# Project Executive Summary

## Purpose of Application

Our application provides a platform for the aggregation of cancer-related questions, allowing patients to find questions to ask their physicians after diagnosis. Questions will be crowd-sourced from patients with the option for users to tag and rate them; this will create a ranking of questions so that patients can choose the ones that are considered most helpful. **The application's primary function is to provide a database of questions; it is not meant to be an answer forum.**

## Significance of Application

Our application equips cancer patients to visit their physicians with a thorough understanding of the knowledge they hope to obtain from the consultation. After an initial diagnosis, patients are often in shock and unable to formulate the questions that they might later need to know - our application remedies this problem, not only by allowing patients to prepare questions beforehand but also generally making consultations more efficient. Auxiliary features, such as recording ability, will help patients remember the answers and advice given by their physicians during consultation.

## Functionality

The application will provide the following core functions:

1. A database of questions relating to the diagnosis and treatment of cancer
2. User accounts such that questions can be saved to a "My Questions" page (see UI #2)
3. Search functionality allowing users to find applicable questions through:
    a. Matching search terms (i.e. the search terms appear in the results)
    b. Matching tags (i.e. the search terms match the tags associated with the results) (see UI #4)
4. List of individualized, recommended questions for users generated by the app based on information provided in initial signup (see UI #3)
5. Support for questions to be submitted and tagged by users
6. A rating system for questions such that best-rated questions are displayed first in search results
7. Organization of questions within user accounts by scheduled physician visits (e.g. grouping of questions pertaining to initial diagnosis under "Visit 1")

Auxiliary functions may include the following:

1. Recording functionality so that patients can record answers provided by their physicians during consultation

2. Annotation of recordings to match physician answers with saved questions

## Technical Considerations

The application will be created as a mobile app supporting all three major platforms: Android, iOS, and Windows Phone. To do this efficiently, we will be using a cross-platform development toolkit called Xamarin. It allows the apps to be written in C# and then compiled into their native code for each platform. This is much better than other cross-platform toolkits which are wrappers around HTML web

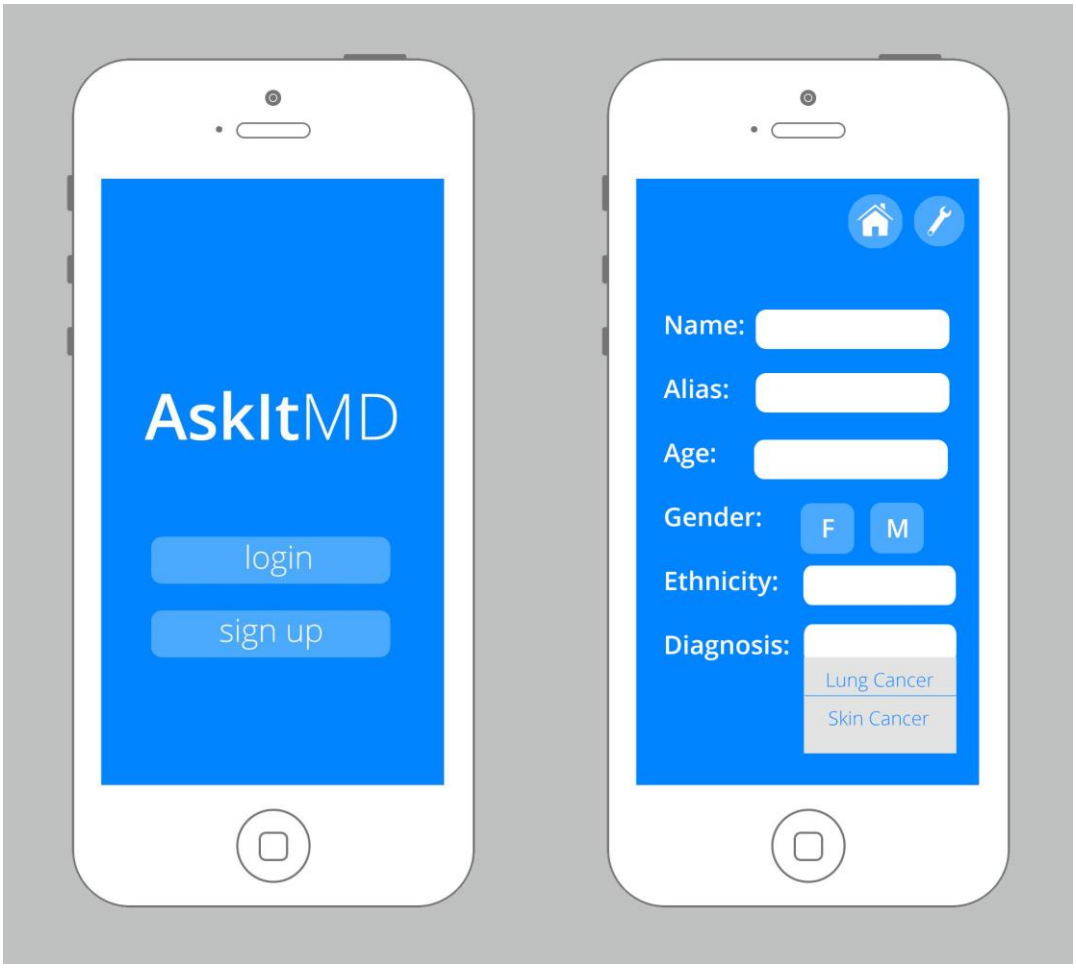
pages. Using Xamarin will allow us to write libraries once and have them be used across all of the devices. It costs money for the more advanced features that we are looking to use, but it will allow us to deploy on all three platforms within a similar time frame. Student licenses for a year are approximately $99 per developer. **All expenses have been discussed and cleared with the clients.**

To support the question databases, user profiles and recording of personal information, the use of a database and supporting web service will be required. This will be developed in Node.js which is a server-side JavaScript library. It provides good scalability and works well for developing APIs such as what we will be creating. This will be hosted on Azure, a cloud-hosted platform, in order to allow the service to scale as the usage grows. This, combined with Node.js, will allow the system to support just the few we will need during the development stages, while making it trivial to scale to thousands of daily users. Azure is paid for monthly and based only on the usage. This means that it will be cheap in the beginning (<$10 /mo) and increase in cost as the usage increases.

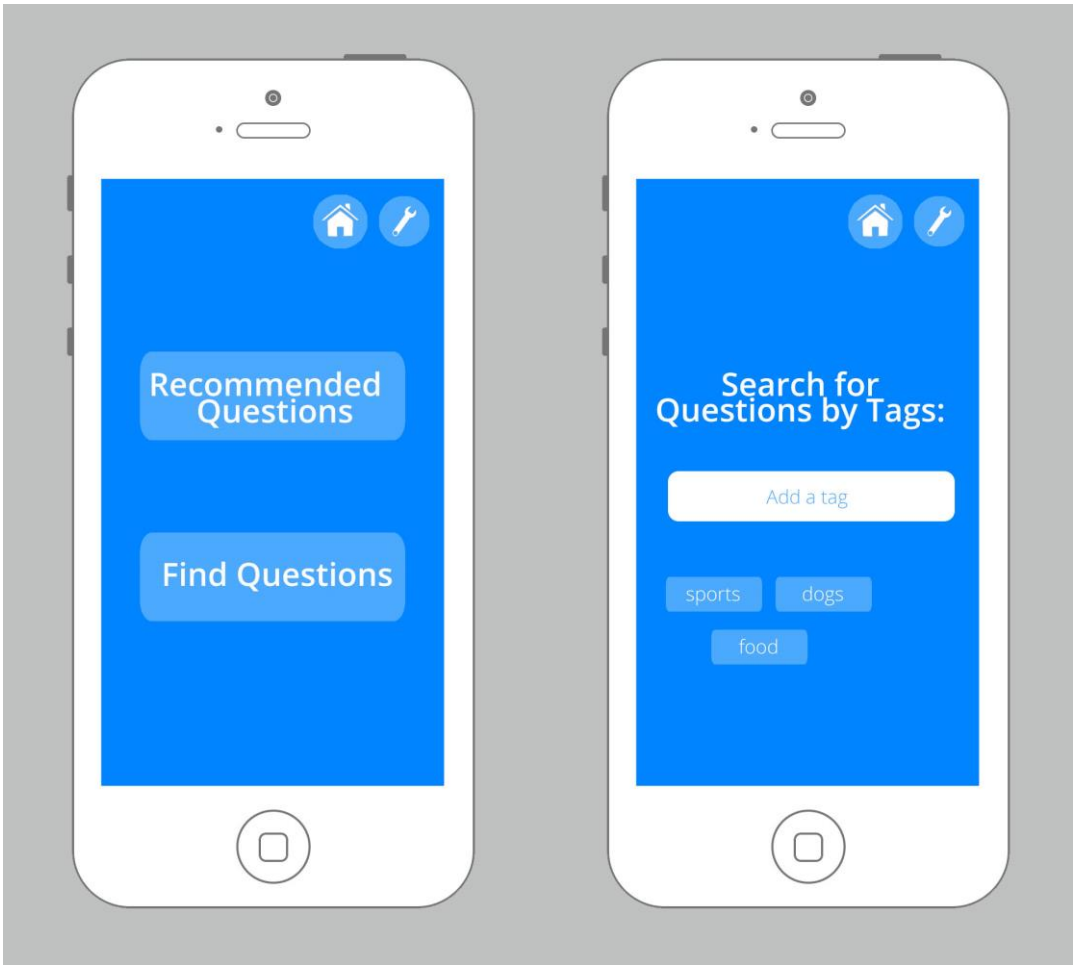
## Mockups

These are initial mockups of the application, subject to change:

**UI #1 (left), UI #2 (right):**



**UI #3 (left), UI #4 (right):**



**UI #5 (left), UI #6 (right):**