Jukebox: Analysis and Design Documents 15/150 pts

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Collaboration: This project is to be completed in a team of two in three weeks for a total of 150 points. Please try to work on a different team from Bowling. Dare Rick insist you change?

Before commencing with software construction, you are asked to identify critical requirements and architectural elements. A first draft of this document is due at the beginning of class at 3:35 pm Thursday, 31-Jan. Bring a laptop or two with this document or a printout to share if you are willing. Also get Violet on your machine http://horstmann.com/violet/ (the Windows Version is much better than Violet for the Mac). We will do a design review where we share our ideas. You may modify your artifacts.

This project will have two iterations to turn in, both of which must include a document named DesignDocuments (in word or pdf, or open office, or whatever can hold text and pictures (import the file into your Eclipse project. DesignDocuments.* must include the several analysis and design artifacts including these three that are due in class on Thursday 31-Jan-2013

I Candidate Objects and their major responsibility

II User stories with an estimate of how long each would take in hours

III A picture of a UML class diagram (can use a png file exported from Violet).

Problem Statement: The student affairs office wants to put some newfound activity fee funds toward a Jukebox in the student center. The Jukebox must allow students to play a song. No money will be required. Instead, a student will swipe a magnetic ID card through a card reader, view the song collection and choose a song. Students will each be allowed to play up to 1500 minutes worth of "free" Jukebox music in their academic careers, but never more than two songs on any given date. No song can be played more than five times a day.

I Create an initial list of objects that would do a good job of modeling this system. Also list the major responsibility of each.

Object	Major Responsibility
Jukebox	Coordinates students' activity/interaction with the song selection (like Librarian in Rick's example), displays view count of any song and available views for the current user
Student play	Picks songs and be able to view them, and has a limited number of minutes to
Student list	Contains a database of all students that can login
Song Collection	Contains all available songs and checks to see if it can be played
Song	audio file/keeps track of how many times it has been played in the current day, the song length, and its song name.

II Develop User Stories that capture the requirements of this system and list the number of hours you think it will take each to construct.

1) The program should play the song that I choose (3 hours)
2) No song should be played more than 5 times a day (1 hour)
3) I can only pick 2 songs a day (2 hours
4) I can see the available songs (2 hours)
5) I can see the songs that are upcoming (2 hours)
6) I can only play 1500 minutes of free music (1 hour)
7) I should be able to login with my ID (1 hour)
8) I can sort by Artist, Title, Length (2 hours)
9) Number of plays and plays for the day reset at midnight (1.5 hours)

III Include an image of a UML class diagram (may be created by Cay Horstman's Violet) showing

all of candidate objects and any relationships between them (Dependencies, Generalizations, Aggregations, or just a general association). Write any multiplicity adornment you can think of. You will likely have 1, and * in one or more places. Each class must have the class name, at least one attribute and at least one operation.