

## Preloved Donation Mobile Application

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**Abstract:** *There are not many mobile application was build for donation especially the donation of preloved item. Preloved means previously owned or secondhand in other words. Thus, a mobile application was proposed to encourage more people to make donation. The features of the proposed application include list of non-profit organization. Searching for qualified non-profit organization is the main problem that prevents people to made donation. So, this application help to solve the problem by provide list of non-profit organization in Johor. To ease the process of donation, message feature was build so that the donor can provide more detail on the donation and ask questions to the non-profit organizations. Besides, push notification feature in the application can help the non-profit organization to notify the donor about donation needed by them. Next, this application implement agile methodology and also layered architecture in the development process. Last but not least, this application helps in connecting the donor and non-profit organization through mobile application and hope that the application can bring benefits to both parties and make the donation activity easy to be done.*

**Keywords:** Non-profit organization, Mobile, Android, Preloved, Donation

### 1.0 Introduction

In every person wardrobe must have clothes that never been used due to some reason like does not fit to their body or old clothes that they no longer used. People tend to throw those clothes even though the clothes are still in good condition and nice to wear. According to Environmental Protection Agency (EPA) and the Council for Textile Recycling, in the U.S, they generate an average of 25 billion pounds of textiles (clothes, shoes, and bedding) each year and only recycle or donate about 15% of that. The rest (85% or 21 billion pounds) usually ends up in the trash.

In Malaysia, there are two ways that are often performed by the donors of used items. The first way is through a collection of used items by placing a container. These containers are usually provided by non-profit organizations that are actively involved in community service and placed in a residential area. If anyone wants to donate used items, they must collect these items first and place it in the container provided. The advantage obtained through this method is time-saving because the container is positioned near donor residential area. But there are also disadvantages in this method because the container is simply placed in some residential areas. It will be difficult for those who are far from those residential area to do the donation. In addition, the goods are placed in containers are not secured because of the high potential for being stolen by unscrupulous because these container are placed in an open area and a relatively long period of time for the non-profit organizations to collect the item.

The second method is to search through the website. Many non-profit agencies have their own website. If donor are interested in donating to them, there are number to call or donor can continue to deliver the goods direct to the organization based on the address given in the websites. Moreover, this website only serves as a medium to introduce their organization to the public. The process to donate is still done manually where donor need to call in advance for the organization concerned to further donate. Sometimes there are critical situation where donation is really need by the organization due to certain circumstances such as flood, wildfire or other natural disaster but sadly, the donations are less than the expected amount. This situation can be in several reason such as the donor does not have information about the donation needed and it could be the organization itself does not have medium to announce about the donation or if they have the medium, the medium itself are difficult to be access by the donor.

So, a proper medium is necessary so that both side, the donor and the non-profit organization can easily reached each other.

Based on the two methods which are collection of used items by placing a donation container and search through the website, it was found that the process involved both donor and the non-profit organization. The problem is that both sides are difficult to contact each other because of lack information and contact person. Besides they have no medium that can connect or ease them to communicate to each other. Although some of them may have a websites but the websites are not efficient enough. Thus, this application is proposed to solve the problem by providing the donor complete information about the organization that accept the used item for donation and also ease the communication for both side which is the donor and the non-profit organizations. Since the application proposed is going to be developed in Android technology on mobile phone, the application can be access everywhere and anytime as long as it is connected to the internet. English is used as the language of the application.

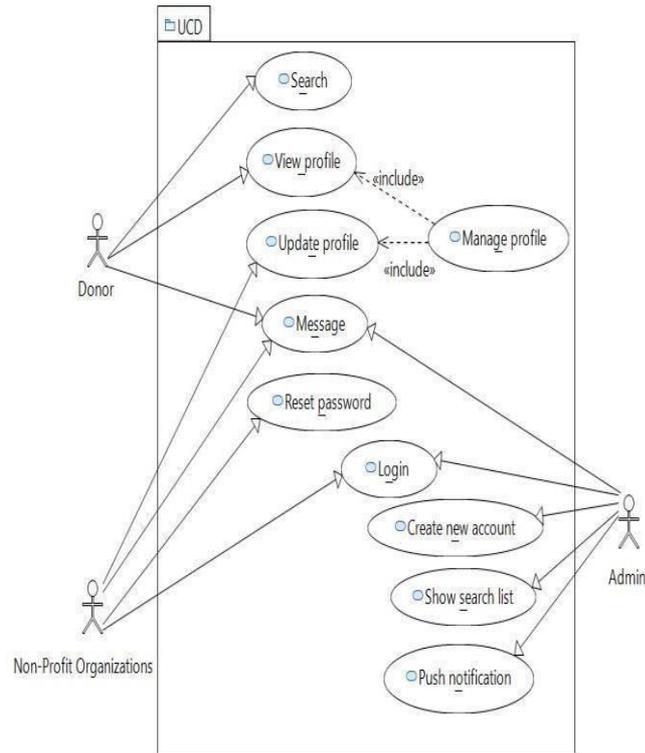
## **2.0 Methodology**

Agile methodology is widely used in nowadays system development because agile development focuses on achieving personal, technical, and organizational successes. Preloved Donation Mobile Application divides the methodology in three parts. The first part is user stories where the functional requirements is separated according to their level of importance. The important function is developed first and followed by other functions according to the priorities. The highest priority is to satisfy the customer through early and continuous delivery of valuable software. The second part in the methodology is estimation where process of deciding duration of time for a user story to be completely finished. Each user story have different estimation duration of time.

Last but not least, the third part is iteration where a user story will do the testing phase. Once the user story is successfully finished testing phase, the user story can be delivered and the process of development life cycle is iterate back with next user story. In case of the user story is failed during the testing phase, planning phase is done to decide whether to continue develop the user story or not. User story is eliminated from the development process if the user story took longer time from initial estimation time to completed.

## **3.0 Results**

Use case model was used to relate the requirements and functions of the system to respective actor. This model shows how the functions and the actor are connected and related to each other. Figure 1 shows the use case diagram of the system.



**Figure 1** Preloved Donation Mobile Application use case diagram.

System architecture is an architecture design that concerned with how a system should be organized and designed of the overall structure of the system. Besides, architecture design identifies the main structural components in Preloved Donation Mobile Application and the relationship between them. The output of the architecture design is the architecture model which describe how the Preloved Donation Mobile Application is organized as a set of functional components. Besides, architecture is an artifact that can be analyzed to determine the quality attributes achievements and also serve as the project blueprint.

Figure 2 illustrates the package for presentation, business and database layer. Presentation layer consists of two package which are data collection and data display package. Data collection package involves class of control manager, profile and user meanwhile data display package involves class of AccountUI, LoginUI and ShowSearchListRecordUI. The business layer package involves class message, system and user. On the other hand, database layer involves DBMS and queryEngine.

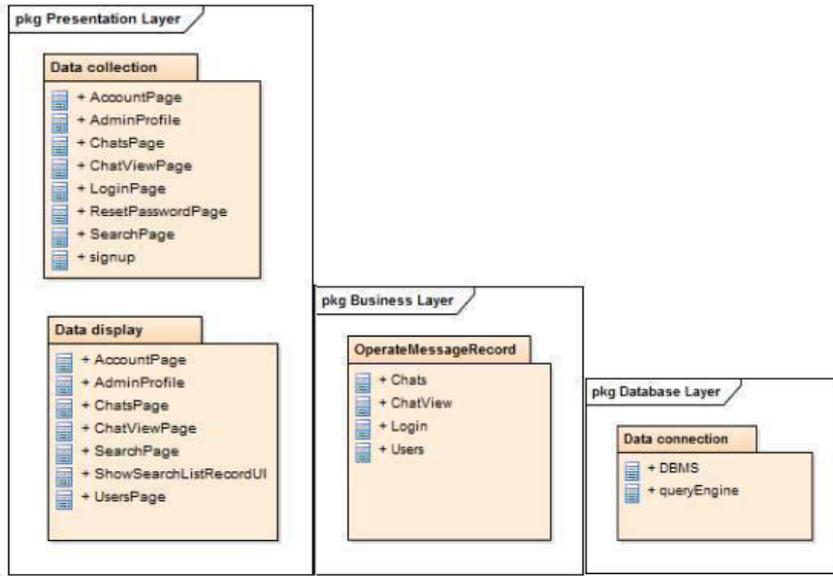


Figure 2 Preloved Donation Mobile Application layered architecture

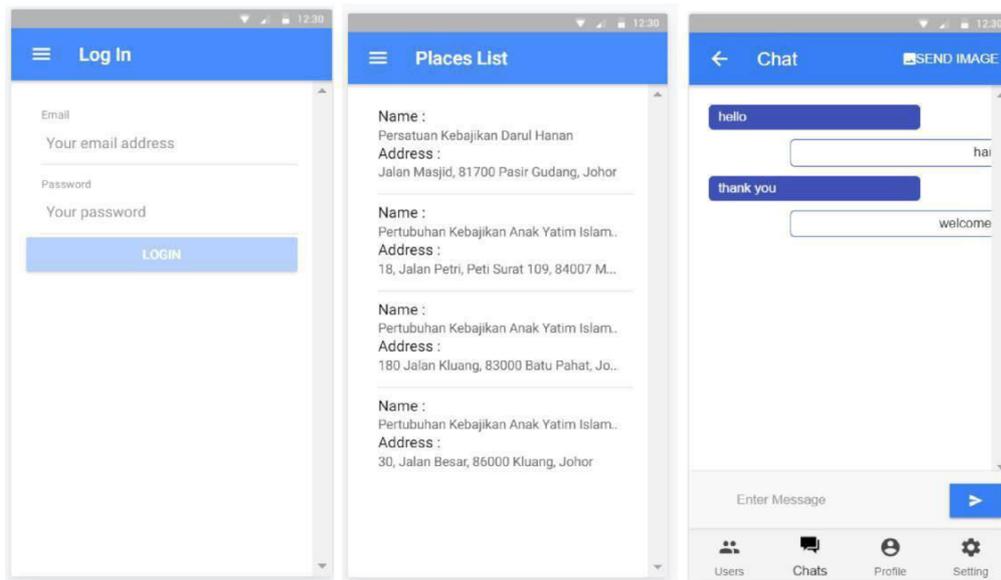


Figure 3 Preloved Donation Mobile Application interface.

#### 4.0 Discussion

This project is develop with the aim to build a mobile application that encourage people to donate secondhand goods. The application is going to help the donor to find the non-profit organization that need secondhand goods donation by categorized the non-profit organization into orphanage and old folks home. The application also provide information about the places for donor to review and acknowledge what kind of goods the organization need currently. Besides, there are also message feature where donor can lively interact with the

organization to know more details about them or the process of donation that can be made. Overall, there are advantages to those who loved to made charity especially in terms of donation of preloved goods. In Malaysia, there are plenty of non-profit organization that accept the preloved donation but does not exposed to the public because there are no platform that suitable for them to announce it. It is hoped that the application can bring a lot of goodness and help people out there to make donation more even frequently in order to make the life of people who are in need much better.

## 5.0 Conclusion

Application that promotes the donation of preloved goods is not many in market compared to web based system. Hence, this application is an initiative that hopes people will inspire to make donation more on preloved item instead of online money transfer. This application also offer features that is user-friendly to used. Besides, the application provide benefits for both the donor and non-profit organizations. The push notification allow the organizations to notify the donor whenever they need donation meanwhile the donor can get updated notification of the non-profit organizations. This can ensure long-lasting relationship between the donor and the organizations.

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