Concept of Operations

Baseball Card Collection Software
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The Current System

Many online sports card collection services exist today on all platforms. Some of these services are offered for free with ad support, while some offer paid subscription models. Most offer similar features for maintaining a collection and want list, such as custom inventory queries and relevant card information. The most popular of these services, sportscardalbum, functions like a social media website, giving collectors a live feed of other collectors' recent acquisitions and profile updates, as well as the ability to follow users, and like and share uploaded cards.

The Proposed System: Motivation

The current system is unsatisfactory for the customer as the breadth of features in most sports card collection software would negatively impact the quality of the user experience. The customer's association is dedicated exclusively to the collection of baseball cards, so features that aid in the collection of other popular sports cards and social media features would serve only to obfusticate the members' goal. Not only would the inclusion of such features clutter the user interface with information that members of the association simply don't care about, it would also bloat the repository of required card information, which makes the time to fetch any information substantially longer.

Additionally, third party card collection services must support themselves monetarily, which can lead to issues that would further degrade the quality of the user experience. The first

being that the system uses a ‘paying user’ model, in which free users are offered a version of the service with limited features and are frequently prompted to upgrade to the full featured, paid version. The pitfall of this monetization scheme is obvious, as it gives a poor first impression of the system to prospective users. The second issue arises from the ‘ad-supported’ model, in which all users have full access to the system at the cost of some of the user’s screen space being taken up by paid advertisements. This would inevitably annoy some users, which might turn them away from the clients association.

The motivation of our system would be to alleviate the issue of a bloated repository by simply doing away with features that aren’t related to baseball card collection. Removing these features would streamline both the card repository and the user interface look-and-feel. Since the customer’s association wishes to offer a card collection service to their members as a perk of membership, the proposed system shall not employ one of these invasive monetization schemes.

The Proposed System: Users and Modes of Operation

User class 1: Members

Members of the customer's association must have full access to all features of the proposed system. This includes the ability to edit their collections and want lists, as well as the ability to run queries on their collection, want list, or list of all cards.

User class 2: Non-members

Non-members of the customer’s association must have access to all features of the proposed system, however none of the data related to the non-members should remain in the proposed system’s repository, as this would bloat the repository resulting in slower searches for members and act as a deterrent to joining the association. To achieve this goal, the proposed system must allow non members to sign in as a guest, giving them access to a pre-built temporary collection and want list so that they may evaluate the association’s system.

Mode of operation 1: Collection

The proposed system shall provide members and non-members with an inventory of all of their currently owned cards. Users must be able to view their collection, add a card to their collection, remove cards from their collection, and view information related to each card.

Mode of operation 2: Trade list

The proposed system shall provide members and non-members with a list of cards that they are currently seeking. The trade list will be structured similarly to the collection, with the

removal of information that does not pertain to unowned cards (such as date obtained or condition).

Mode of operation 3: Cards list (all cards)

The proposed system shall provide members and non-members with a list of all cards currently contained in the card repository. Users must have the ability to query cards based on information such as team, price, year/range of years, and card number.

The Proposed System: Operational Scenarios

When the user first opens the proposed system they will be directed to a login page where they will have the ability to enter login info, sign up for membership, or retrieve a forgotten password. Additionally, there will be an option to sign in as a guest for non-members. An invalid login will result in a failed login prompt to the user. If an invalid login is detected three times in a row a password reset will be required for that user.

After validating their login, the user will then be directed to their collection page that allows them to explore their card collection. There will be an option to search their card collection for any particular card. If the card is found then it will be shown to the user with all of that card's information, if the card is not found the user will see a message stating that information and as well as an image of the card. There will also be an option for editing the collection, which will allow the user to add or delete cards that are in their collection. Additionally, there will be an option that allows the user to see their wantlist. The wantlist will have the same functionality as the card collection page with the removal of features such as 'date acquired' that don't apply to unowned cards.

To prevent data loss in the event of an internet connection interruption or if a fatal error occurs, the proposed system must save a snapshot of the customer's collection upon an edit taking place. The user will be prompted upon the loss of connection or application error with options for attempting a reconnection or exiting the application. Additionally, the proposed system will open to the last edited page when restoring from a application crash.

The Proposed System: Operational Features

Must Have:

1. Collection
2. Want list
3. Robust filter options (by team, player, price, number, year/range of years etc.)
4. Card information (team, condition, price, etc.)

Would Like to Have:

1. Custom search filters (allowing the user to create their own filters)
2. Notifications for when a cards value drastically increases/decreases

The Proposed System: Analysis

The language our team will be using to develop the proposed system is Java. The reasoning for this choice is twofold; first, each member of our team has years of experience with Java, and second, Java's automatic memory management will greatly expedite the process of debugging.

The proposed system shall be developed as a mobile application for android devices, since mobile devices are all but ubiquitous in today's market. Additionally, the development team has a majority of android users. Due to this, a large portion of the team is familiar with how a properly developed project should look on the Android platform. This experience will help keep the team on track as we develop the proposed system. Some members of the development team have little experience with mobile development, so there will be a small learning period to understand its minutia.

The proposed system must have a card repository capable of storing, adding, and searching cards. Both member users and non-member users must be able to search this repository for cards specifically by card number or by using a variety of filters. These filters must include 'cards by year or range of years', 'cards by player', 'cards by team', and the total value of the collection by year or range of years.

Since the proposed system shall be developed on a mobile platform, the card repository will only be accessible through wifi or mobile networks. An alternative to not allowing users to observe their collection without internet connection would be to also have a local collection updated on their android device. The user would not be able update anything for other users to see, but they would be able to observe their own collection. The tradeoff of this method is the storage space required on the android device. The proposed system does not require their collection to be saved to their phone, while the hypothetical local-system would.

The proposed system uses the best possible selections for our platform due to the fact that most users will likely be using an Android mobile phone device. While phones have been evolving over time, one of their biggest weaknesses is still storage space. Our selection is built to take up as little storage space as possible, which is an appealing feature for Android projects.