

No Hunger: An Application for Collection of Leftover Food Items of Restaurants

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Abstract:

Millions of people living in Pakistan having plenty of food still many of them go to bed hungry without eating anything. The food here is wasted in great amounts. If this cycle continued it can cause, people dying in hunger and people going for suicide because they cannot afford the food. Like many other applications working all over the world to manage the uneaten leftover meals, "No Hunger" is an application working towards the solution of this problem which is the management of the leftover meals at the restaurants and providing it to the needy and poor people in Pakistan. No Hunger application provides the communication medium between the riders and the respective restaurants who are willing to give their leftover food. Since hunger is an issue that affects the poor the most leaving them without the basic needs and one of them is food. Through this app some of the lives can be saved.

. Keywords— Leftover food, restaurants, Application Android Virtual Device, JavaScript Object Notation

I. INTRODUCTION

The causes of food waste or loss are numerous and occur at the stages of producing, processing, retailing and consuming. According to a report, 40 per cent of food in Pakistan is wasted. Some statistics specify that about 36 million tons food is wasted every year in Pakistan. It's normalized thing in Pakistan, at least 40 percent of food is wasted in only wedding ceremonies. About 870kg food is loss and wasted every day in a single restaurant. According to the Global Hunger Index in 2019, Pakistan ranks 94th out of 117 countries with a score of 28.5 and suffers from a level of hunger that is serious. Pakistan is a country with most malnourished and underprivileged regions i.e., thar. The suicide rate in this region is high. Pakistan is an underdeveloped country, one of the main reasons is lack of food. The hunger will only be controlled by avoiding food wastage in any way Also during the wedding season since they make a good amount of food instead of throwing the extra food, a system should be ensured for the management of the uneaten food.[1]

'NO HUNGER' application works in similar way, trying to reach out to the poor in need of the food. It's an android application. The application deals with different restaurants who are willing to donate their uneaten food free of cost. It is a communication app between the food donors, riders, and the common people. Through the app the users can easily communicate, track, and send notification to each other. This application is owned by a particular restaurant, the riders working for the restaurant will collect the extra food and will deliver to the location fixed by the people in need.

II. PROBLEM STATEMENT

Everybody cannot afford the three-square meals of the day. In Pakistan there is huge difference between the elite class and the middle class. The people belonging to the elite class sure knows how to waste the food while the middle-class people does not even have the food to eat. These people are dying from starvation. The starvation cannot end but it can be reduced. Moreover, to misspend the huge amounts of uneaten/eaten food is a quotidian event of this country. The food wasting needs to get organized so that the people in need gets the uneaten food else the hunger eventually kills.

III. RELATED WORK

Food wastage is the global problem [2,3] now because of the increasing glamorous restaurants building all over the city which make enormous amounts of food on day-to-day basis, royal and local weddings, which only results in huge piles of leftover food.[4,5] There are several applications almost like NO HUNGER, from all over the world and in Pakistan that are working on the same cause that is management of the uneaten leftover food.[6,7]

Some of the top applications working worldwide on the management of leftover food are:

Olio: olio is a portable application for food sharing, planning to lessen the food squander.

Too good to go: This application permits you to buy unsold food from top diners towards the end of the service to keep it from being discarded.

Karma: Karma helps restaurants and cafes reduce food waste, instead of throwing the surplus food away they can now sell it through karma. The consumers buy food directly in the app as take away and get high quality food for less money.

Food panda: Place order from different restaurants around you and track food in real time. From pick up to delivery points all food orders can now be tracked in real time through the application.

Eat Mubarak: Explore restaurants in your city. View menus, pictures, phone numbers, directions, user views and all the other information you need to choose a restaurant for food delivery.

Despite of all these app, No Hunger stands out in its cause because No Hunger work for the social cause, there is no cost required to get food or deliver it to needy, No Hunger is itself a communication platform which could be used to provide synchronization between applications working for the same cause.

IV. IMPLEMENTATION

LAYOUT OF NO HUNGER APP : Fig.1 is a layout of overall app. The app includes the following activities



Fig.1 Layout of NoHunger App.

APPLICATION ACTIVITY: Application activity includes the following screens of our android app.

1. Splash Screen

It is First screen of an app it has small animation of logo which attract the user from starting of the app it always appears at the start of app. Whenever any app is started it take few times to load complete application so splash screen provides a good user experience to user.

2. Welcome Activity

Second activity which contains two buttons for navigation of the interface one for rider and one for the restaurant/donor. The rider selects rider button for login as a rider and for restaurant for login as a restaurant after login in rider can accept the request which is generated by the restaurant. After login as a restaurant, it generates food request for rider which rider accept and deliver the food.

3. Restaurant Login/Register Activity

This contains the sign up and login tabs. If the user is not registered there is link for another activity for registration of email and password. If user already registered then it will prompt to signup button the firebase authentication process is implemented over these two tabs, the email and password is checked and verified from firebase database. Validation is also applied on these two text fields.

4. Rider Login/Register Activity

This activity contains the same Signup and login tabs. If the user is not registered there's link for an additional activity for registration of user with email and password. If user already registered then it will prompt to signing button the firebase authentication process is also implemented here over these two tabs, the e-mail and password is checked and verified from firebase database. Validation is additionally applied on these two text fields.

5. Main Activity (Restaurant)

The Restaurant main activity start with Google Map which has 3 buttons Setting, Logout and Make a call setting button is used to Edit Information of Restaurant like name and phone Number. Logout Button is used to logout from the activity. And make a call Button is used to create an order for rider. The Restaurant main activity start with Google Map which has 3 buttons Setting, Logout and Make a call setting button is used to Edit Information of Restaurant like name and phone Number. Logout Button is used to logout from the activity. And make a call Button is used to create an order for rider.

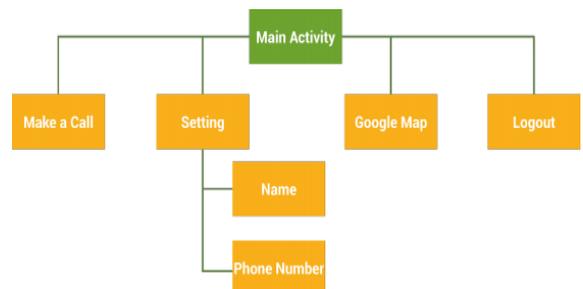


Fig.2 Main Activity for Restaurant.

6. Main Activity (Rider)

Rider activity is same as restaurant it is also start with google map with 2 buttons setting and logout. Logout is used sign out from application and setting is you to change information like name, phone number and vehicle name. And accept a call button is Come when Ever Restaurant creates an order it generate the notification to Rider Activity.

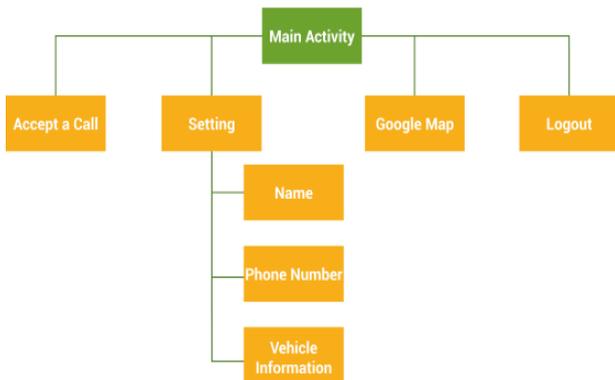


Fig.3 Main Activity for Rider.

7. Restaurant Map Activity

It contains the main code of application it gets the live location of Restaurant and show in Map. Restaurant create an order in this activity by clicking on make a call button when restaurant creates an order notification is generated and send to rider activity. After order creation restaurant can logout with logout button.

8. Rider Map Activity

It is same is Restaurant map Activity but it has no make a Call button but it has Accept a call Button when restaurant creates an order so rider has an option to accept the offer or decline the offer if rider accept the order it get the restaurant location where he pick the food and deliver it to needy people.

9. Settings Activity of Rider and Restaurant:

In this activity user can add profile picture and other details of the rider and restaurant. We can also edit that information after adding the information.

10. Interface of Needy people Registration Form:

In this activity there are 4 Input fields and 1 submit button. The First field is name of the person who is registering the needy people and in Second field it asks for contact number of the person who is registering the needy people. Third field is for number of needy people at that place and in last Field address of the needy people. Submit button is used to save all that information to data base.

V. RESULTS

We have performed different test on our app to check its performance and viability, the results are described in this section.

1. RESULT OF ROBO TESTING

The Figure shows the test Result which state that the Robo test for NO HUNGER android application is successfully passed. The test also states that it encounters 12 warnings and 5 minor issues in this application.

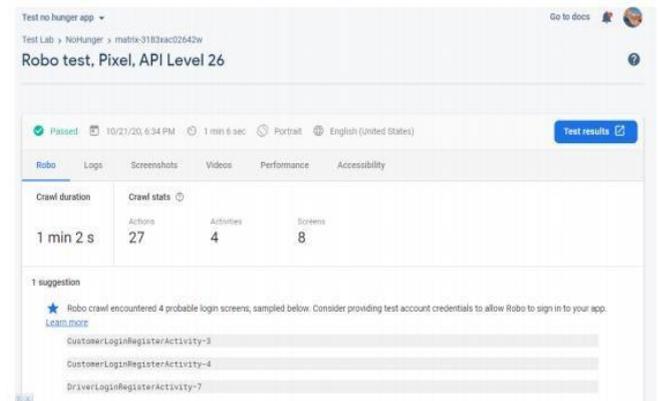


Fig.4 Robo test for NO HUNGER

2. PERFORMANCE

Figure 5 show the performance Graph of Android Application. Graphics stats are 35% Missed Sync, 0% High input Latency, 43% Slow UI thread, 94% Slow draw commands and 1% Slow Bitmap Uploads. Application Time to initial display is 786ms.

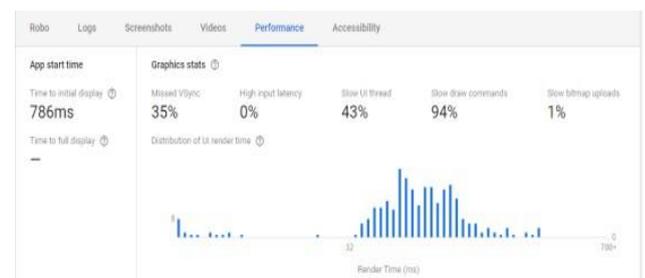


Fig.5 Performance test for No Hunger

3. CPU USAGE GRAPH:

Figure 6 is a CPU Usage graph of the device that shows how much CPU is utilized by the android application when it is running The x-axis shows the time in sec and y-axis contains the CPU usage in percent.



Fig.6 CPU usage by No Hunger app

4. MEMORY USAGE GRAPH:

Figure 7 graph shows how much memory is used by NO HUNGER android application while running. It takes maximum 200KB of memory in its complete Life Cycle.



Fig.7 Memory usage by No Hunger app

5. NETWORK USAGE GRAPH:

Network is very important for our app because it fetches current location of rider and restaurant. Figure 8 graph shows how much network is used by our android application NO HUNGER. This network graph shows the signal send and received on x-axis and predefined network bandwidth measured in bit per sec on y-axis.



Fig.8 Network Usage by No Hunger app

OVERVIEW

Overview of test shows that 17 issues have been found, 12 warnings and 5 minor issues. 6 warnings and 0 minor issues in Touch target size. Low contrast has 6 warnings and 4 minor issues. Content labeling has 0 warnings and 1 minor issue. Implementation has 0 warning and 0 minor error.



Fig.9 Overview of No Hunger app issues

VI. CONCLUSION

A small scale working on this project gives a positive response NO HUNGER app's main purpose is to work for the food management of the leftover/uneaten food which can help reduce the food that is wasted in large amounts on regular basis. During this technological era, NO HUNGER is a contribution towards the management and reduction in the food wastage from various places like restaurants and the people who can willingly donate any amount of food that is extra or uneaten leftover food in their home. There are so many applications working on the same cause from all over the world and in Pakistan, their main objective is the management of the leftover food, but NO HUNGER is the only android app in Pakistan that is giving away the free food from the restaurants to the needy people, the riders working for this app will deliver the food to the registered needy people with their location given in the map.

One of the limitations of NO HUNGER app is Limited database storage. It is Workable for limited area and is not supported by the IOS App store.

The suggestions for future work of our project were given by the users, the reviewers, and the project team members. Following are the extensions that can be added to the NO HUNGER app in the future.

- No limitations on the number of needy persons.
- Releasing the app on the Play store and IOS App store.
- More peoples and organization who wants to contribute should give a chance.
- Improved authentication of the needy people, to check if the food is delivered to the right people.
- Improved method to check if the food is delivered.
- Easy adding user customization.

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