

## Sprint Reflection

### Features, Assumptions & Decisions Made During Development

- **User Authentication**
  - Relied on Django's built-in authentication framework.
  - Assumed users would log in using a username and password.
  - Believed Django's authentication system is secure and sufficient after reviewing its specifications.
- **Security Measures**
  - Assume that using Django's default password hashing algorithm adequately secures user passwords.
  - Enabled CSRF protection to guard against cross-site request forgery.
- **User Interface and Interaction**
  - Expected that users would access the site via a web app using either a mouse on a laptop or a touchscreen on mobile.
  - Assumed that a successful login would redirect users to a dashboard or homepage.
- **Backend and Database:**
  - Assumed the database could handle the expected query load efficiently.
  - Considered the backend's reliability crucial, particularly before the first sprint review, as other components depend on it.
- **Prototype Development:**
  - Decided that card images for the prototype would be generated by AI to save time.
- **QR Code Feature:**
  - Initially found it challenging to pinpoint where to implement QR codes.
  - Focused on attaching QR codes to website pages, enabling users to scan and navigate automatically, and set up specific folders with auto-generated HTML templates for each page.
- **Frontend-Backend Integration:**
  - Assumed connecting the frontend to the backend would be straightforward since both were to be developed concurrently.
  - Later realized that the integration required deeper knowledge of multiple frameworks and effective collaboration within a large team.

### Challenges Faced During Development & Rectifications

- **Merge Conflicts & Git Workflow:**
  - **Challenge:** Frequent merge conflicts occurred due to a file re-structure and branches falling out of sync with the main branch.
  - **Rectification:** Resolved conflicts manually and adopted a more robust Git workflow by:
    - Initiating pull requests from feature branches.
    - Merging main into feature branches before the final merge.
    - Increasing branching discipline and avoiding direct changes to main.
    - Enhancing communication via detailed Kanban board updates and more frequent standup meetings.
- **Django Infrastructure & Lack of Prior Experience:**

- **Challenge:** Initial unfamiliarity with Django made it difficult to adjust the project's infrastructure, particularly for user authentication and verification.
- **Rectification:** Overcame this by:
  - Studying Django documentation and following multiple online tutorials.
  - Gaining practical understanding of Django's project structure and its authentication system.
- **Front-End Development:**
  - **Challenge:** Inexperience with front-end development posed difficulties in creating the landing page HTML.
  - **Rectification:** Addressed this challenge by:
    - Learning key concepts through online tutorials, especially using Bootstrap.
    - Receiving valuable guidance from team members, notably assistance from Julio on landing page code.
- **Login Redirect Issues:**
  - **Challenge:** The login page was not displaying an error message upon incorrect login attempts.
  - **Rectification:** Identified and resolved the issue by debugging the redirect logic and implementing appropriate error-handling mechanisms to ensure users receive feedback when authentication fails.

### **Future Development of Existing Capabilities & New Features for Sprint 2**

- **Account Security Enhancements:**
  - Implement forgot password functionality
  - Enable user account deletion
  - Add brute force/DoS protection, email verification, and two-factor authentication
- **UI/UX Improvements:**
  - Enhance landing page with animations, loading indicators, and interactive elements
- **Backend & Data Integrity:**
  - Increase database validation and automate tests
  - Extend card model attributes (e.g., cost, theme, artist)
- **Feature Expansion:**
  - Introduce booster pack creation for gamemasters
  - Enhance dashboard with inventory/gallery, battle system, and settings menu