Mobile Application Food GiveAway

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Abstract. Food Giveaway is an Android based mobile application of food giveaway system. Nowadays, most restaurants in Malaysia will discard food that is not sold out because it can not be used on the next day due to stale. There are also many university students who hold hunger because they do not have enough money as a result of rising of cost living. The existing system that use manual process is not systematic and efficient as there are problem where student did not get chance to get the food at food pick up location as it already run out. This is because the students did not know whether the food is still there or not. Besides that, the students is not always alert to when there is food giveaway conducted. To solve this issue, Android mobile application, Food GiveAway is developed to serve as a medium between the restaurant and student for providing food aid to student effectively.

Keywords: Food sharing, food bank.

1   Introduction

The students are struggling in universities nowadays cause of lack of money to eat due to the rising cost of living. A survey conducted by the Muslim Volunteer Malaysia Association of 25632 from six public universities in Malaysia has shown that more than half of respondents answer that they cannot afford to spend RM5 a day on food while many were living on plain rice with one fried egg or ate on packets of instant noodles [1].

According to Solid Waste Management and Public Cleansing Corporation (SWCorp Malaysia), Datuk Abdul Rahim Md Noor said the highest solid waste is food waste which is 45 percent of all solid waste. The percentage of food waste also increased 15-20 percent during the festive season, especially during Ramadan. The restaurant is one of the biggest contributors to food waste. One to two tonnes of food thrown away every day from the restaurant [2].

Everyday, edible food is frequently thrown away. Hunger continues to be a serious global challenge. Edible food is thrown away because of lack of knowledge who to give it to and how to donate. With the growing of information technology, a mobile application Food GiveAway can help reducing hunger among students of Universiti Teknologi Malaysia. Furthermore, this application can be used by a restaurant in Taman Universiti, Skudai restaurants that can help reduce food waste by donating excess edible food to students in need.

2   Objectives

The objectives for this project is:(1) to study existing system and analyse the problem that is faced by students of UTM when they want to get food whenever food giveaway is conducted,(2) to design and develop a mobile application to giveaway surplus edible food, and (3) to test the effectiveness of this proposed system by the users.

3   Methodology

Prototyping model is the system development methodology chosen to develop mobile application Food GiveAway. This is because the developer needs to have a lot of interaction with the client. Besides that the developer can get immediate feedback immediately as soon as prototype has been build and then show it to client. It also allows for a flexible design and development of the system. The feedback that is collected from the client will be used to make some changes on the prototype and also design based on the client's feedback. This is to make sure that errors and missing functionality can be detected earlier.

3.1   Requirements Gathering and Analysis

Prototyping model is started with requirement analysis. The requirement analysis is divided into user requirements and system requirements. User requirements is gathered by doing survey session with students of Universiti Teknologi Malaysia and interview session with Puan Saadiah, restaurant owner of Restoran Lubuk Selera, Taman Universiti, Skudai. Literature review is the way to gather and analyse information that is required for the project.

3.2   Design

In this phase, system design is made from requirement that have been specify in the first phase and from the research on food giveaway existing system. The design made is not really detail but it includes a detailed aspect that is important in the system where it gives an idea of the system to the client. Use case diagrams is used to show relationship between actors and process in Food GiveAway. The database is designed using class diagram and relationship schemes.

3.3   Build Prototype

Information that is gathered from design is use to form a prototype. It shows a 'rough' design of the system. In this phase, Java programming will be applied to develop prototypes of Food GiveAway. Modification of the prototypes will be evolved progressively based on customers feedback that is derived from the evaluation of customer on the prototype. After the customer is satisfied with the prototype, the final version of the system will be develop until it is delivered as final product.

3.4   Customer Evaluation

In this phase, the users evaluate the first prototype, to identify the strengths and weaknesses of prototype, what needs to be or not to be added. The developer collects and analyses the feedback from the customers. If any changes are need to be done, updation need to be done.

3.5   Review and Update

After getting feedback and suggestion from customer, there will be changes need to be done in input data or system environment. Changes likely to be made on first prototype, second prototype and so on. The steps are occur repeatedly as necessary until the customers are satisfied with the prototype that will be represents as final product.

3.6   Development

When the customer is satisfied with the prototype, then the product will be developed by integrating with code.

3.7   Test

Testing is done by executing the system with selected data to uncover bugs. It also to make sure the system will work as expected. All testing activities is made to make sure the system meet the requirements.

3.8   Maintenance

Maintenance is done on the system to make sure the system is up and running in the respective environment. It is also to fix any issue arises in the system. The system also will be enhanced to integrate more features.
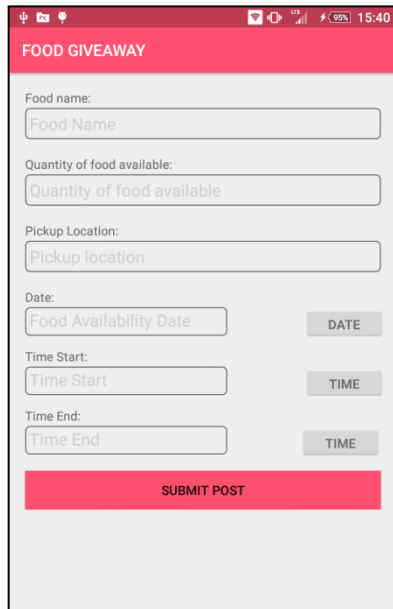
4   Result

The result of the study is a Android mobile application, Food GiveAway which is to help the student of Universiti Teknologi Malaysia to get food aid from restaurant in Taman Universiti due the student cannot afford to buy enough food until it make them to force themselves to keep hunger or eat food that is cheap that is not really good for their health. The restaurant in Taman Universiti also able to use the system in order to reduce food from become wastage by donating the food that is not sold out to the students by using this Food GiveAway system.

   With Food GiveAway system, user restaurant able to create new post regrading the food giveaway that restaurant want to donate. User restaurant also can view and edit the post that they have created. User restaurant can view the list details of receiver who reserved the food. The student who have taken the food, the user restaurant will click button TAKEN for the student who taken the food or click button NOT TAKEN for student who did not take the food.

   The user student able to see all the post that have been created by restaurant. User student also able to reserved the food from the post that have been created by restaurant.

Then, the student able to see list of food that user student reserved. User student able to cancel back the reservation if the user student does not want the food.

Figure 1 Create new post interface

Figure 2 Post restaurant interface

Figure 1 shows the interface where the user restaurant able to create new post. The post that have been created by user restaurant will be show as Figure 2. Figure 2 shows the interface that have been created by restaurant.
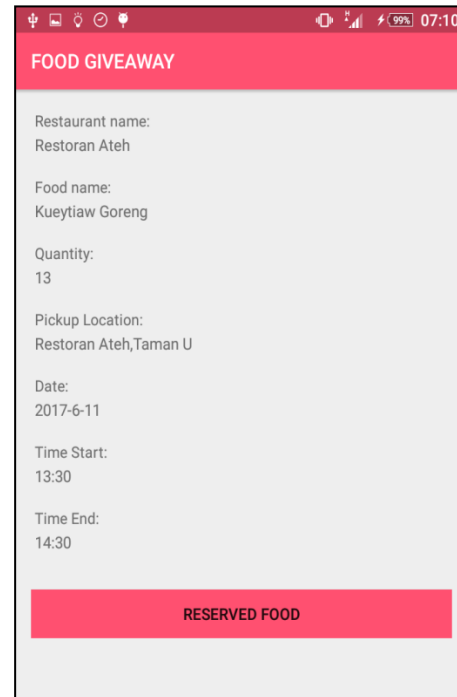
Figure 3 Post student interface

Figure 4 Reserve food interface

Figure 3 shows interface of browse post interface for user student. This interface display all of post of food giveaway that have been created by all restaurant. User can browse the post and view one of the post that user like. When user student click one of the post, it will redirected to interface as as shown in Figure 4. Figure 4 shows the interface where user studen can reserve the food.

5   Discussion

Food GiveAway is developed on online host server, so PHP script and MySQL is used in order to pass and get and change data between user interface and database. Besides that, Food GiveAway Android mobile application is developed by using Android Studio that using Java programming language and XML in order to build the interface.The data from user interface will be passed by using java language to PHP script. Then, the PHP script will execute in order to fetch, manipulating, and store the data to database and also from the database. Then, the PHP script will return back the data to java programming in JSON format.

Password hashing is used in the Food GiveAway system in order to convert the password of user into a one-way derived token for storage. By using the derived token, it makes it impossible to reverse the stored token and get the original password used by the user. This adds a layer of defense in case an attacker gets access to the database storing the password.

6   Conclusion

Food GiveAway system is an Android mobile application, developed in order to is developed as a medium to help the Universiti Teknologi Malaysia's students to get food aid because thay had to hold their hunger because rising of living cost. Food GiveAway system also able to help restaurant to reduce food wastage by donating the food that is not sold out to Universiti Teknologi Malaysia's students.

References

1. Tang Ruxuny, "Malaysian Students Don't Have Enough Money To Feed Themselves. But Why Are They So Broke?," 8 January 2016. [Online]. Available: http://says.com/my/news/poor-malaysian-students
2. Bernama, "Better eating habits could help solid waste management," 2015. [Online]. Available: http://www.dailyexpress.com.my/news.cfm?NewsID=100238