mosaicly

Release 1.0 Summary

Product name: Mosaicly

Team name: Mosaicly Team

Revision number: 2

Revision date: June 3rd, 2025

Key User Stories and Acceptance Criteria

User Story 1.4 App Pages and Canvas UI

- **Description:** As a user, I want to see a home screen, about page, backup code page, and a login page (or settings page if I'm signed in). When I open a canvas via either a QR code or by typing in a backup code, I want to see a canvas that I can draw on, with an organized layout, so I can navigate the application easily. I also want any error messages or warnings to pop up if I can't draw on the canvas for whatever reason.

- **Acceptance Criteria:**
    - All pages are able to be navigated to without manually changing the URL
    - All pages are safe to use and do not display errors unintentionally
    - If there is something wrong (such as being too far away from a canvas), these should be shown clearly and understood by the user easily.
    - Users are navigated to error pages for general errors such as 404, 403, 500 with clear descriptions of what went wrong and what they can do.

User Story 2.1: Canvas Functionality (Visuals and Controls)

- **Description:** As a user, I want to use a canvas that I can navigate and draw on with different colors so I can see other people's interactions and have different ways of expressing myself.

- **Acceptance Criteria:**
    - Draw on a canvas with selected color and see the pixel with the same color
    - Have zooming, panning, and swipe/drag-to-draw capabilities that work for mobile and for a desktop computer

User Story 3.2: Canvas Real Time Updates

- **Description:** As a user, I want to be able to see who is interacting with the canvas in real time so I know I am having real interactions with other people.

- **Acceptance Criteria:**
    - Pixels drawn on a canvas can be seen on the other users' canvases in real time
    - Other users' pixel edits can be seen on your screen in real time
    - Reloading the page loads in all the pixels from all users who have made changes to the canvas, using the most recent state of the canvas

User Story 4.1: Canvas Location Tracking

- **Description:** As a user, I want to be able to see my location and distance from different canvases so I can tell where to locate them.

- **Acceptance Criteria:**
    - Show user location using Mapbox
    - Allow nearby canvas' to be accessed and show an error if too far away from a selected canvas
    - Have errors for lack of location permissions

User Story 4.2: QR Code Generation

- **Description:** As a user, I want to be able to share my canvas with others so other users can interact with it

- **Acceptance Criteria:**
    - See a QR code based on their newly created canvas
    - Get an image and/or pdf of their QR code to print out for later

Known Problems

Bug #1: Canvas Syncing Consistency

- **Description:** Sometimes when one device's network is bad, the real time connection drops and the state of everyone's canvas gets out of sync. The result is that one person will have a more up to date version (the one with the laggy internet connection) and everyone else will have the old version (since the data is not transmitted yet). And even when the lagged person's internet comes back online the lost and locally cached data is not re-transmitted.
- **To Reproduce:**
    - Open the website on two devices, letting one view the canvas while the other edits
    - Edit the canvas on the device for editing
    - At some point if an unstable connection drops, a couple pixels might not appear on the viewing device while the editing device has it. However, if the viewing device refreshes, the missing pixels come back.
- **Expected behavior:**
    - When the network is lost on the editing device, any local changes made should be re-transmitted as draw signals (with the commit time). The optimal scenario is the last writer wins, and each device should be keeping track of the current state of their canvas. If any re-transmitted trumps the current data in terms of time, then they get priority and gets written to the database and synced across everyone's device.

Future Product Backlog

User Story #1: User Moderation
- **Description:** Allow user content moderation to prevent inappropriate content like ruining art or harassment
- Allow for users to block user from their canvas or report other users for constant misuse

Bug Fix #1
- **Description:** Fix Bug #1 described under the Known Problems section