CS 30700: Tsundoku Product Backlog

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1. Problem Statement

Existing book cataloging apps such as Goodreads and The StoryGraph are well-known for having boring design and clunky or lacking features–Goodreads’ homepage is overwhelming with lots of text and inconsistent margins; there are many advertisements that take up the page as well. Not only can the user write book reviews and follow other users, Tsundoku is unique from these platforms because 1) the user experience will be more streamlined and 2) the user can customize their own data-input experience however they want, with statistics generated from custom attributes that users can input, such as the number of times a book made them emotional or whether or not the book had a plot twist. These custom attributes will tailor the end-of-year review and data summarization so that it best suits the user, something that other platforms do not yet do.

2. Background Information

Existing book tracking platforms, like Goodreads and Storygraph, have become far too complacent and entrenched, leaving passionate book readers out to dry. The boring design and bad user experience sours many on those platforms, but as there are no alternative solutions to tracking your reading, users have no choice but to bear these limitations and continue tracking their reading progress on those same duopolistic platforms. Tsundoku aims to solve this problem by providing users a fresh, new, ad-free experience that puts the joy back in reading and tracking useful and insightful metrics. By targeting Gen Z readers, specifically on BookTok, we’ll reach one of the largest online book communities.

While Tsundoku is similar to Goodreads and Storygraph in that users can track their reading journey, with features such as writing reviews, we aim to differentiate by providing additional parameters that will provide readers with a more in-depth insight into their reading habits and preferences. By allowing users to define custom parameters that they want to track, we can further diversify and allow the platform to suit the user. These additional metrics cannot be found in any other book-tracking platform and will be the game-changing differentiator that many users have been waiting for. All of the data and metrics will be combined and shown to users and the broader Tsundoku community with the Tsundoku Wrapped feature we are planning, which will show an aggregation of all of the tracked data on the platform given user consent.

We address our competitors’ limitations in various ways. For example, Goodreads’ homepage is overwhelming with lots of text and inconsistent margins; there are many advertisements that take up the page, and its beige color scheme is bland. Tsundoku, on the other hand, will add more visually-interesting pops of color such as hot pink and cyan, leading to a more engaging and aesthetically-pleasing design. StoryGraph’s book-tracking and review feature is inefficient and fatiguing, often requiring a lot of scrolling and clicking through multiple pages — for example, their review template comes with a very extensive list of properties and fields to fill out that becomes overwhelming, especially because they weren’t chosen by the user. Our design will streamline this process by only having two basic review properties (star rating and text review), and letting the user decide what custom properties they want to track.

In addition, by using modern frameworks and tooling that reduces the navigational complexity described above, we believe our service will be significantly easier and intuitive to use than alternative platforms. Instead of relying on multiple screens that users must tap through, we can allow users to perform gestures and do everything in consolidated pages that will reduce the aforementioned navigational complexity.

3. Requirements (Backlog)

Functional

Book tracking/Statistics

1. As a user, I would like to track books I’ve read so I can see how many books I’ve read over a certain time period
   1. As a user, I would like to remove a book from my to-read list
   2. As a user, I would like to edit the status of a book in my list as currently reading
   3. As a user, I would like to edit the status of a book in my list as want-to-read
   4. As a user, I would like to edit the status of a book in my list as completed
   5. As a user, I would like to edit the status of a book in my list as did-not-finish
2. As a user, I would like to be able to privately track books so it will still count towards my stats but other people won’t be able to see it
3. As a user, I would like to rate books out of five stars (with half and quarter star ratings) so I can remember how much I liked or disliked a book
   1. As a user, I would like to be able to edit my rating of a book
4. As a user, I would like to review books so I can remember the details of my thoughts on a book
   1. As a user, I would like to post my review so others can see my thoughts
   2. As a user, I would like to edit my review after posting it
   3. As a user, I would like to mark if my review contains spoilers or not
5. As a user, I would like to track statistics so I can see trends in my reading habits for specific aspects of books
   1. As a user, I would like to track the genres of books I have read
   2. As a user, I would like to track stats that I have created of books I have read
   3. As a user, I would like to see the page count statistics of books I have read
   4. As a user, I would like to track the year of publication of books that I have read
   5. As a user, I would like to track any custom property that I can imagine that is either numerical or categorical
6. As a user, I would like to view private notes about a book
7. As a user, I would like to edit private notes about a book so I can record my thoughts regarding the book without anyone else seeing it
8. As a user, I would like to create my own custom properties (such as “character lovability”, whether this reading session made me emotional, etc.) to track for books so I can track what matters to me specifically. These properties would be either numerical, categorical, or boolean data.
9. As a user, I would like to create different review templates with custom properties so I can customize my reviews depending on the kind of book I read. For example, I could create a “romance novel review template” with properties such as “how many times I cried”

Social

1. As a user, I would like to be able to view other users’ profiles so I can see what other people are reading
   1. As a user, I would like to be able to view other users’ books they are currently reading
   2. As a user, I would like to be able to view other users’ reviews
   3. As a user, I would like to be able to view other users’ books they have already read
2. As a user, I would like to follow other users so I can see what my friends are reading
3. As a user, I would like to follow authors so I can stay up-to-date on their activity
   1. As a user, I would like to see a list of an author’s books on their profile
   2. As a user, I would like to see a list of books an author has read on their profile
4. As a user, I would like to receive notifications about my friends’ activity on Tsundoku so I can stay up-to-date on their reading journeys
5. As a user, I would like to be able to view a marketplace of other people’s review templates so I can get new templates and see what properties people are tracking
6. As a user, I would like to be able to share my own templates to the marketplace so other people can use my templates
7. As a user, I would like to be able to view other users’ book reviews
8. As a user, I would like to be able to comment on other users’ book reviews
9. As a user, I would like to be able to upvote other users’ book reviews
10. As a user, I would like to choose who my Tsundoku wrapped can be viewed by within the app
    1. As a user, I would like to make my Tsundoku wrapped private so that only I can view it within the app
    2. As a user, I would like to make my Tsundoku wrapped friends-only so that only the people I choose can view it on my profile
    3. As a user, I would like to make my Tsundoku wrapped public so that anyone on the app can view it on my profile
11. As a user, I would like to export my Tsundoku Wrapped (yearly statistics of my reading behavior) as a photo to share on social media platforms (like Instagram and Snapchat)
12. As a user, I would like to create social reading challenges
    1. As a user, I would like to create friends-only reading challenges so my friends and I can participate in that challenge
    2. As a user, I would like to create public reading challenges so that everybody can participate in the challenge
13. As a user, I would like to create book clubs, or groups of users
    1. As a user, I would like to (re)name a book club that I create or am a part of
    2. As a user, I would like to view the book clubs that I am a part of
    3. As a user, I would like to invite users to join my book club
    4. As a user, I would like to view a forum with posts from users in the book club
    5. As a user, I would like to comment on posts within a book club forum
    6. As a user, I would like to view comments on posts in a book club forum
    7. As a user, I would like to create reading challenges for a book club, where everyone in the book club is automatically participating in the reading challenge
    8. As a user, I would like to view the book a book club is currently reading
    9. As a user, I would like to view the dates that we are reading a book for

Other features

1. As a user, I would like to see a list of books that I have read
2. As a user, I would like to see a list of books I have privately marked as read
3. As a user, I would like to see a list of books I did not finish
4. As a user, I would like to see a list of books I am currently reading
5. As a user, I would like to see a yearly compilation of my data so I can see overarching trends and an analysis of my books and reading behaviors
   1. As a user, I would like to see my most-read genre of the year
   2. As a user, I would like to see my most-read author of the year
   3. As a user, I would like to see the month I read the most books in a year
   4. As a user, I would like to see the day that I read the most pages in a year
   5. As a user, I would like to see a graphical display of my custom properties such as “how many times I cried reading” in the year
   6. As a user, I would like to see a visual graph display (bar chart) of the number of books I read each month in the year
6. As a user, I would like to be able to search for books so I can easily and quickly find a book that I read or want to read
   1. As a user, I would like to be able to search for books listed on the Google Books API
   2. As a user, I would like to be able to search for books listed on the Open Books API
7. As a user, I would like to be able to add a book that is not available in the databases listed above
8. As a user, I would like to be able to filter a search so I can more easily find books with specific search parameters
   1. As a user, I would like to be able to filter books by genre
   2. As a user, I would like to be able to filter books by release date (most recent)
   3. As a user, I would like to be able to filter books by highest average rating
9. As a user, I would like to view book recommendations based on my reading habits and preferences so I can find new books that I love
10. As a user, I would like to update my reading preferences
    1. As a user, I would like to update my genre preferences
    2. As a user, I would like to update my book length preferences
11. As a user, I would like to import my data from other book cataloging apps such as Goodreads so I don’t lose all my old data
    1. As a user, I would like my book reviews to be imported from other book cataloging apps.
12. As a user, I would like to receive notifications
    1. As a user, I would like to keep up to date with my friends’ reading statuses
    2. As a user, I would like to see when an author I follow has a new book
    3. As a user, I would like to keep up with new features
13. As a user, I would like to create private reading challenges such as a monthly reading challenge so I can set and meet smaller goals than just a yearly reading goal
14. As a user, I would like to export my data from Tsundoku to other book cataloging apps so that I don’t feel locked into Tsundoku, and have the peace-of-mind that my data is mine to keep, at any time.
15. As a user, I would like to change the visibility of my followers list
    1. As a user, I would like to make my followers list private
    2. As a user, I would like to make my followers list friends-only
    3. As a user, I would like to make my followers list public
16. As a user, I would like to change the visibility of my following list
    1. As a user, I would like to make my following list private
    2. As a user, I would like to make my following list friends-only
    3. As a user, I would like to make my following list public

Settings

1. As a user, I would like to change my username
2. As a user, I would like to view my username and email
3. As a user, I would like to edit my email
4. As a user, I would like to set up my profile
   1. As a user, I would like to write in an “about me” section
   2. As a user, I would like to control the visibility of my profile so that
      1. Private (nobody can see my profile)
      2. only my friends can see my profile
      3. any Tsundoku member
      4. public (indexable by search engines)
   3. As a user, I would like to link to various social links (such as Facebook, Mastodon, etc.)
5. As a user, I would like the option to export my data
6. As a user, I would like the option to change the default language from English to
   1. Korean
   2. Chinese
7. As a user, I would like the option to delete my account (usernames cannot be reused to prevent abuse)
8. As a user, I would like the option to change my notification preferences
   1. As a user, I would like to turn off notifications for new books by authors I follow
   2. As a user, I would like to turn off notifications when I get a new follower
   3. As a user, I would like to receive notifications via email
   4. As a user, I would like to receive notifications via push notifications
   5. As a user, I would like to edit the notification categories that I receive

Non-Functional

### Security

1. All data is encrypted on transit, but not in storage (reduce unnecessary complexity, as end-to-end encrypted data cannot be aggregated, for example)
2. All software running on the server should be up-to-date and patched against security vulnerabilities
3. (If possible) the software updating sequence should be automated so that new patches are immediately applied to the server.
4. Collect only the absolutely necessary user data required for service
5. Authenticate all users using username and password. Usernames must be unique, and usernames can only be changed once every certain time period to prevent abuse.
6. Handle authentication with a trusted library/framework that handles all necessary security measures, such as hashing and salting. This would prevent common mistakes made that could threaten the privacy and security of users if we were to roll our own authentication solution.
7. Users should be able to reset their passwords via email.
8. Users must supply an email address during sign-up (for requirement above)
9. We should be able to quickly blacklist versions of our client applications (and ideally show the user that they need to update their app)

### Performance

1. Server response times must be under 3 seconds (in the worst case scenario)
   1. A typical server response time should (ideally) be under 1 second
2. Ideally have some sort of status page or performance monitoring software set up to detect outages and prevent slowdown of the service
3. The service must be able to serve 1,000+ concurrent users
4. Allow for manual scaling only in case of user influx and platform growth
5. The client app should perform reasonably well on old mobile devices (budget iPhones, sub-standard Android phone) and hit basic performance metrics (60 fps, no main UI thread lockups, etc.)
6. The server should implement rate-limiting to prevent abuse and bots from slowing down the service for everyone

### User Experience

1. Provide on screen contextual prompts that guide user on how to operate application
2. Mobile apps must feel very close to native while using React Native, for a cohesive and thoughtful user experience
3. Make sure that password autofill works with our app on iOS and Android
4. Provide thoughtful transitions and animations to make the app feel more responsive and seamless for users

### Accessibility

1. Comply with the accessibility standards on iOS and Android, respectively
   1. Provide contexts for screen-reader users and users with sight-related disabilities using the accessibility framework of React Native
      1. Verify that VoiceOver is working on iOS
      2. Verify that TalkBack is working on Android
   2. Make sure remove/reduce animations works with our app
   3. Make sure remove transparency/blur works with our app
   4. Make sure high contrast mode works with our app

### Developer

1. Continuous integration and deployment should be done using Docker (for the backend)
2. The mobile app should be tested using GitHub Actions (server) and respective testing apparatus on mobile platforms (Xcode on iOS and Android Studio on Android)
3. The testing coverage of the entire codebase should be over 80%.
4. Code coverage should be checked with platforms like Codecov or Coveralls