Team: Floradex
Architecture Addendum

For the implementation of our architecture, we will be moving from an iPhone application to a computer application.

The dichotomous key will be saved as a text file, which will be read in and converted into a binary tree. Each node of the tree will contain a question, the two possible answers, and links to the image files (which will be stored in memory) associated with each answer. For example, the value of a node might be (“Does the plant have broad leaves or narrow leaves?”, <left =(“broad”, “.../broad_leaves.gif”)>, <right = (“narrow”,“.../narrow_leaves.gif”)>). The questions asked in the dichotomous key define fields in the database (although there will be additional fields defined by the keyword search). The tree traversal component {Component 1} will pass the information stored at the current node to the tree display component {Component 2} , which will return which branch the user has chosen, or whether the user has chosen to skip to the end. After each answer the user provides, the tree traversal component will store an association of the question and the answer in a list and go down the indicated branch. When the user reaches a leaf (which will contain the name of a plant that matches all of the characteristics indicated) or elects to skip, the tree traversal component will pass the list of associations to the search results component {Component 3} to find the best matches from the database. After searching the database, the search results component will return a list of the plants that match the list of the associations to the results display component {Component 4}. Because some characteristics of the plants might not be obvious and easy to identify for some users, we want to be able to return searches from the database, even if none of them exactly match the list of associations. The matches will be ordered by a percentage that is determined by how many of the associations in the list match a given plant. That way the user can browse through a list of possible plants that are similar to the one they were searching for. When the user selects one of the plants from the list, a factsheet of the plant will be displayed. It will take the information (scientific name, common name, description and etc.) from the database and format them into different sections of the factsheet for display.