



Wollo University
Kombolcha Institute of Technology
Collage of Informatics
Software Engineering Department 4th Year
Mobile Application Development (SEng6241)
Kiot map

Group member

Name	Id
Solomon emrei	1798/12
Kidus yohannes	1210/12
Daniel desisa	0555/12
Michael tamirat	1404/12
Tsedniya admasu	1965/12

Submitted date: 02/09/2015 E.c
Submitted to: Ms. Bezawit endris

Table of Contents

Problem of Statement.....	1
Significance of the project	1
Functional Requirements	1
Non-functional requirements	3
Teacher suggestions	5
Conclusions	5

Problem of Statement

Wollo University is a large and complex campus, with numerous faculties, buildings, and facilities spread across a vast area. This can make it challenging for new students, visitors, and even regular users to navigate the campus and find their way around. The current navigation system lacks detail and accuracy, leading to confusion and delays for the users. In addition, the non-commercial version of Google Maps API limits the implementation of certain features, such as polylines, which can further complicate the navigation process. Therefore, there is a pressing need for a navigation system that can provide accurate and detailed information about the campus and help users find their way around more efficiently.

Significance of the project

The Kiot Map app aims to address the challenges faced by users navigating Wollo University's campus by providing a comprehensive and easy-to-use navigation system. With the implementation of Google Maps API, users can access detailed and up-to-date information about the campus, such as building locations, points of interest, and landmarks. Additionally, the app will provide users with real-time directions to help them navigate the campus and reach their destination on time. By making the navigation process more efficient and enjoyable, the app has the potential to significantly enhance the university experience of students and visitors.

Functional Requirements

To achieve its goals, the Kiot Map app should include the following functional requirements:

- The app should use Google Maps API to provide an accurate and detailed map of the Wollo University campus.
- The app should allow users to search for locations on the campus and provide directions to reach their destination.

- The app should allow users to switch between map types from normal to satellite view to get a better understanding of the campus layout.
- The app should provide users with detailed information about various locations on the campus, such as faculties, libraries, and administrative buildings, to help them understand their surroundings.
- The app should be easy to use and navigate, with an intuitive interface that allows users to quickly find what they are looking for.
- The app should provide a detailed and interactive map of the KIOT campus that accurately depicts the location of buildings, roads, and other facilities. The map should be comprehensive and include all important buildings like: Dormitories, Cafeterias, Lounges, Clinic, Software Laboratory, Student Classes, Gymnasium, Library, Registrar pathways, and other key features of the campus. The map should also be clearly labeled and easy to read, with different building types and features easily distinguishable from each other.
- The map should be easily navigable and allow users to zoom in and out to view different areas of the campus. Users should be able to pan around the map to explore different parts of the campus, and zooming in and out should be smooth and intuitive.
- The app should also provide a clear legend or key for the map, indicating what different symbols or colours represent.
- The app should include the ability to search for specific buildings or locations and highlight them on the map. Users should be able to search by building name or keyword and have the results displayed on the map. The app should also provide directions to the selected location, either through turn-by-turn navigation or a clear path on the map.
- The map should be regularly updated to reflect any changes to the campus layout, such as new buildings or road closures. The app should have a system in place to ensure that the map is kept up-to-date and that changes are reflected accurately. This system could

include regular surveys of the campus, collaboration with the facilities management team, or user-submitted updates.

- The app should have an intuitive and user-friendly interface. The interface should be designed to be easy to use and understand, with clear labeling and easy-to-use controls. The app should also be aesthetically pleasing and consistent with the university's branding and design guidelines.
- The map feature should provide real-time updates about any changes to the campus map, such as closures or renovations. Users should be alerted to any changes that may affect their navigation of the campus and the app should be updated accordingly. The app could also include a feature for users to report any changes they notice on the map to help keep it up-to-date.

Non-functional requirements

In addition to the functional requirements, the Kiot Map app should also meet the following non-functional requirements:

- The app should be compatible with both Android and iOS devices, ensuring that it can reach a broader user base.
- The app should be fast and responsive, with minimal lag time when loading maps and directions.
- The app should be secure and protect user data, including location data and search history.
- The app should be accessible to users with disabilities, with features such as voice-guided navigation and text-to-speech functionality, to ensure that all users can benefit from its features.

When we classify the non-functional requirements, they are as follows

- **Performance:** The app should load quickly and respond to user inputs in a timely manner. The map should be rendered smoothly and quickly, even when zooming in and

out or panning around the campus. The app should also be able to handle a large number of users simultaneously without experiencing any slowdowns or crashes.

- **Usability:** The app should be easy to use and understand, even for users who may not be familiar with technology or navigation apps. The interface should be simple and straightforward, with clear labeling and intuitive controls. The app should also be consistent with the KIOT's branding and design guidelines to promote a sense of familiarity and trust with users.
- **Reliability:** The app should be reliable and consistently available for users. The app should have a high uptime rate and be able to handle large volumes of traffic without experiencing downtime or crashes. The app should also be able to recover quickly from any failures or errors.
- **Scalability:** The app should be able to scale up or down as needed to accommodate changes in usage patterns or campus infrastructure. The app should be designed with scalability in mind, using cloud-based infrastructure or other technologies that can handle increased demand without affecting performance or usability.
- **Compatibility:** The app should be compatible with a wide range of devices and operating systems, including older devices or less common platforms. The app should also be compatible with different screen sizes and resolutions, to ensure that the map is easily visible and usable on any device.
- **Maintainability:** The app should be easy to maintain and update over time. The app should be designed with modularity in mind, using well-structured code and clear documentation to make it easy to update or add new features. The app should also be tested regularly to ensure that updates or changes do not introduce new bugs or issues.
- Ensuring that the application remains operational and accessible around-the-clock with as little disruption as possible, both for planned maintenance and unforeseeable technical difficulties

Teacher suggestions

As the non-commercial version of Google Maps API limits the implementation of certain features, such as polylines, alternative open-source libraries such as OpenStreetMap could be used to implement these features. OpenStreetMap has been shown to be a viable alternative to Google Maps, providing similar functionality and features. Additionally, conducting usability testing and gathering feedback from users can help identify areas for improvement and enhance the app's user experience. Finally, adding features such as real-time bus schedules and weather updates can further enhance the app's functionality and usefulness.

Conclusions

The project “KIOT Map” provides maximum flexibility. The testing of the whole system is completed with the data and outputs are generated. Most of all anybody can control this system with a little knowledge of Mobile phone. The programming techniques used in the design of the system provide a scope for further enhancements in the future. The various reports generated by the system are also very useful. Since the requirement of any organization and their standards are changing day by day the system is designed in such a way that its scope and boundaries could be expanded in future with a little modification. If the management wants to implement more enhancements in the future then that can also be accommodated easily. To conclude we have tried to solve this existing problem by creating a modern way to approach to thing.