EECS 448

Team #2

Within the context of your chosen design paradigm, describe the software architecture of your prototype (250-350 words – 5%).

3-Tier - The primary programming challenge of our design is pairing a user's input or interaction with the device to an appropriate pre-written response. This naturally slots into the 3-Tier model, where the user interacts with the presentation layer, their input gets processed by the logic layer, which selects the appropriate response from the database layer. Naturally, with object-oriented design, these layers can be split into their own individual classes, which themselves can contain the necessary objects/classes for their function. As a result, when dealing with inter-layer communication under this architecture, each layer class would only interact with the other master layers classes, which should contain the functionality to pass the sent directive to its child classes.

For the presentation layer, it would control all the front-end elements such as the main view and menus. It would also be responsible for all the animations of the main character on the screen, capturing user inputs, and the sounds effects. The logic layer will likely be the most difficult to implement. While the final version may be able to include some sort of natural language processing if we find a usable library, it would be much simpler to have a user choose between a few predefined responses to whatever prompt our app provides. In that case, the logic layer will need to be able to take the context of the prompt and the characteristics of the response, which will likely be categorized into an object, then pick a randomized reply from pre-sorted replies in the database layer. The database layer may be the simplest layer to construct, ignoring the time it would take to write all the possible prompts, selectable responses, and possible replies to the responses. Once that is completed, however, these can basically be grouped into large arrays or objects along with a simple descriptor / category for each group.