

METU, Department Of Computer Engineering
Graduation Project
Proposal Form

(Please read carefully, and follow the instructions to prepare the project proposal form.)

(Instructions to fill in this form are given in italic fonts and in parentheses.)

(To provide an input for a section of the form, delete the instruction and provide your input in place of the deleted instruction. In the final form that you will submit, there shouldn't be any instructions left over, including this section of the form.)

(If you feel that a particular instruction is not relevant to your project proposal, please use a proper explanation for this, rather than ignoring the instruction.)

(The final form should not exceed 4 pages, excluding this page and including the References section. Please use Arial, Normal, 10pt fonts and single line spacing.)

Important Notes

A project could be proposed by (i) a student group, (ii) a company, or (iii) a faculty member of the department by filling in this form and submitting it to 49x-proposal@ceng.metu.edu.tr by e-mail. For a project proposal, there might be a sponsoring company supporting the project and providing some form(s) of resources for the project.

If your proposal might contain a patentable idea or any type of intellectual property, please first make sure to follow appropriate steps (apply for a patent, etc.) before sending your idea to us. Once this form is received from you, the instructor(s) and the department has no responsibility regarding to intellectual properties of your project/idea.

All sources and documentation developed for this course are assumed to be public domain (GPL, CC or similar license) by default. If you need any exception for license and disclosure of project work, please specify this in detail in IP section of the form.

Please note that source codes, documents and issue tracking should be kept in department servers. No restrictions can be requested for limiting faculty and assistants access to student work.

Project Information

Title

A Self-order System for Café and Restaurants

Target

Public Restricted

This is a student proposal for our own group. (Group 34)

Proposer Information

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IP (Intellectual Property) Information

IP rights will belong to our group.

Project Description and Background Information

Description

Our project is a system which targets the restaurant and the cafes. The system has two main parts as software and hardware. The hardware part designed by us will have a special chip which uses BLE (Bluetooth Low Energy) technology and would be in touch with smart phones while the software part is composed of a mobile application which is in touch with server and our chip, and a desktop application which is in touch with server. The project will aim to reach three type of users.

First and the main users will be the restaurant and café customers who has mobile application at their smart phones. After customers are in touch with the chip on the table, our application first determine the exact place at the restaurants/cafes in which the customers use the application, and then the application will specify the content to show the customers. After this step, customers will be able to see the menu, to follow his/her order status, to have detailed check, and also pay the bill with their smart phones.

Second type users will be the employees in the restaurants/cafes. The mobile application will send a notification to the employees to inform them about the orders of customers.

Third and last type of users will be the managers at restaurants/cafes. The manager will have a panel which make him/her be able to modify the menu, to check and control the general status of tables, to get the statistical data of their sales at the end of day, etc. This make the manager as the highest level controller in their company database.

Similar Products/Projects

After we did a feasibility study we saw that a few restaurants use tablet instead of classic hard copy menus, even tablets cannot come a little closer to our projects. Also, there is an electronic device that is called iBeacon which has the same working principle with our hardware system. However, iBeacon device has very limited usage and has a totally closed circuit design, so it makes this device less controllable. In short there is not any project that we mentioned at description.

Justification of the proposal

Our purpose is to increase the usage of smart phone technology at companies like café and restaurants to get more interactive service from those companies. The hardware will provide us to learn where the mobile application user is without using the GPS, mobile data or an operating system. Our chip will work the same principle with beacons and increase the usage of beacons that has a limited usage nowadays.

Contributions, Innovation and Originality Aspects of the Project

As a typical café/restaurant customer, we know that all orders include an interaction between waiter/waitress and us. This interaction sometimes cause misunderstandings and loss of time. Our project aims to reduce this problems with a technological approach.

Our chip will work mostly the same principle with beacons and will increase the areas of usage of beacons.

Technical Aspects of the Project

Communication Hardware (Specialized beacon)
Mobile application
Admin Panel for Companies (Windows application)
Employee Information Panel
Server and database side

Targeted Output, Targeted User/Domain Profile

The end products will be a small specialized beacon, a mobile application, Admin and Employee applications. Basically, these end products will be used to supply a good customer satisfaction in restaurant and cafes. Customer will start the mobile application from his/her smart phone, s/he will get close his/her phone with our hardware that has been put on all the tables separately, s/he will create his order, s/he will be able to check the status of order (like; order waiting for approval, order approved and getting ready, order arrived to table) and much more.

Also, the companies will use their desktop applications to get full control in their daily operation. If this project may change the ordering habits and improve the service qualities of cafes and restaurants, this will end up as success for us.

Project Development Environment

PHP My Admin (For Server and Database, PHP language is going to be used)
Android Studio (For Mobile Application, Java language is going to be used)
Visual Studio (For Desktop Application, C# language is going to be used)
Net Beans and Apache Tomcat (For Local Server (it will be used in unit test level), Java language is going to be used)
SQL Language (For database control)
Photo editing and Image tools like Photoshop, Adobe Flash (For User Interface design)

External Support

In the future phases of the project, we may take technical support from the Professors and TA's according to problems that we faced with.

References

<https://developer.apple.com/ibeacon/>