Project Proposal

**Project Summary:**

For my final project I will be making a program inspired by an exercise in our textbook. For this program I will make a chat-bot that will play a version of “20-questions” with the user. The base program will ask questions until it reaches a point where it guesses correctly or makes an incorrect guess. When it incorrectly guesses it will ask the user for the answer and a way to distinguish between what it guessed and the correct answer. This will allow it to learn the best questions to ask by building a binary tree of questions and answers. Yes, responses will be stored in the question’s left child and No responses will be stored in the question’s right child.

**Features / Goals:**

My C-level program will be console based. Allows user to choose a subject and come with a couple of preloaded questions and answers.

My B-level program will have a graphical user interface (GUI) that will allow the user to save the learning progress of the chat-bot. Research serializing and de-serializing a binary search tree as a way to save and load. I will also allow users to create usernames and keep a high score number of how many times a user was able to “Stump” the bot.

My A-level program will allow for custom subjects to be created and learned from. At this level I will also separate administrative and user functions so that when we are training the chat-bot we can ensure that a malicious user is not putting in bad data.

**Timeline:**

By the end of next week, April 12th, I will have the basic program and data structures setup along with a working console-based program. Along the way I will be documenting all of my interfaces, classes, and keeping an up-to-date Javadoc. By the end of this week I will have a UML outline, and list of design decisions and challenges. I will be testing at this stage to make sure that all implementations of interfaces are working the way that I have documented them.

By the end of the week, April 19th, I will create a GUI. Create a way to save and load a binary search tree. Create files to keep track of usernames and scores. I will also finalize all interfaces and publish the final Javadoc. At this time the UML diagram should be close to complete. I will also format and complete the design decision and challenges. At this stage I will be testing to make sure saving and loading is working correctly and that the binary tree data structure is maintained.

By the end of the week, April 26th, I will create a text field to input custom subjects. Separate Admin and User functions to separate programs. Finalize the UML diagram, java documentation, and design decisions and challenges paper. At this stage I will be testing to make sure all previous tests are still working and that all functions are completely separated between admins and users.