

Proposal for Undergraduate Research Grant, Spring 2020

The Design and Development of *EasyOrder*, A Smart Phone Application

I. Introduction

My grandparents have owned an Italian deli shop since the 1940s. It's been doing really well for itself lately, but when it comes to taking orders, they still do it in a very dated fashion. They write all incoming orders on Post-it notes. It's a very inefficient and frustrating process, especially around the holiday season when business really spikes. Orders are lost because the post-it note went missing, orders are made multiple times because we have no way of documenting when an order was complete, and other workers have illegible hand-writing. As a student, I strive to find a solution to this problem. I decided to design a mobile social networking application modifiable to fit any small business model.

An existing piece of software that is similar to this design would be PrISM's POS system^[1]. PrISM is a position-of-sale (POS) system commonly used in pizzerias. It's operated on a computer, typically by a cashier, and once an order has been placed through the system, a ticket is printed with information about the order. Similarly, *EasyOrder* will work the same way in the sense that an employee will take in an order and place through *EasyOrder*'s system, however, it will differ in the fact that *EasyOrder* will solely operate your mobile device and instead of ticket printing with information about the order, all information will be stored on the application.

II. Significance and Objectives

PrISM POS is great tool especially for fast-paced work environments. In contrast, *EasyOrder* will be made most beneficial to laid back business models that receive an abundance of orders such as my grandparent's store.

With this mobile application, placing and filling orders will be much easier. I plan to implement filtering features so that orders can be filled more efficiently. This filtering feature will list out all ordered items under a customer's name that can only be worked on in certain areas of the shop. In addition, I plan to implement an activity log which will record when an order is currently being worked on, that way there are no duplicate orders made by mistake. The activity log will make it clear to everyone using the app who is working on what order.

Throughout this process, I hope to learn more about my field of study as well as more about the application development process. In particular, I hope to learn more about Android Studios and all its functionalities.

In summary, the objectives of the project are to:

- Design and implement
- Learn the functionalities of Android Studio
- Learn about the application development process

III. Methodology and Planning

The proposed application adopts mobile network as a communication platform to deliver real time orders. Figure 1 one on the following page is a diagram that depicts the interaction between user and the server. As stated in the depiction, a database is required to store and query the data.

Amazon Web Services^[2] (AWS) is cloud computing service that offers servers for a small monthly cost. If I obtain this grant I plan to allocate a majority of my funds to this service. Figure 2 on the following page depicts the overall app layout I hope to achieve. To get application up and running on iOS devices however, I will access to a macOS device. Mac-in-the-Cloud^[3] is macOS simulator used to write mobile application for iOS devices. If I obtain this grant, I plan on allocating the rest of my funds to this service.

The timeline of this project is as follows:

- (Week 1 – Week 2) Analyze and compare existing system
- (Week 2 – Week 4) Select software tool and design data structures
- (Week 4 – Week 12) Design
- (Week 12 – Week13) Test
- (Week 13 – Week 14) Report

Figure 1 The diagram below shows the flow of data between the user and the server.

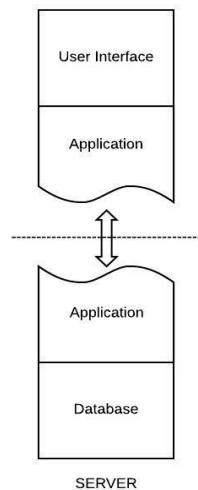
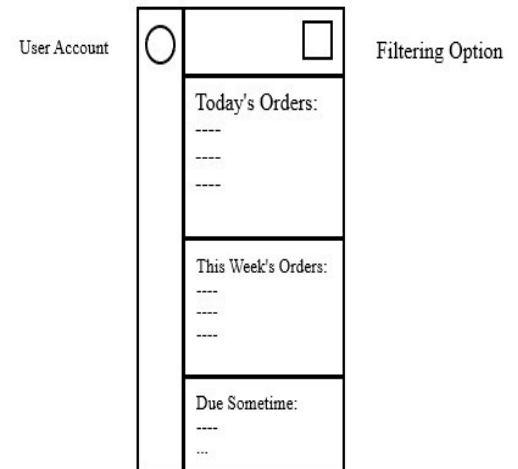


Figure 2 The below image is a rough layout of how I want the application to look.



IV. References

- [1] *MacInCloud*. (2011). Retrieved from MacInCloud Computing: <https://www.macincloud.com/>
- [2] *POS Point of Sale System*. (n.d.). Retrieved from PDQ: https://www.pdqpos.com/?ppc_keyword=prism%20pos&gclid=CjwKCAiAj-_xBRBjEiwAmRbqYt6m1GdUoADzr4x-BJ2RdTUdRtSnfW3w1zeIAh2K8kTrF8lhKeOvphoCTLMQAvD_BwE
- [3] *AWS*. Retrieved from Amazon: <https://aws.amazon.com/>