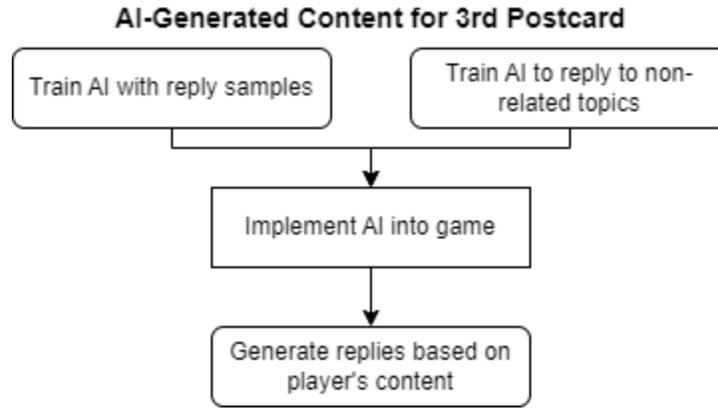
Different from 'Writing My Own Content', writing part of the content means the player can still choose the reply options in the game, and add what they would like to say after the content of the reply options. Therefore, instead of writing a full reply by the player themselves, which might be time-consuming to draft and complete a long paragraph, the player can add their thoughts based on the existing reply on the postcard. What the players have written will be added to the section after the existing reply chosen by the player.



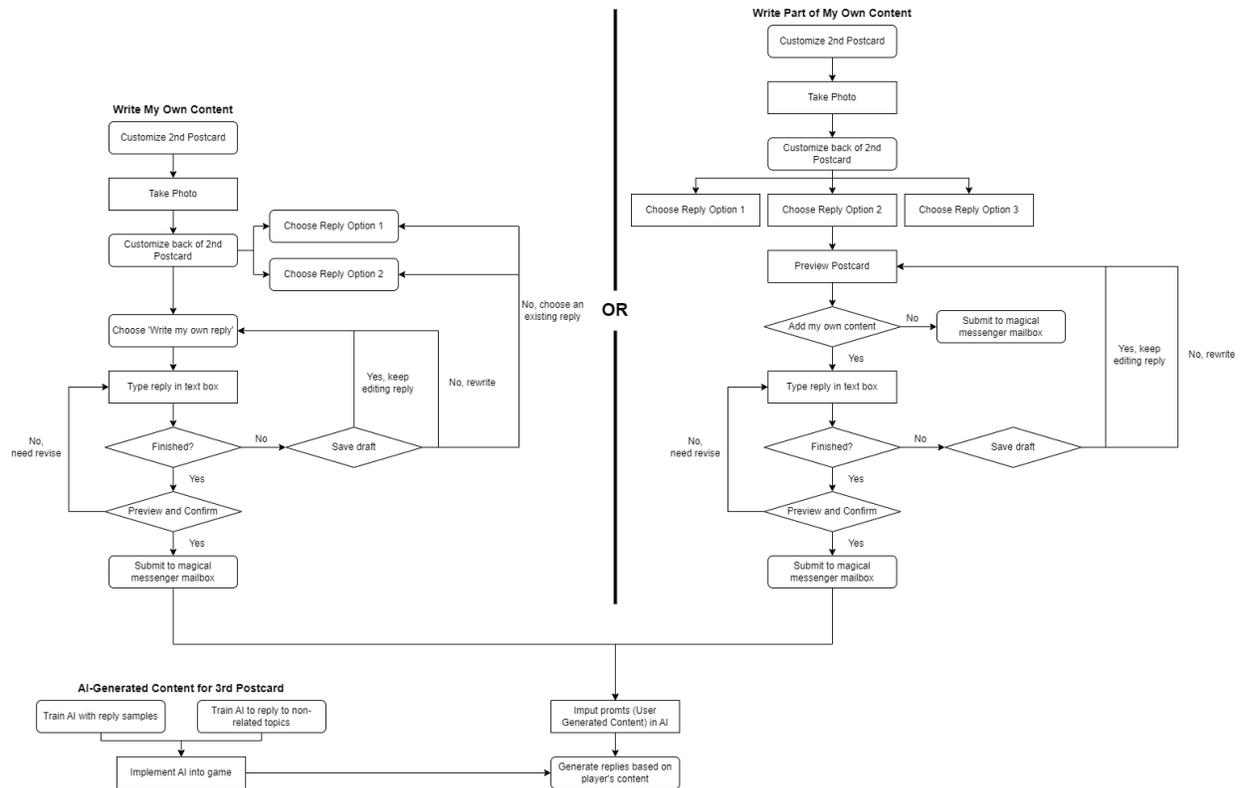
AI-Generated Content

Since the players might write different replies on the 2nd Postcard, a fixed reply on the 3rd Postcard could be disconnected and confusing to the player. Therefore, implementing AI into the game can help generate related replies based on contents generated by the player. Firstly, to generate a paragraph that is related to the stories in the game, AI can be fed several reply samples and train it to reply contents based on the samples. Also, training AI to reply to unrelated topics is also needed because players might write nonsense in the reply. For example, if the player writes 'What is your favorite video game?' in the 2nd Postcard as a reply, AI needs to reply 'I don't know much about video games, but I can tell you more about ... (Related stories trained with samples which is mentioned in the last paragraph)'

Once AI is trained, it can be connected to the game and generate contents that can reply to each player's reply.



Full User & AI Generated Content Flowchart



Online Community

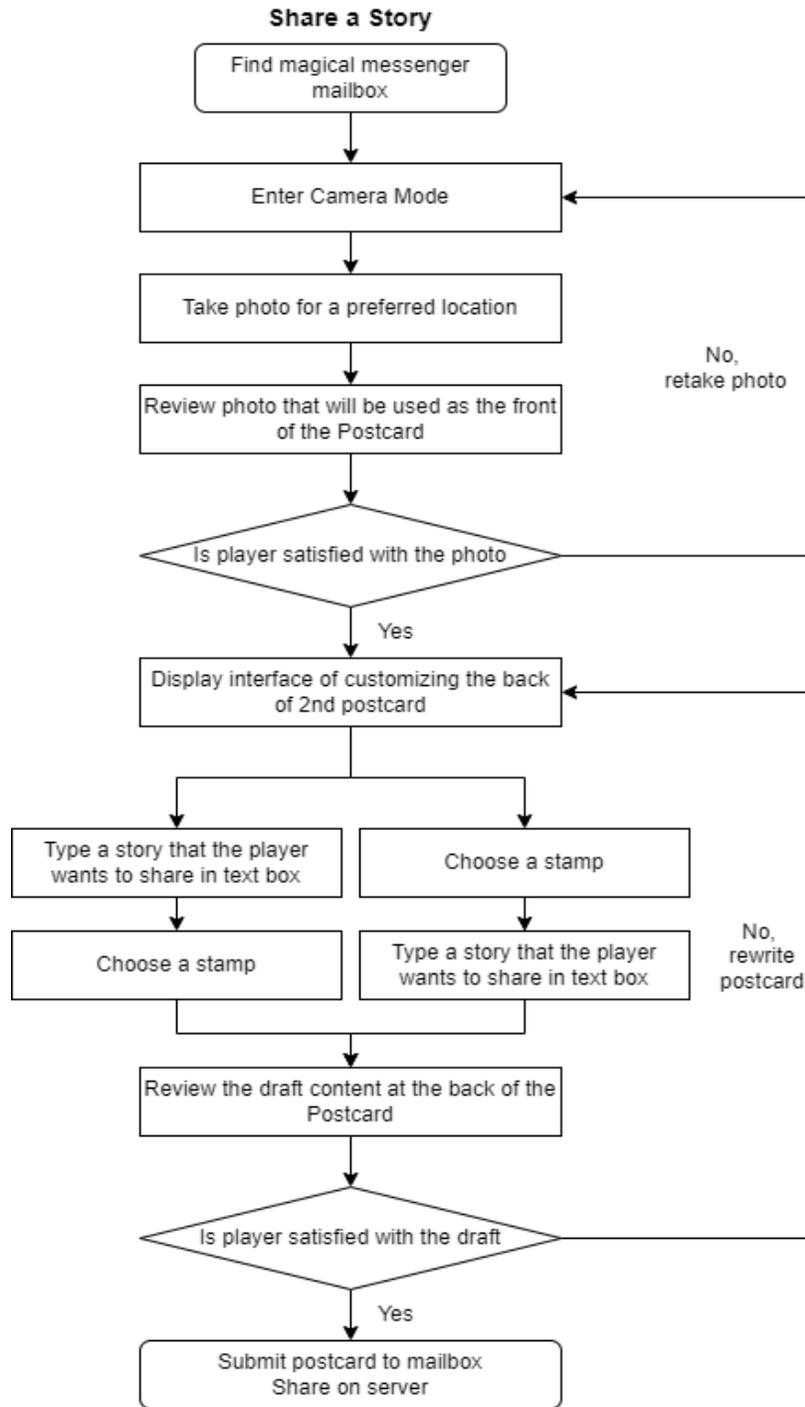
Instead of postcrossing with virtual characters, there are possibilities that players can exchange postcards between each other, and a community can be built within the game. Although setting up a server for online gameplay would be hard to implement into the game within the semester, we will present this deluxe gameplay design concept in this section.

In this function, the album plays an important role because it shows a collection of other players' postcards. In this situation, the album will have three more sections, 'Share Stories', 'Quest',

and 'Like'. Among those sections, 'Share Stories' and 'Quest' sections are online communities where players can share stories and reply to other players. 'Like' section will be a section for each player to collect the postcards they are interested in.

Share a Story

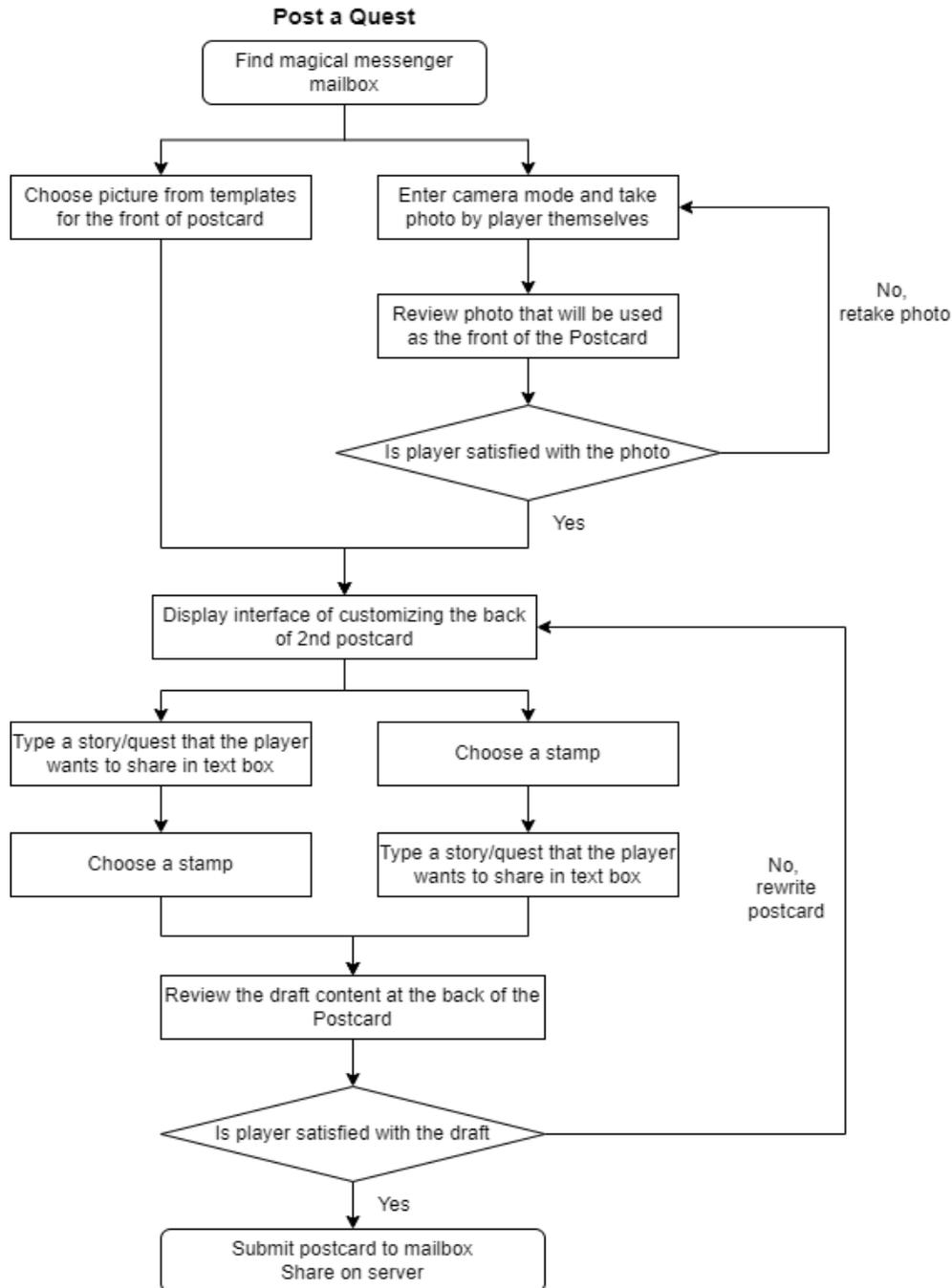
If the player would like to share a story of a history or a small historical fact about a location, they can use AR interaction to find the magical messenger mailbox first, talk to the mascot and choose to share a story by creating a postcard. Similar to the 2nd Postcard in the current game, the players can take a picture of the location first, and then choose a stamp and write contents on the back of the postcard. After they submit the postcard to the magical messenger mailbox, this postcard will be sent to the server and be viewed by other users.



Post a Quest

If the player would like to see a view and learn more about a location that they haven't ever visited or they used to be there but have left this location at some point. They can talk to the mailbox, send a quest postcard to the community and have someone at that location help take a photo and write a reply to this postcard.

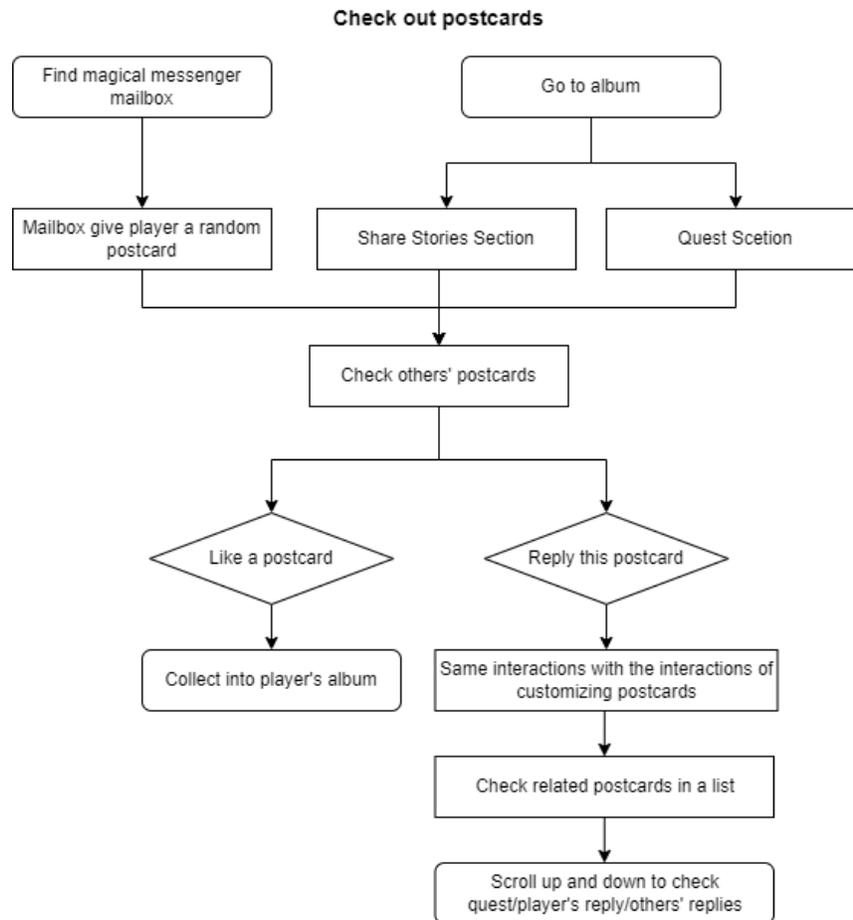
To post a quest postcard, the player can take a photo or choose a picture from the templates as the front of the postcard. On the back of the postcard, the player can choose a stamp and write their request on the back of the postcard, for example, 'I could still remember the days when I went shopping with my parents at Pennsylvania Macaroni Company when I was a child. How is it now?' Once it is posted on the server, other players who are at this location can check it out and help take a photo and write a reply to this postcard.



Check Out Postcards

To check another player’s postcard, the player can enter AR mode to talk to the magical messenger mailbox and ask the mailbox to randomly give the player a postcard. Then the player can choose to write a reply to this postcard.

To view all of the postcards that are posted in the game, the player can go to the album and find the sections of ‘Share Stories’ and ‘Quest’. Similar to regular social media, the player can scroll down to view the postcards that are posted by other players. If a postcard is connected to other postcards, such as replies to other postcards, those postcards will also be presented to the player, and the player can scroll up and down to check out previous and later postcards. Players can choose to ‘Like’ postcards that are posted by other players or ‘Reply’ to this postcard if they would like to share more about other player’s sharing. If a player likes a postcard sent by other players, they can collect those postcards into their own album in the ‘Like’ Section.



Full Online Community Flowchart

Online Community

