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Android Movie Catalog Proposal

Abstract

This proposal is for a Computer Science Masters project that will involve writing an Android/Web application that includes the ability to scan movie bar codes to get information from the web such as title, genre, release date, etc. A user can then search the collection and sort the results by date of release, date added to library, title, personal rating, etc.; or some combination of those. The application will allow a user to rate the movies based on personal liking. Another feature is the ability to store movies that the user does not currently own in a wish list type of functionality. This can be done using the same bar code scanner but adding the movie scanned to a wish list rather than the owned list. This information can then be shared via a Web Application that would allow a user to upload the information from their phone to their personal profile. From this profile they can share their comments, personal ratings, wish lists and list of owned movies with others. They can even mark the movies that they have lent to others.

Introduction

One day I was looking for a movie in my collection but wasn't able to find the movie I was looking for. I had a thought, "Wouldn't it be great if I had an application that listed all of my movies so I know what I have?" It then dawned on me that I can develop an Android application to do just that and have it share information with my desktop computers in some way. I then realized this would be a great project to do for my Masters project because it involves using a platform I have never used and would require me to learn new design patterns and techniques and also give me the ability to apply software engineering skills that I have learned.

There are projects and programs that do some of what I am designing to do already. One is “My Movies” (www.mymovies.dk) which does a lot more than my application idea. Their Android application has a free edition and a pro edition. Their free edition only allows you to evaluate the software and limits you to 50 moves total. I personally would just like a much more simple application that I can use to store my movie collection. I then remembered that the movie I was looking for I lent to a friend. No application that I have found so far has a function to note that the movie you are looking at is currently unavailable because someone else is borrowing it. This is how I came up with the idea for my project.

I currently have zero experience programming for the Android platform. This project will provide me with a great challenge in learning the API’s as well as interacting with the hardware of a few select implementations of Android hardware (Android 2.3.3 “Gingerbread” is my target API level). The memory constraints of Android devices will affect how much information about each movie can be stored on the device (internal storage vs. SD memory card usage).

I plan on implementing Web Services for connectivity between the Android device and the Web Application. One of the major concerns from the start of the application should be security. Rather than adding security at the end of the project it will be a constant factor from design to implementation.

Deliverables

For this project I plan on delivering all design documentation, source code developed, database structures, lessons learned, installation instructions and formal write up for the project. I plan on writing all of the code that I can without the usage of external libraries whenever possible. I do realize that in some cases the usage of external libraries may be required. In those cases I will document and reference all pieces of work used and why they were used.

Time Line

I. Initial design
   a. Use Cases
   b. Sequence Diagrams for both Android application and web application
   c. Android Graphical User Interface sketches
   d. Web Application Interface sketches
II. Learning phase
   a. Android API's for security, camera, interface, storage and web service interactivity
   b. Bar code decoding
   c. Small example applications using above learned knowledge
III. Implementation phase
   a. Applying example applications to final Android application according to design documents
   b. Coding the Android and Web application Graphical User Interfaces
   c. Coding Web Application according to design documents
IV. Documentation phase
   a. This is a reoccurring event that happens as a part of the previous phases
   b. Includes lessons learned, issues found, bugs encountered/workarounds
   c. Document installation process
   d. Create final project document
V. Deliver and present project

References

(2011, Dec. 14) *My Movies* [Online] Available: http://www.mymovies.dk/products/my-movies-for-android.aspx