2.3 User characteristics

There are four types of users that interact with the system namely students, guests, staff and administrators, with each having different characteristics on how they interact with the system.

Students will use the mobile application side of the system. Students enjoy the same functionality as guest users that include viewing current location, search and locate venues and navigate to destinations. To enjoy the benefits of saving locations, receive personalized information such as activities and events based on points of interest, students need to be logged in.

Guest users will be able to view their location, search venues, view events and navigate to destinations.

Staff will mostly use the backend of the system to view and change user details.

Administrators will mainly use the server or backend side of the system. They will be able to add, remove and manage the following: users, activities and event notifications.

2.4 Constraints

The mobile application is constrained by the system interface to the Wi-Fi hardware within the mobile phone. Since there are multiple Wi-Fi manufacturers, the interface will most likely not be the same for every one of them. Also, there may be a difference in the performance and specifications of the hardware.

The Internet connection is also a constraint for the application. Since the application fetches data from the database over the Internet, it is crucial that there is an Internet connection for the application to function.

Both the backend and the mobile application will be constrained by the capacity of the database.

2.5 Assumptions and dependencies

An assumption about the product is that it will always be used on mobile phones that have built-in Wi-Fi hardware and have enough performance to run the application in a working and consistent manner.

Another assumption is that the Wi-Fi components in all mobile phones work in the same way. If the phones have different interfaces to the Wi-Fi, the application need to be specifically adjusted to each interface and that would mean the integration with the Wi-Fi would have different requirements than what is stated in this specification.

For the application to launch and run it will depend on a compatible operating system and version of the mobile phone.

3.1 External Interface Requirements

3.1.1 User Interfaces

The mobile application will interface with the supported input and output features of the host’s operating system. Inputs include text that the user will enter for login or searching a venue. Outputs include the type of fonts to display text or graphics to show images or draw the map.

3.1.2 Hardware Interfaces

Since neither the mobile application nor the web portal have any designated hardware, it does not have any direct hardware interfaces. The Wi-Fi software in the mobile phone manages the built-in Wi-Fi and the hardware connection to the database server is managed by the underlying operating system on the mobile phone and the web server.

3.1.3 Software Interfaces

The mobile application communicates with the Wi-Fi software in order to get signal strength information from multiple Wi-Fi access points to determine (using triangulation) where the user is located. The communication software between the database and mobile application consists of operation concerning creating, reading, removing and modifying the data.

3.1.4 Communication Interfaces

The communication between the different parts of the system is important since they depend on each other. However, in what way the communication is achieved is not important for the system and is therefore handled by the underlying operating systems for both the mobile application and the backend.