

MobileLibrary

HebeleHubeleGom

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Team Members:

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1. Problem Definition and Background Information

Smart phones and tablets have many different kinds of application to make people life easier. The rise in smartphone use, people are taking advantage of being connected to data wherever they are. Smart phones and tablets have many different kinds of application to make people life easier. Libraries also represent their facilities by means of online services. Since METU library needs to prove itself in different platform, we believed that writing a mobile application for the METU Library will make it easy to access Library Services and increase the number of people using these Services.

There are more than 25000 students and staff in METU[1] who are using METU Library frequently. Library provides its users many WEB services such as searching books, checking book's availabilities, reading e-books, extending the deadlines of borrowed books, suggesting new books, checking debts in the library. Users can access all these WEB services by only using computers. Until now library users could access METU Library web site through their mobile devices, but by this way they could not use all the Library Services properly. To solve this problem web site can be developed by the IT Department of METU Library. To facilitate user's accessing METU Library Services, as the CENG491 Group "HebeleHubeleGom", we are planning to write a mobile application.

2. Significance of the Problem and Motivation

METU is one of the most innovate universities in Turkey[2] because of the different kinds of facilities such as library and academic powers. Particularly, METU library is the first opportunity for both students and staff to obtain more academic achievements. Therefore, Users of the library should use advantages of the library more efficiently. There are some solutions to increase usage of the library. Since smart phones are used by almost all academicians and students, a mobile application is the best solution for users to make researches about their studies more quickly.

Marketing or popularity is the most attractive part for other projects such as vertical search engine, role-playing game but mobile library has more attractive parts than other projects. Since android is the mobile platform which has 700 000 applications and is used by over 169 countries[3], it is believed that Mobile Library application will be very popular in short time. Also, there are a few libraries in Turkey which use mobile application so there will be supplies for the mobile library application which has already been accepted METU library.

Since browsers of smart phones cannot support all properties of the web site of METU library, there is no efficient way for users to connect library servers by Smart mobile phones and utilize from web site of METU library. Therefore, library users must prefer the Mobile Library in order to connect METU library server.

The project can run on any android platform. Therefore, any model smart phone and tablets, which support android application, can execute the Mobile Library. Moreover, since the application can be download freely, all library users can have the application and use it in their academic or social lives.

3. Draft Project Plan

The project is planned to be developed on Android development Kit(ADK). There will be several main components. GUI will be created by ADK. It will have relations to different servers like account servers and book information servers. In addition, flash player will be used to show locations of books and last news about Campus life. For server connections, system will need MySQL and JSON codes in order to research books in terms of searching conditions.

GUI will have METU logo and login parts at top of screen and there will be basic menu buttons which provide users to connect every parts of application directly. For each Layer, previous and next button will be placed on the button of the screen. Number of buttons on menu depends on the application properties. However, it will basically consist of announcements, search, suggestion, and user information buttons.

There are 2 main servers which are account servers and library servers. To provide users to connect their accounts the application will firstly connect account server. Then, it will benefit from library servers to get users & books relations and book information.

After users search the library in terms of their needs, locations of the books should be simulated by Flash player because we are mainly focusing to reduce time spent in the system by the library users. Also, users can read last news about campus life from the Mobile Library application. Therefore, we will need flash player to simulate book locations.

Here is the use case diagram of our project:

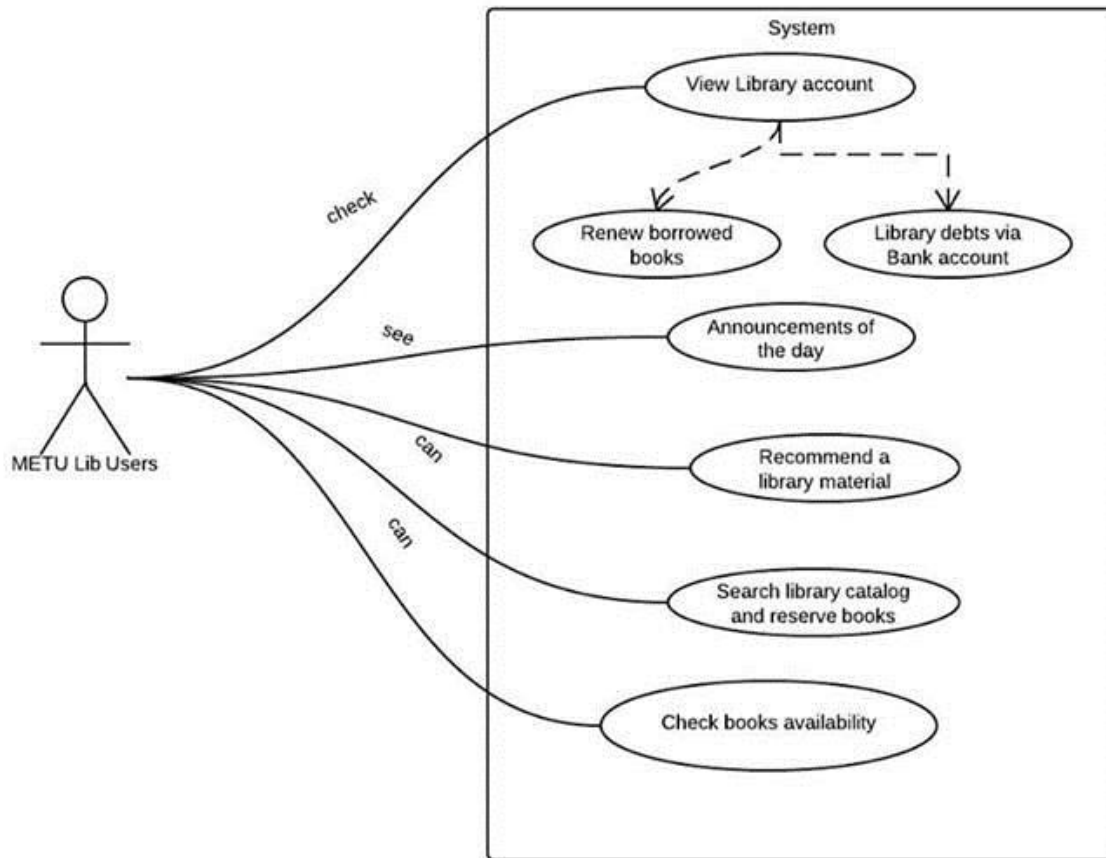


Figure 1 - Use Case Diagram

The only actor is the users of METU Library. If they have, users will be able to check their library accounts. By this way they will be able to renew books which they have borrowed, check their debts and pay them via credit cards. Users also will be able to see the announcements about METU Library. Our application will give the opportunity of recommending new materials to the users. Users will be able to search library catalog and reserve books. They also will be able to check their availability.

Here is the component diagram of our project:

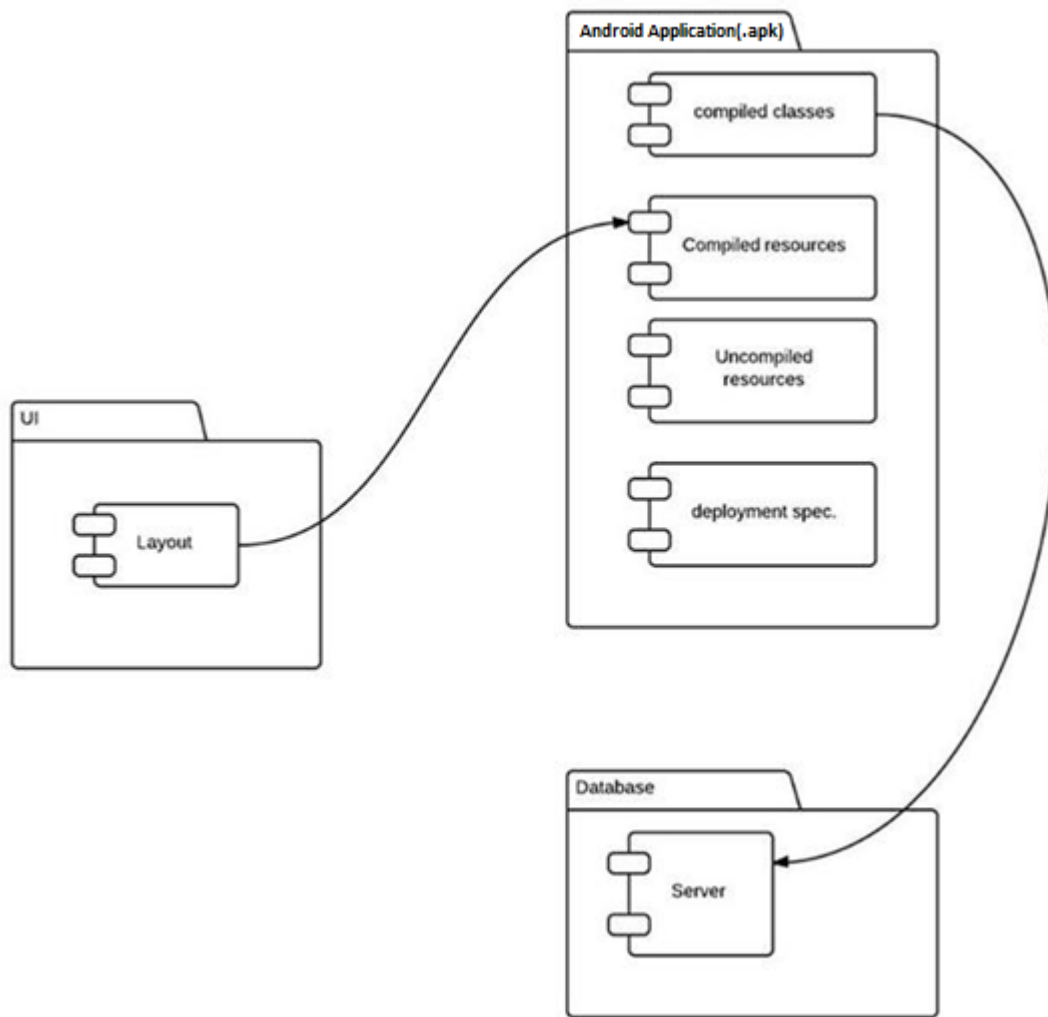


Figure 2 - Component Diagram

Our project will be written in JAVA. Android SDK tools will be used for compiling and packaging the code along with any required data and resourcing files into Android application archive file having “.apk” suffix. The application will be done together by the group members.

The user interface of our program will interact with the compiled resources of application. The UI of our project will consist of layers. Our UI module will be also used for getting directives from users. Our group member Yunus Emre AVCI will design our UI.

We will be using the servers of METU Library for book and user account databases which have been currently using by METU Library. It has been created by MySQL. Database will interact with the compiled classes of android application. Connection between the database and application will be provided with JSON. Database module will be done by the group and we will get advice from the METU Library.

Here is the component diagram of our project:

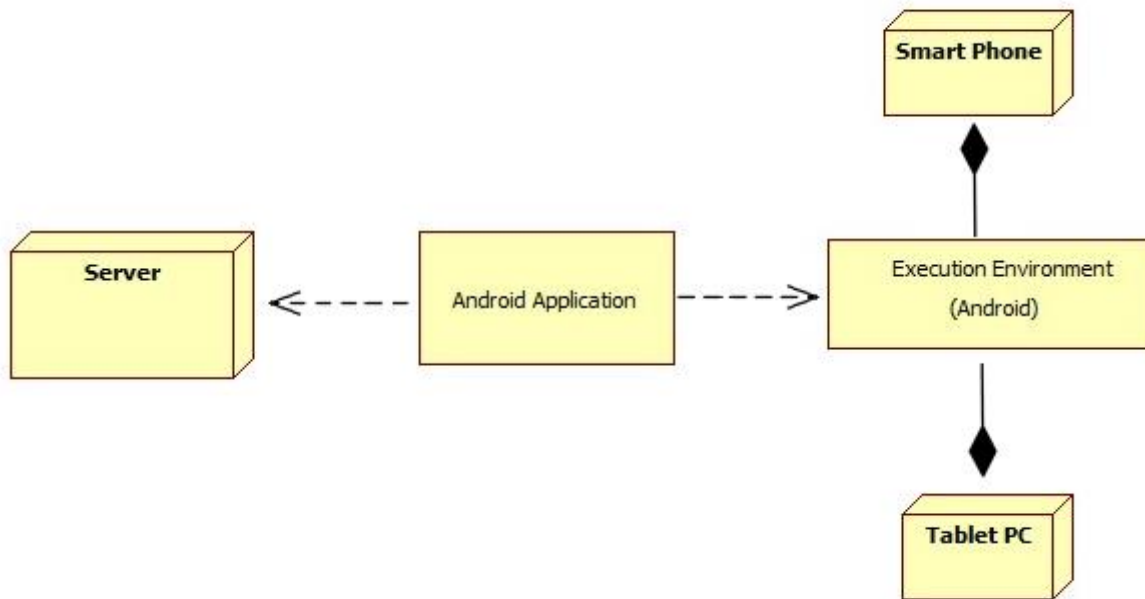


Figure 3 - Deployment Diagram

Our project will be running on smart phones and tablet PCs which are using Android as operating system. Server will keep the data which consist of library materials and user accounts. Our Android application will be able to access the database and reflect the data on mobile devices. Server is created with MySQL and our application will access database with JSON.

4. Support

As the CENG491 Group “HebeleHubeleGom” we are supported by the METU Library. METU Library will give us the permission of accessing servers. They will supply us mobile devices. If we need they will supply us some protocols (like Z39.50 protocol).

When the project is finished, we will give source codes to the METU Library and they will have the rights to make any changes on the project and to provide people to use it.

During the project we will be on contact with the Köksal YÜCESOY, who is the Head of The Information Technologies Department of METU Library:

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5. Appendices

No appendices.

6. References

- [1] <http://www.metu.edu.tr/general-information>
- [2] <http://www.tubitak.gov.tr/tr/haber/turkiyenin-en-girisimci-ve-yenilikci-universiteleri-aciklandi>
- [3] <http://www.android.com/apps/>, <http://www.android.com/about/>