Podcast-Tagging on the iPhone

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Problem

Students in the Ohio State University medical program are all given an Apple iPod Touch or an Apple iPhone. They now have easy access to an infinite amount of resources. Lectures are downloaded as podcasts on the mobile devices. This enables the students to carry the entire medical school curriculum in the palm of their hands. While this is convenient, students are limited with what they can do with this material. Currently, students are limited to simply a listening session.

Solution

The iPhone application Auditorium enables students to do more than just listen to the podcast. They can also make bookmarks and comments while they are listening. Similar to reading a textbook, Auditorium allows students to make notes while listening to lectures on the podcasts. It also provides resources for educators to see what their students are saying about their lectures.

Functional Requirements

1. Must sync podcasts from iTunes library (Podcasts and iTunes U)
2. Must allow users to create tags and comments
3. Tags and comments made must be viewable for each podcast
4. Information collected from tags and comments are stored in database if the podcast is uploaded by The Ohio State University Medical Center
5. Reports for information collected from tags and comments for The Ohio State University Medical Center’s podcasts must be viewable via web browser

Non-Functional Requirements

1. Application should upload podcasts from iTunes library within 5 seconds
2. All tags and comments made for podcasts must fit within memory capacity of mobile device
3. Access to the web services is only granted to authorized administrators

Data Flow Diagram

- The user uses an iTunes account to download podcasts and/or iTunes U content.
- The user listens to content on the device using Auditorium and creates tags.
- If the user is an OSU student listening to medical center iTunes U content, the tags created by the user are uploaded to the database via a SOAP message.
- CF Middleware to connect to a Microsoft SQL Server 2008 database
- Database makes calls to Reporting Services

Class Diagram

- Tab 1: Podcasts
  - List all podcasts and iTunes U audio items stored on the device.
  - User selects a podcast and the available episodes are listed for that podcast.
  - User selects an episode and is redirected to Tab 3, the listen view.

- Tab 2: Tags
  - List all podcasts and iTunes U audio items stored on the device.
  - User selects a podcast and the tags created by the user are displayed (left).
  - User selects a tag and is redirected to the listen view at the point linked with the tag.

- Tab 3: Listen & Tag
  - Create a Tag
    - Audio-tag – Too Easy, Too Hard, Come Back
    - Free-text comment
    - Metadata – currently supplied with medical terminology

Database Schema

- There are 3 different kinds of users – Student, Resident, and Faculty
- Only tags uploaded by users affiliated with the OSU Medical Center on Medical College lectures will be uploaded.
- Users are uniquely identified by their device ID (UUID)
- Reports are defined off of this database. Data for these reports are taken from user created tags and automatically uploaded tags to measure other data such as play time and frequency.

Significance

Unlike textbooks and other media, using audio recordings as a learning tool does not traditionally provide as much flexibility. It is much harder to rotate this form of media. This app helps students to get much more out of multiple listenings to a given lecture. It will also enable educators to know which areas of lectures large amounts of students are struggling with so they can further customize their lectures.

Future Plans

- Enable a slider bar in the listen view to control the playback rate.
- Create more reports and more tags for more reports.
- Enable a “Get More Episodes” link on the Podcasts tab.
- Use the decibel level of the podcast to skip content – not supported by the current iPhone SDK.

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