

Team 5

Project Name: **BOILER LABS**

Team Members:

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1. Problem Statement :

There is no application for the Android platform that can locate an ITaP Computer Lab (with available computers) that is nearest to the user.

2. Background:

Purdue has a campus that is more than 2500 square acres in area and students often have problems in locating ITaP labs that are near them. There is no app on the Android platform that helps users in locating an ITaP lab (with available computers) that is nearest to them. This app is targeted at the student body of Purdue. There is an official iOS application titled "Purdue" that performs a similar task.

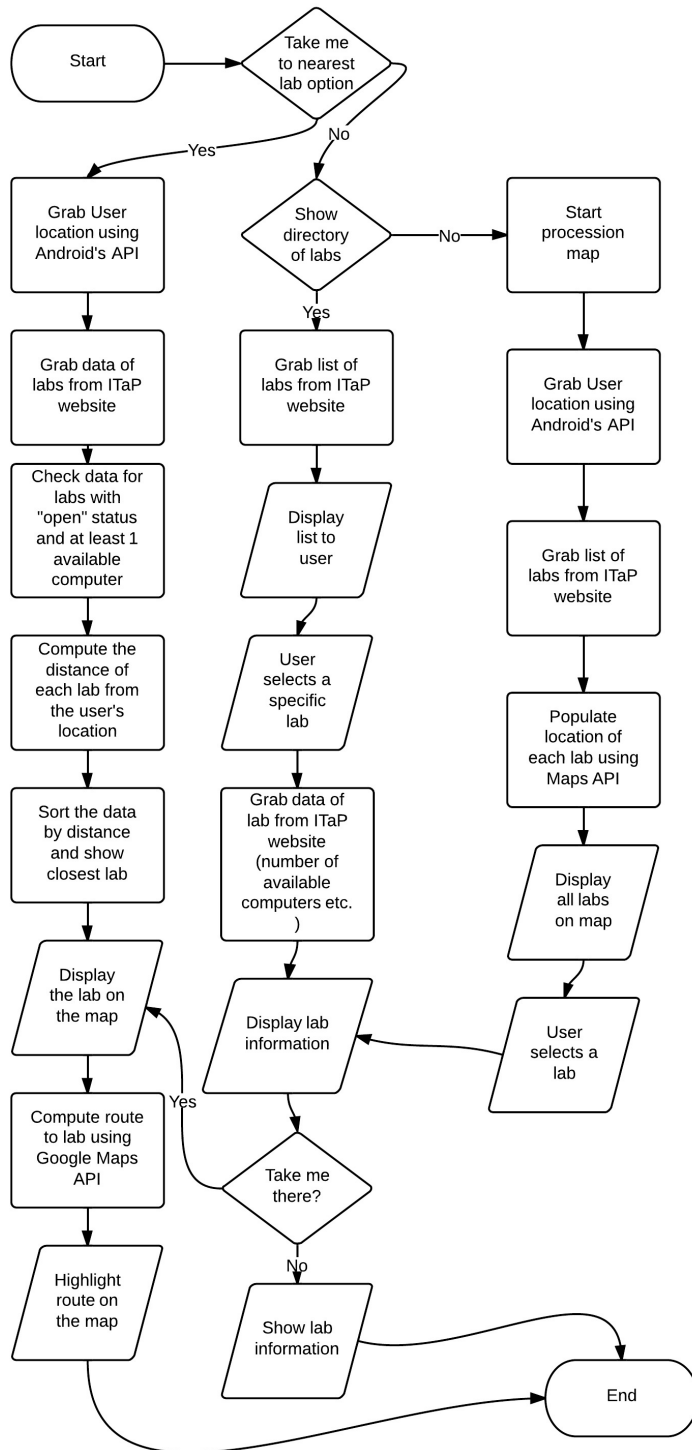
The app on iOS has the following limitations:

- i) The list of labs displayed on the app is not complete. There are several ITaP labs that are not listed on the app.
- ii) This app does not provide users with directions to a lab that is nearest to their current position.
- iii) The user interface is not very appealing and the app as a whole is not easy to navigate.

Measures taken to overcome these limitations:

- i) This application will be made available on the Android OS, making it the first of its kind that fulfills a crucial student need on campus.
- ii) This app will display a list of all the ITaP labs across campus.
- iii) This application will provide users with directions to a lab that is nearest to them.
- iv) This application will have a superior interface and will be optimized for user ease-of-access.

3.a) Diagram



b. Description of the interactions.

USE CASES:

ACTOR ACTIONS	SYSTEM RESPONSE
<p>a) Use case: Open app.</p> <ol style="list-style-type: none">1. Click on “BOILER LABS” applications. <p>b) Use case: Find the ITaP lab that is nearest to the user.</p> <ol style="list-style-type: none">1. Click on “Take me to the nearest lab” in the main menu. <p>c) Use case: Display information on a specific lab on campus.</p> <ol style="list-style-type: none">1. Click on “Directory of labs”. <p>2. User selects a lab by clicking on it.</p>	<p>a) Use case: Open app</p> <ol style="list-style-type: none">1. Cell phone launches application and displays main menu with the three options: take me to the nearest lab, directory of labs, map of campus with labs. <p>b) Use case: Find the ITaP lab that is nearest to the user.</p> <ol style="list-style-type: none">1. The application first obtains the users location. The application then obtains the data of the labs from ITaP, and displays the user with directions to the lab that is the least distance from his location. <p>c) Use case: Display directory of all labs on campus.</p> <ol style="list-style-type: none">1. The application obtains the list of all the ITaP labs from the website and displays it as a list to the user.2. The application obtains the information on the available computers in the lab and displays the information.

<p>d) Use case: Display campus map with all the labs marked on it.</p> <ol style="list-style-type: none"> 1. Click on “Map” in the main menu. 2. The user selects a lab by clicking on it. 	<ol style="list-style-type: none"> 1. The application obtains the list of all the ITaP labs from the website and populates a map with the labs and displays this to the user . 2. The application obtains the information on the available computers in the lab and displays the information.
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4. Requirements :

Must be done:

Functional:

1) **Show the user the ITaP lab that is closes to them, along with directions to reach that lab.**

2)**List all ITaP labs**

This application will display to the user a list of all ITaP labs across campus.

3)**Show details of each ITaP lab.**

The application will display:

- The number of computers available.
- The capacity of the lab, i.e., the total number of computers in that lab.
- The kind of hardware that the lab is running (Mac or Windows).
- The hours of operation,current status of the lab(open or closed).

- Picture of the lab.

4) Display a Map showing all the ITaP labs on campus and the current location of the user.

Non-Functional features:

1) **Performance:** The system as a whole should be able to perform well and attempt to mask slowdowns. For instance, if the Internet speeds between the server and the client become slow, the client should not become unresponsive. It should still be interactive while data is synced asynchronously. As much of the processing load will be given to the web server as possible, since we do not know the exact hardware of the client. This will enable us to help keep performance as consistent as possible across clients.

2) **Reliability:** Reliability will be a main concern, mainly because if any portion of the system fails, the system as a whole becomes next to useless. While performance is a main concern as well, if the system has glitches and is unreliable, performance does not matter. We will attempt to balance these two requirements in a way that will maintain a reliable system while achieving adequate performance.

3) Usability:

The Android app will conform to the modern Google app development guidelines. We will conduct hallway testing and ask people without any programming experience to use our application, and evaluate their feedback in order to improve usability.

4) Security:

Securing user data will be a primary concern. No personal data (such as login information) will be sent as plaintext over the Internet. Also, we will ask the user to give permission (which will be persistent to enhance usability) before retrieving data.

Will be Done if time allows:

Functional requirements:

1. The user will be able to make an appointment with the Purdue writing labs.

2. The application will provide the user with an option to access Lawson's public webcams for labs.

3. The user will be able to specify his favorite lab.

This will make the application display information about this lab on the homepage of the application.

4. The application will be able to perform calculations about which lab is the busiest lab by looking at the historical data of each lab.

Code repository:

We have chosen to use GitHub as our code repository. It is located at

<https://github.com/shalin94/BoilerLabs>