

CS-5551: Advance Software Engineering

Iteration 4 Report (PG: 7)

4th May 2015

Project Goal:

The project goal is to develop a mobile application for getting immediate help when in danger and a crime management system for the users of this app. This system is intended to help people on time and providing them information about the high crime rate area. Moreover, it encourages people to fire a reporting of suspicious behavior or crime.

Objective:

We are going to create a mobile app that will do the following:

- Get help immediately when you feel threatened.
- Reporting the crime.
- View the crime rate in different areas.

UML Class Diagram:

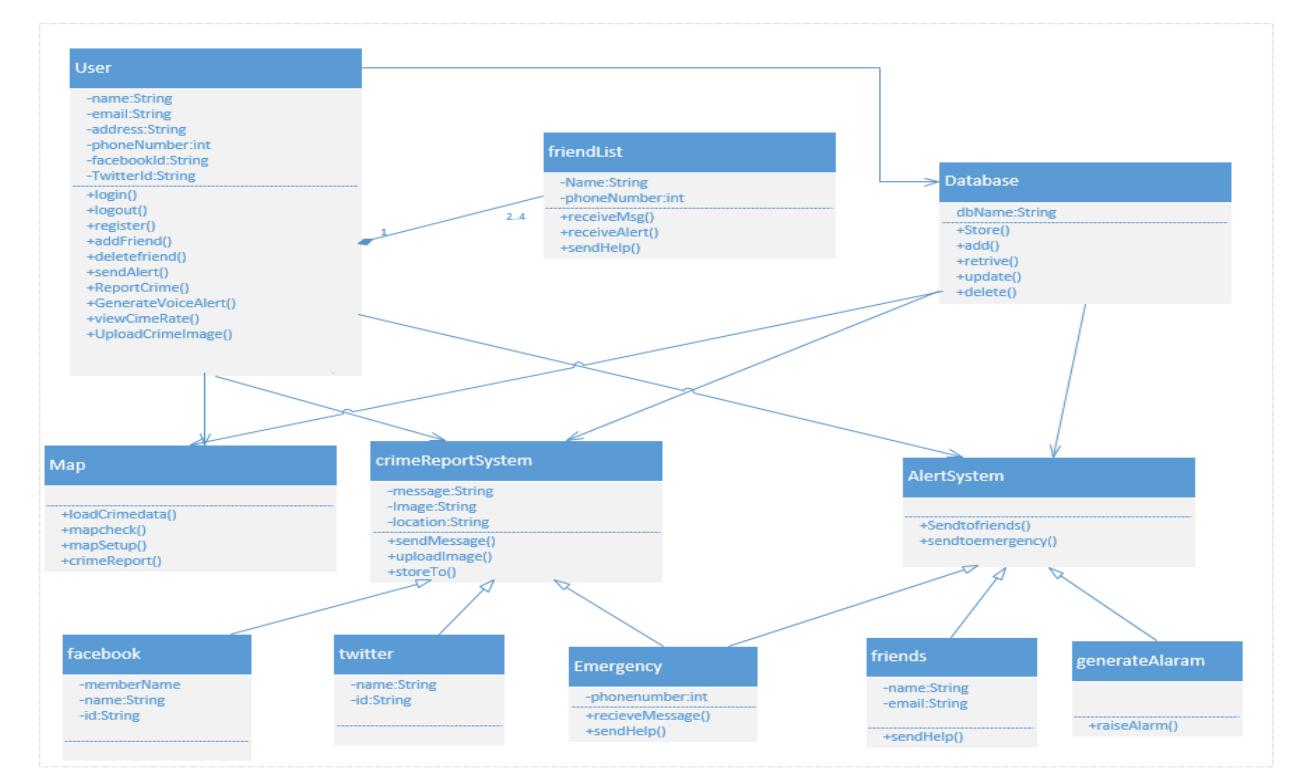


Figure: Class Diagram of entire system

UML Activity Diagram:

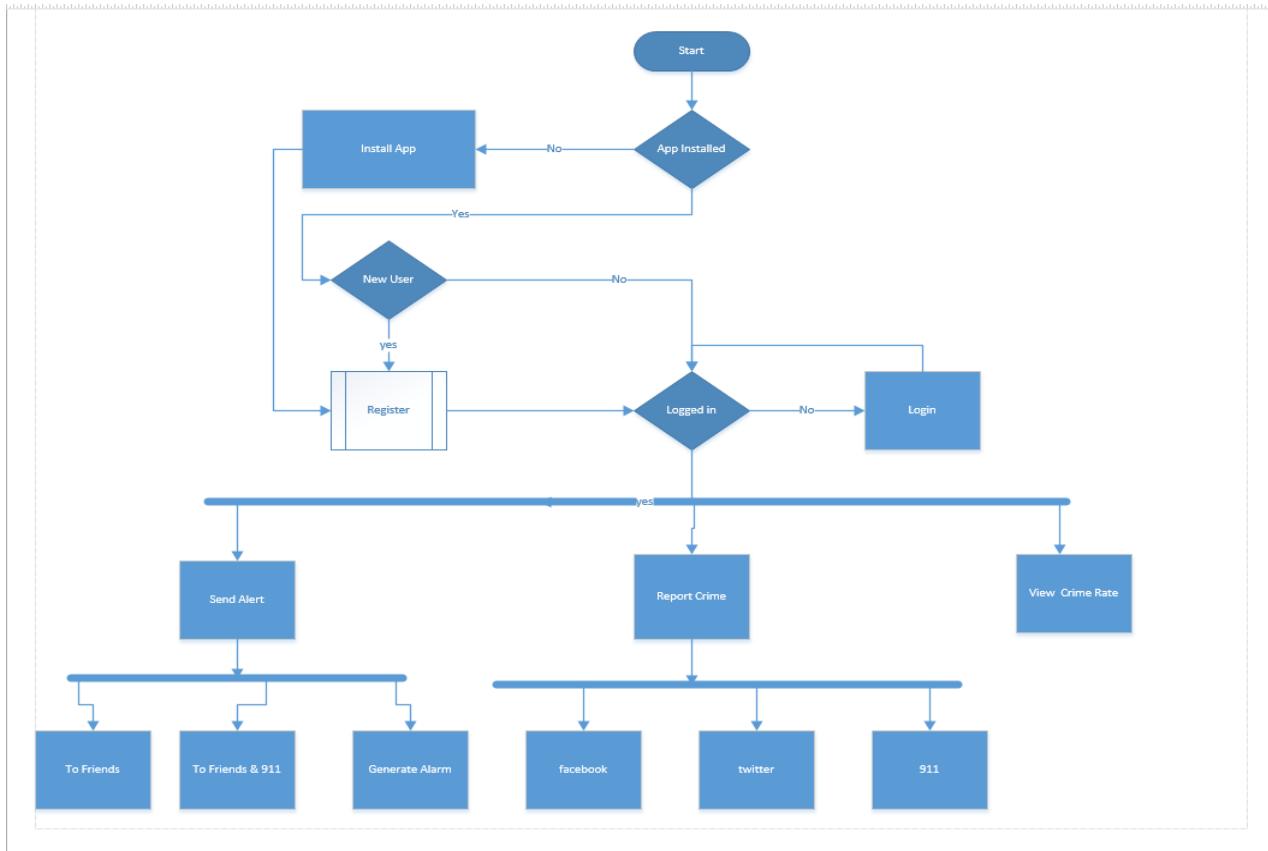


Figure: Activity diagram for the functionalities of the Application.

System Specification:

Existing Services:

- **Geo Location Sharing**

This API is used to share geo-location. This is also used to mark particular place based on latitude, longitude or name etc. This API is supported by most of the browsers and mobile devices.

https://maps.googleapis.com/maps/api/js?v=3.exp&signed_in=true

- **KCMO Crime Data**

With this API we can get crime related data like location, date of crime, type of crime etc. for Kansas City Missouri area.

<https://data.kcmo.org/resource/yu5f-iqbp.json>

- **Twitter API**

This API is used to share content on twitter .

https://twitter.com/intent/tweet?screen_name=twitterapi

- **Census API:**

This API is used to get population details of USA based on zipcode. We have used this information for calculating crime area

http://api.census.gov/data/2013/acs5?get=B00001_001E&for=zip+code+tabulation+area: 64110

New Services to build (SMS Manager)

Service to send SMS to registered friends on alert call

- **Operational Description:**

On clicking alert button SMS is to be sent to registered friends and 911 emergency. Default message and numbers list is sent to the service.

- **Input/output for service**

Input: Phone numbers of friends, Message content to be sent

Output: SMS delivery response.

- **Constraints/exceptions**

Service should always be running.

- **Priorities**

Degree of importance: High priority

Service to upload image and data to the server

- **Operational Description:**

On clicking any option (Report to 911, Share on Twitter, Share on Facebook) the image gets uploaded to the server.

- On user registration the user information will be stored in the server.

- **Input/output for service**

Input: Image and data

Output: Image and data

- **Constraints/exceptions**

Service should always be running.

- **Priorities**

Degree of importance: High priority

Stories: Use case specification template:

Use Case Name	Register to the app
Primary Actor	User
Preconditions	User must have downloaded app
Guarantee (Post Conditions)	It allows user to register in to the app successfully
Main Success Scenario	<ol style="list-style-type: none"> 1. Enter user details like name, phone number, id, twitter, face book and password 2. System sends confirmation message 3. User enters confirmation number 4. User registers maximum 4 friends and minimum 1 5. System sends notification to friends 6. Registration completes
Extensions	<ol style="list-style-type: none"> 1. If any of the inputs given by user is invalid, system asks user to re-enter. 2. If user didn't get confirmation, user can ask the system again 3. If the user enters wrong confirmation number then system asks him to re-enter

Table1: Use case template

Use Case Name	Sending Alert
Primary Actor	Alert system
Preconditions	User must be valid registered user to the app
Guarantee (Post Conditions)	Sends alert message to friends and emergency successfully
Main Success Scenario	<ol style="list-style-type: none"> 1. User decides which alert he wants to send 2. User can choose either Red, blue and green buttons 3. When user chooses red button, system sends alert message to friends and emergency 4. When user selects green button, then system sends alert message to registered friends 5. When user selects blue button, then system raises an alarm
Extensions	None
Special Requirements	None

Table2: Use case template 2

Use Case Name	Reporting a Crime
Primary Actor	User
Preconditions	User must be valid registered user to the app
Guarantee (Post Conditions)	User reports crime to the system successfully
Main Success Scenario	<ol style="list-style-type: none"> 1. User decides how he needs to report a crime 2. User uploads image to face book, twitter or emergency
Extensions	None
Special Requirements	None

Table3: Use case template 3

Use Case Name	View crime area on Google maps
Primary Actor	User
Preconditions	User must be valid registered user to the app
Guarantee (Post Conditions)	User is allowed to view crime rate
Main Success Scenario	<ol style="list-style-type: none"> 1. User can view crime rate and area in Google maps
Extensions	None
Special Requirements	None

Table4: Use case template 4

2) Sprint 1 scrum do:

#13 As system i should be able to get the current location of the user when red or green button is pressed or when posting the crime and add it to the message when the user is in danger he press red button to send message and when the user wants to report crime he clicks on green button. In both the cases, system tracks and gets the gps location. Done Tasks 0 Comments 8
#2 As a system i should be able to take input details from the user and validate them when user login in to the app, system validates his/her login details with the data stored in database and allows user to move to next screen if the input is valid else displays an error message Done Tasks 0 Comments 8
#19 As a system i should display optional information screen This optional information screen takes input as user facebook id and twitter id. This screen is optional and user can skip if he/she doesn't want to provide the details. Done Tasks 0 Comments 8
#18 As a system I should display Registration screen This is first page displayed for the new user after installing the app. User should input all his/her details into this page. Once the user registers successfully, he is ready to move further with the app. Done Tasks 0 Comments 8
#17 As a system i should create sqlite db tables Backend data is stored in the SQ lite database and so far we have created 2 tables to store the login details. Done Tasks 0 Comments 8
#16 Authenticates the user when submit Once the user registers with the app, his/her details are stored in database. When user logs into the app next time, his login credentials are validated with the data base. Done Tasks 0 Comments 8
#15 As a system i should be able to display login screen once the user registers in to the app, it allows him/her to input login details. user should give his username(mobile number) and password which are mandatory fields. Done Tasks 0 Comments 8
#4 user give maximum of 4 friends phone numbers As a user i should be able to input maximum of 4 phone numbers. so when the user is in emergency, message is sent to this registered phone numbers. As a system I should send message confirmation message to the phone numbers after successful registration. Done Tasks 0 Comments 13
#6 As a user i should be able to send message to the registered friends when i pressed green button once the user registers 4 of his friends into the app, a confirmation message is sent to the registered friends when user clicks on green button. This tells the friends that user has registered them to friend list into his app. Done Tasks 0 Comments 13
#7 As a user i should be able to send message to the registered friends and the emergency number when i press red button when the user of the app is in danger, he/she sends a help message to the his registered friends and the nearest emergency number on click of red button. Done Tasks 0 Comments 13
#1 As a system I should be able to get user login details and validate them display login screen and get user login details .In case of wrong details entered system asks to re enter the password. System displays forgot password and an email is sent to the registered email account. Done Tasks 0 Comments 13

Sprint 2: scrum do:

#14 As a system i should be able to store the data that is uploaded by user



when the user enters the registration details that details should be stored in the server and can be fetched directly from the server in future.

Done Tasks | 0 Comments

8

#12 As a user i should be able to view crime rate in the area of my interest



A user is able to view the crime rate of the current location or any other location provided by user. The system directly provides the user the current location and the crime rate. For any other location user needs to enter the location manually.

Done Tasks | 0 Comments

8

#9 As a user i should be able to report crime to the Twitter and upload an image related to the incident.



When the user clicks an crime image then the user is able to post it on twitter with the tweet content.

Done Tasks | 0 Comments

13

#25 As a user i should be able to send message to the registered friends and the emergency number when i press red button through the service created.



Done Tasks | 0 Comments

8

#24 As a user i should be able to send message to the registered friends when i pressed green button through the service created.



Done Tasks | 0 Comments

8

#23 As a system I should be able to test the created services.



Test the services by Nunit testing.

Done Tasks | 0 Comments

5

#22 As a User I should be able to report crime to 911.



When user click on report to 911 then user must be able to upload image, get location , select crime type to report it to 911.

Done Tasks | 0 Comments

13

#21 As a user I should be able to capture the crime image and get it back to the app.



Done Tasks | 0 Comments

8

#20 As a system i should be able to store the image that is uploaded by user.



when the user clicks an image that image should be stored in the server and can be fetched directly from the server in future.

Done Tasks | 0 Comments

13

Sprint 3 scrum do:

#31 As a system I should be able to store the crime survey details in the database.	   	3
Done Tasks 0 Comments		
#30 As a system I should be able take the Crime survey from the user.	   	3
Created a survey page where user can fill a survey about various types of crime.		
Done Tasks 0 Comments		
#29 As a system I should be able to check at the registration page whether user already exist in the system or not.	   	3
At registration page, if user already exist then a toast message will be popped up saying "User already exists".		
Done Tasks 0 Comments		
#28 As a system, I should be able to validate the login credentials of the user.	   	3
At the "Login Page" if user enters the wrong credentials then a toast message will be popped up saying "Incorrect Credentials"		
Done Tasks 0 Comments		
#26 A High Pitched police alarm should be raised on clicking the "White" button on the "Help Page"	   	5
When in a danger and user does not have mobile signal then in this condition user will be able to generate a High Pitched police alarm should be raised on clicking the "White" button on the "Help Page"		
Done Tasks 0 Comments		
#27 As a user, I should able to generate my password in case of forgetting it.	   	3
If user forgets the password, then user can click on the "forgot password" link and then user will be directed to the forgot password page, from where user will get its password through a text message.		
Done Tasks 0 Comments		
#37 As a system I should be able to send the message to other app when the user clicks on send message button.	   	8
app.		
If user would like to send a message through internet from one app to other app, he clicks on send message button. Such that message is sent from one app to other app and also it shows the number of devices registered to that server. Suppose if the receiver end doesn't have internet at the time the message is sent, it waits in the queue and notifies when the receiver gets the internet.		
Done Tasks 0 Comments		
#36 As a system I should be able to register the device on the server for the first time.	   	8
The moment user installs the app, it automatically registers to the server saying that device is registered, else sends a message that device is unregistered at server.		
Done Tasks 0 Comments		
#35 As a user I should be able to report the crime to 911.	   	5
Reporting the crime to 911 with the crime details and image of the crime.		
Done Tasks 0 Comments		
#34 As a system I should be able to upload the image to the database.	   	5
Done Tasks 0 Comments		
#33 As a system I should be able to display the crime rate to the user.	   	5
Based on the survey that user had filled during the registration time, Crime rate would be displayed.		
Done Tasks 0 Comments		
#32 Crime rate calculation algorithm.	   	5
Created an algorithm for calculating the crime rate in a particular area based on number of reported cases in that area and total population in that area.		
Done Tasks 0 Comments		

Sprint 4: Implementation:

1) Screenshots:



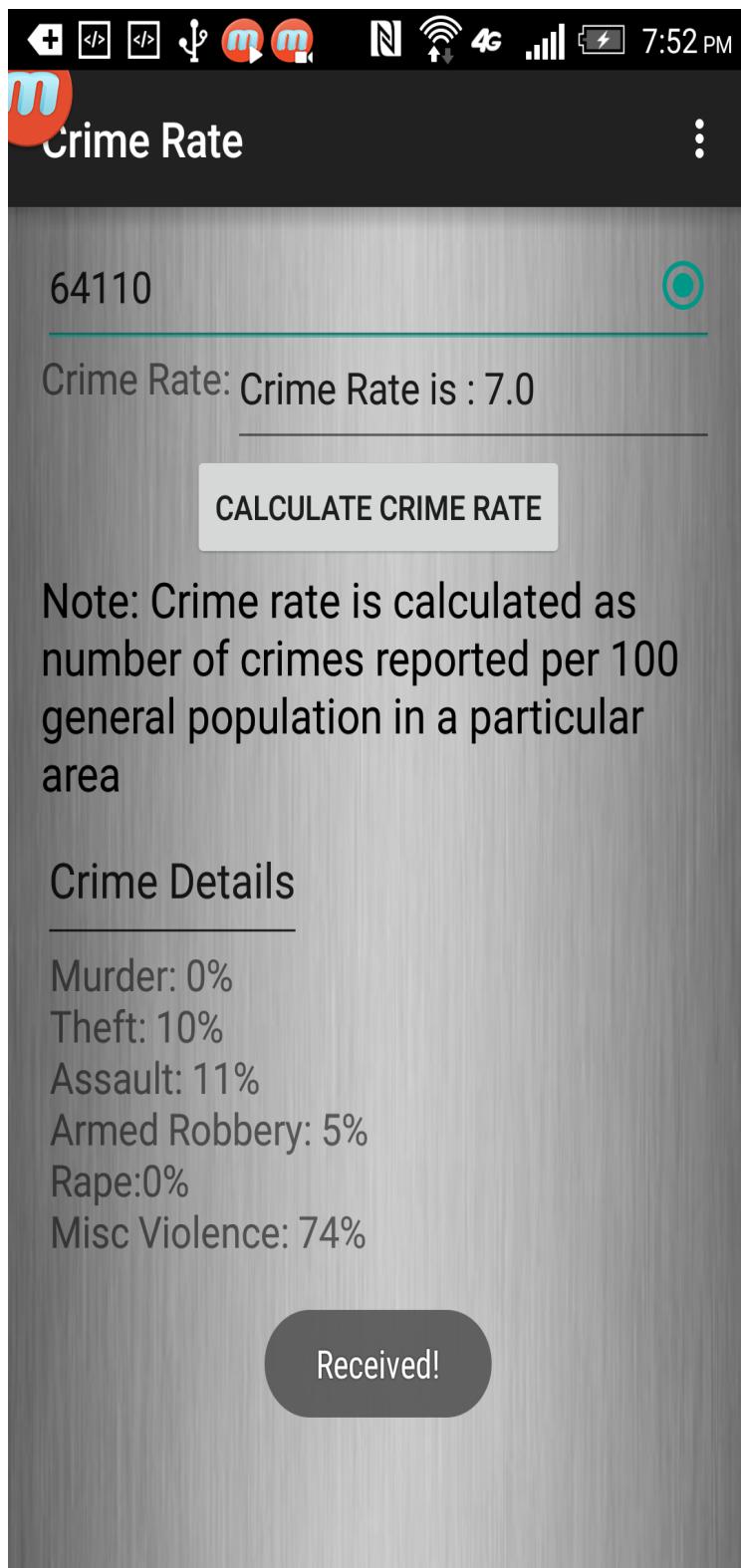
Screenshot: Survey Page

- During registration process, user has been asked to fill a survey page. Based on this survey, crime rate will be displayed to the user.
- Since this is an optional page, if user chooses to take the survey then user should make sure that all the crime should be assigned to some priority, no two crimes can have same priority and assigned priority cannot be 0.



Screenshot: Survey Page

- Note: If user assigns same priority to any 2 crimes then an error message is thrown by the system as shown in the screen shot.

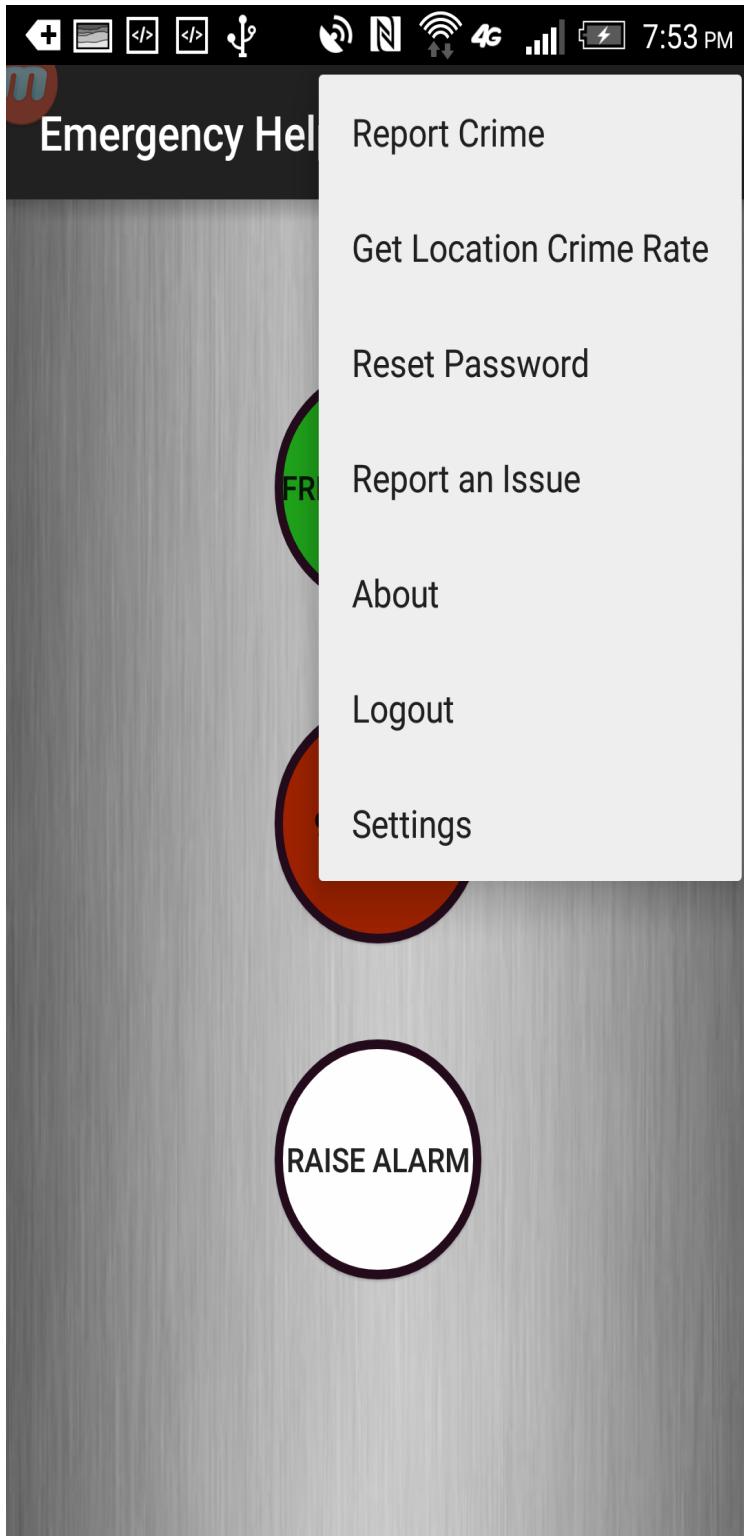


Screenshot : Crime Rate Page

- Based on this survey, crime rate will be displayed to the user. For this calculation we have written an algorithm.
- The crime rate is calculated based on KCMO statistics and it is calculated as number of crimes reported per 100 general populations in a particular area.



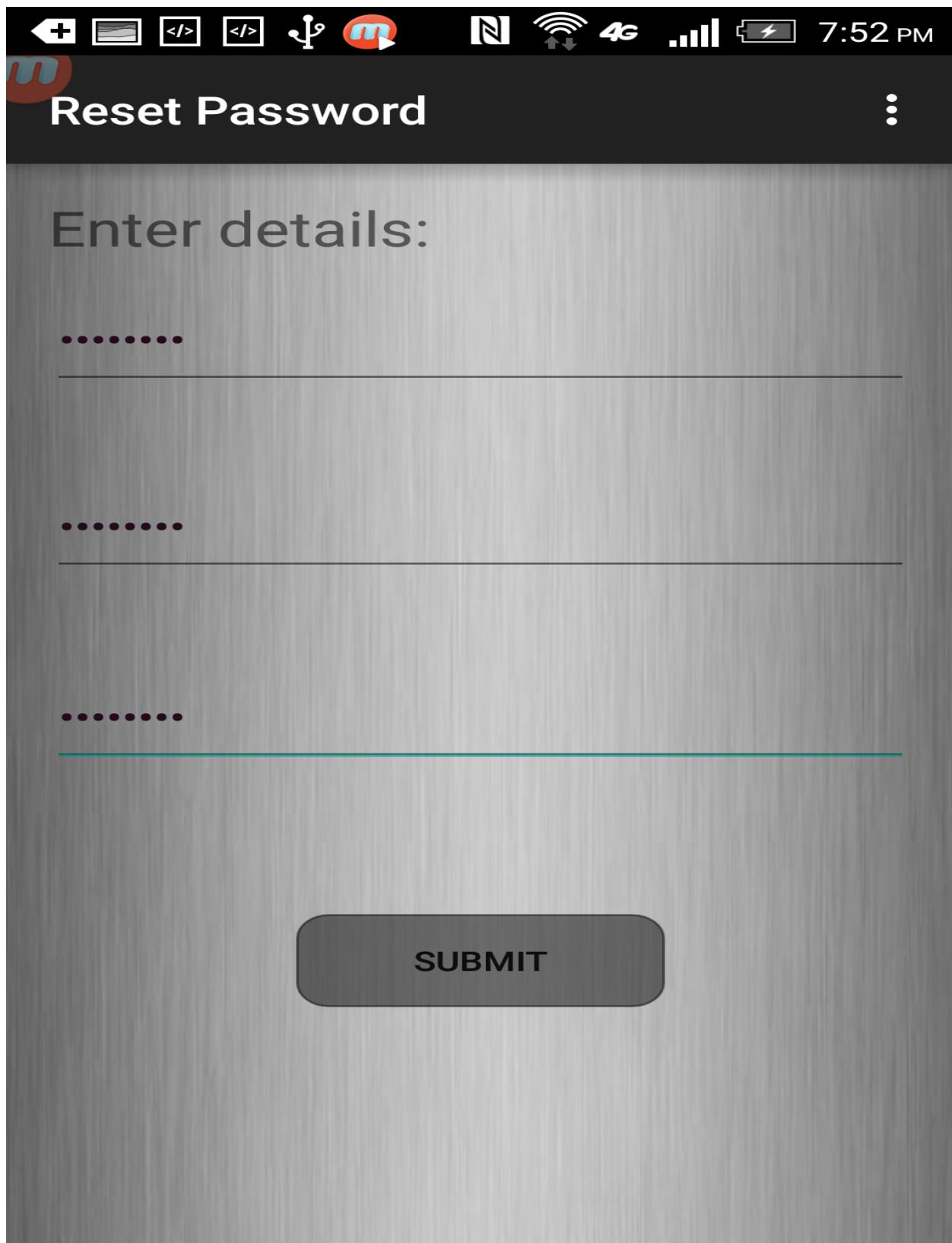
- User can even delete an added contact by simply swiping over the contact.



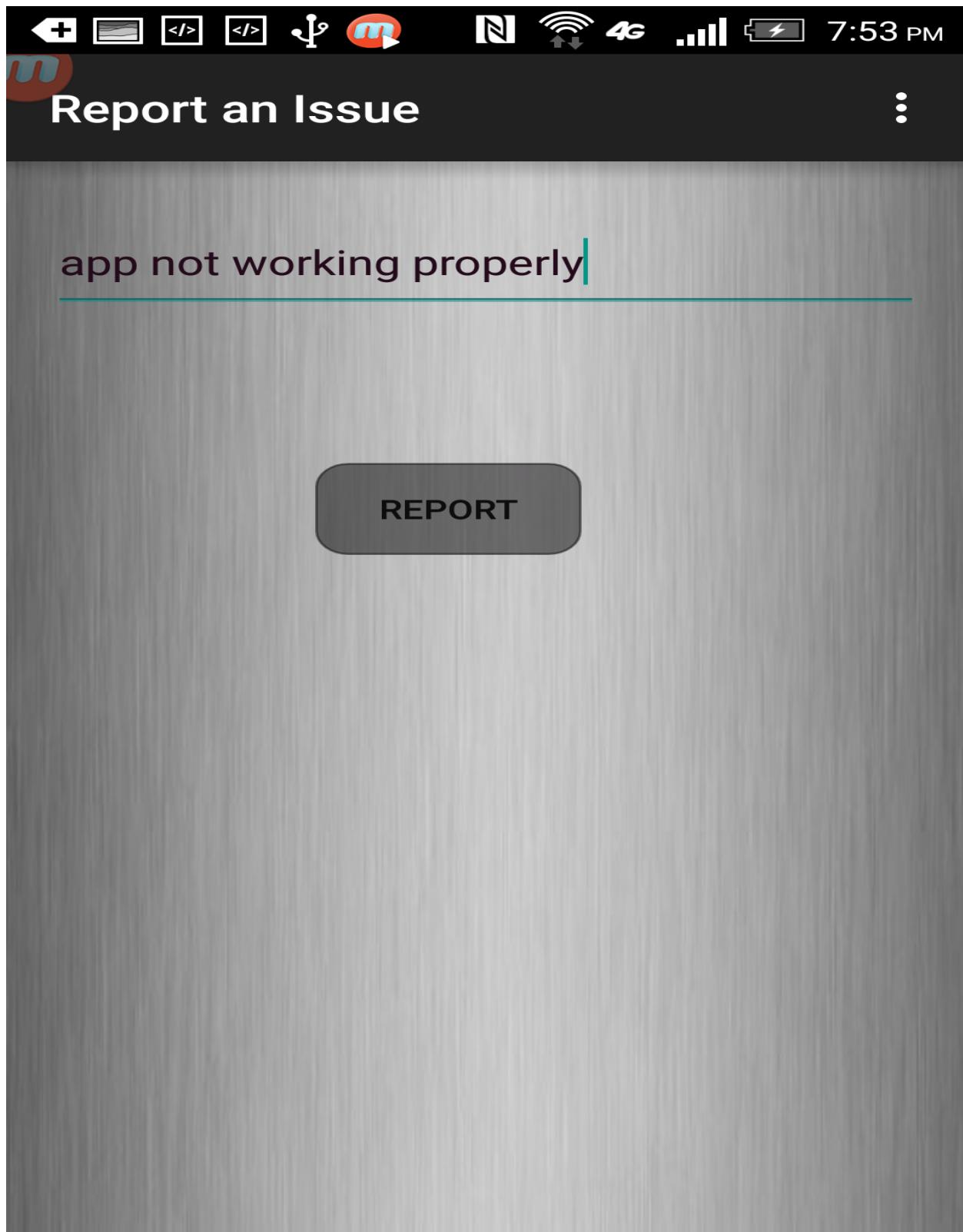
Screenshot: Emergency Help Page

Along with the 3 help buttons on the help page we have several more functionalities as follows:

1. Report crime: Through this user can report crime either to 911 or Twitter.
 2. Get Location Crime Rate: through this a user can get crime rate of a particular location.
- The above 2 we have discussed in previous iterations.**
3. Reset Password: Through this user can reset his/her password.
 4. Report an Issue: Through this user can report an issue about the app to the developers of the app.
 5. About: Through this user can read the instructions of the application.



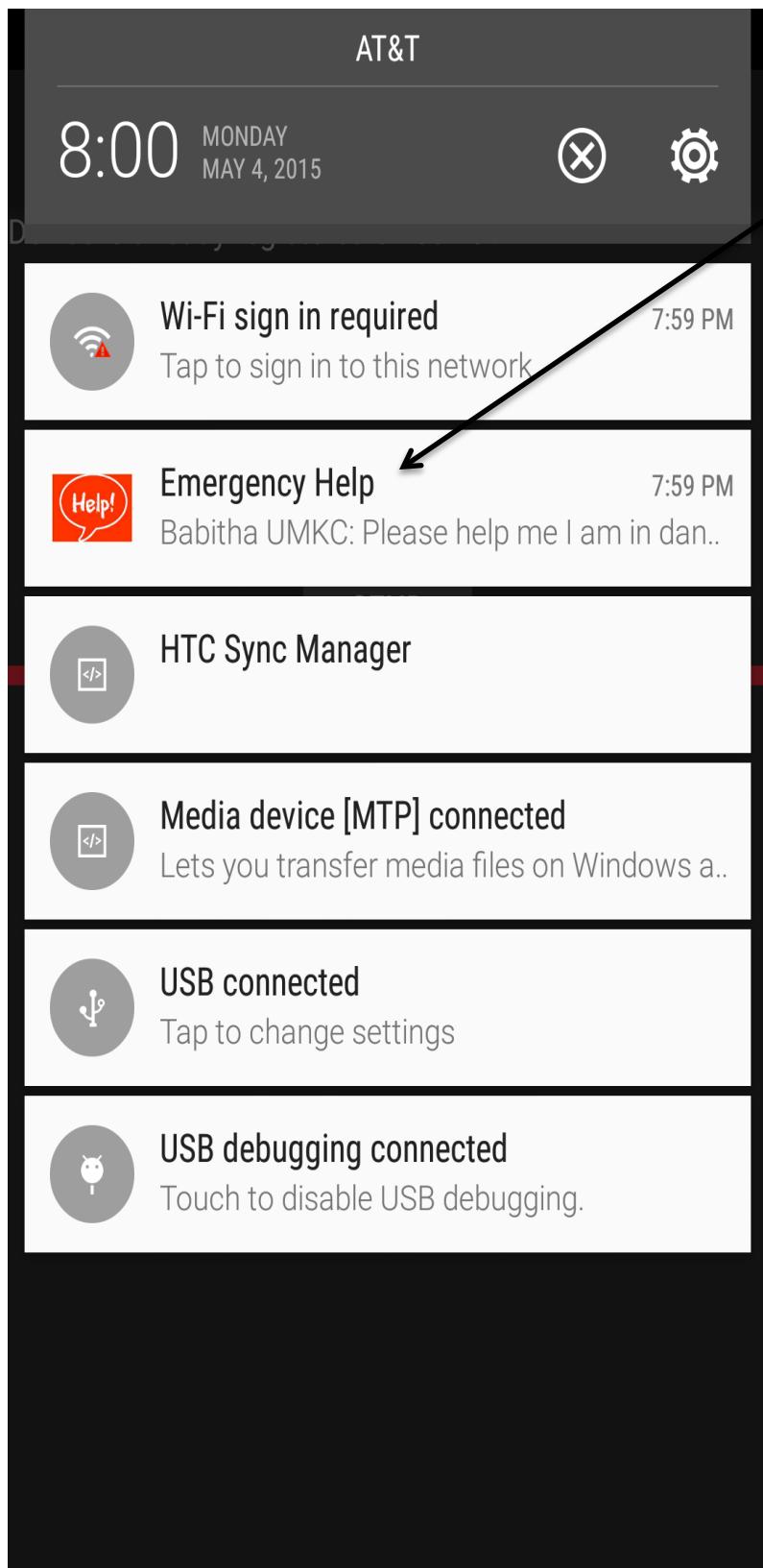
ScreenShot: Reset Password Page



ScreenShot: Report an Issue Page

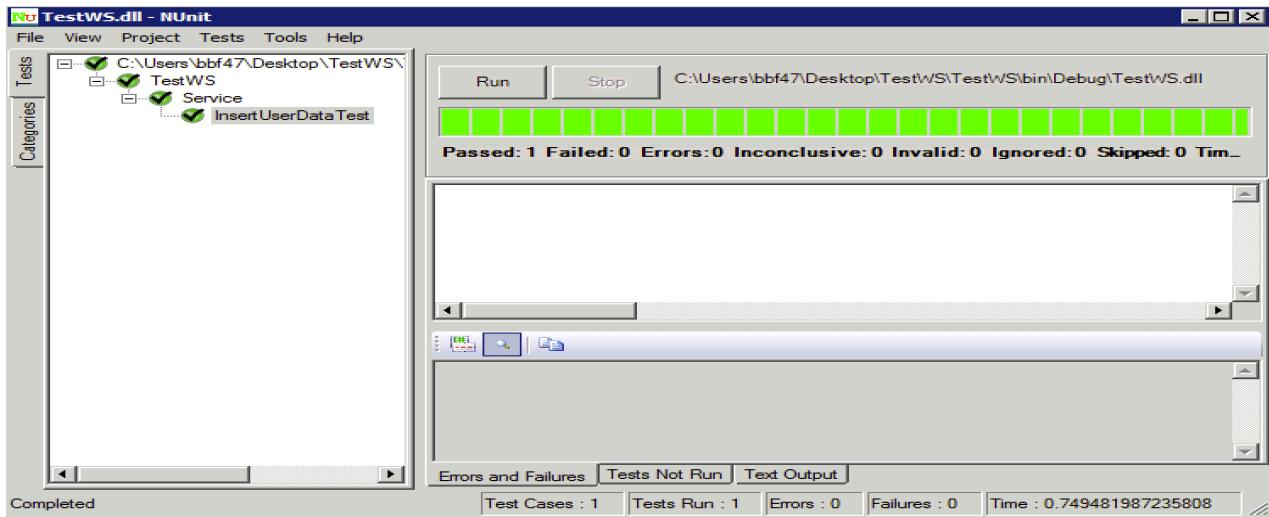


ScreenShot: About Application Page



- This is how a SOS appears to the registered friends.

2) Nunit Testing for created service: **(Service to upload image and data to the server)**



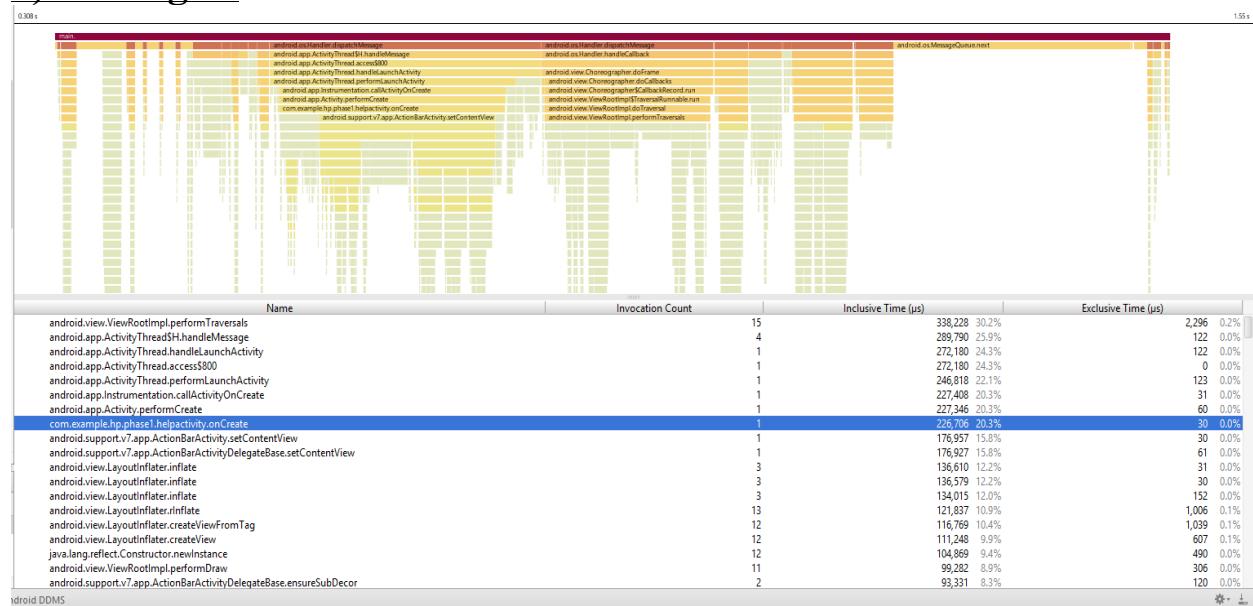
3) Deployment:

ScrumDo Link: <https://www.scrumdo.com/projects/project/group-6/iteration/120040>

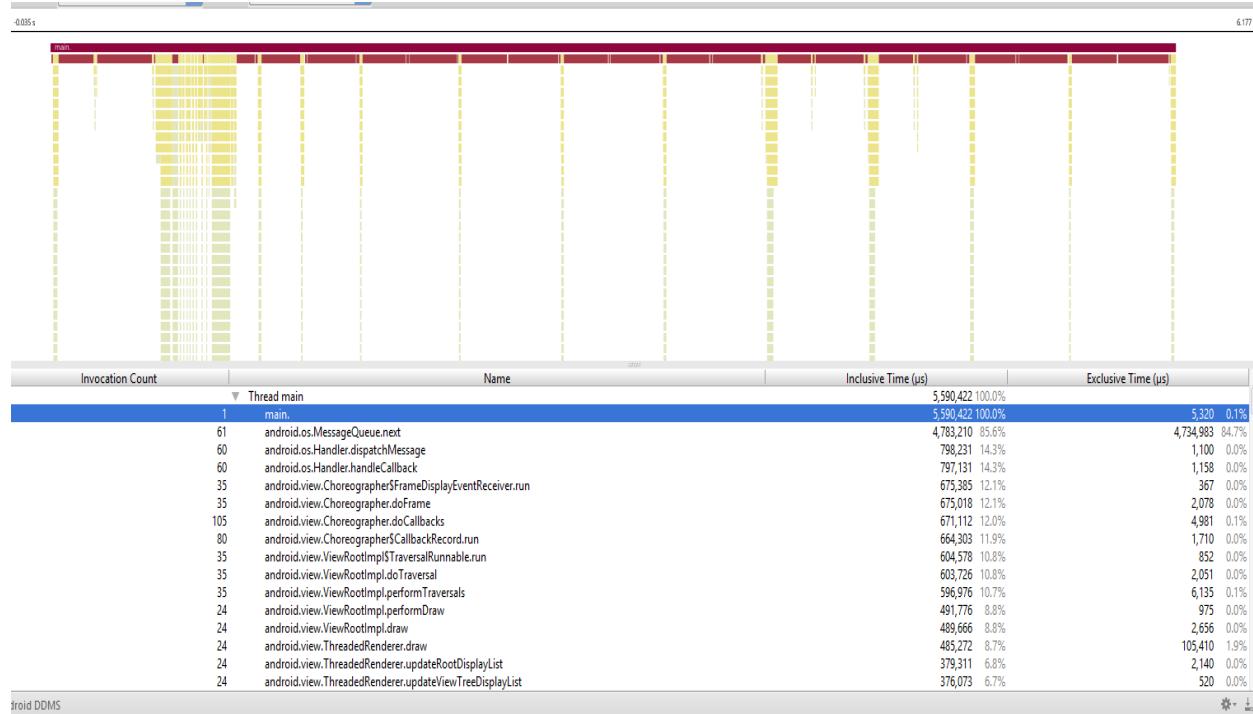
IBM Bluemix link: Emerhelp.mybluemix.net

4) Performance Testing:

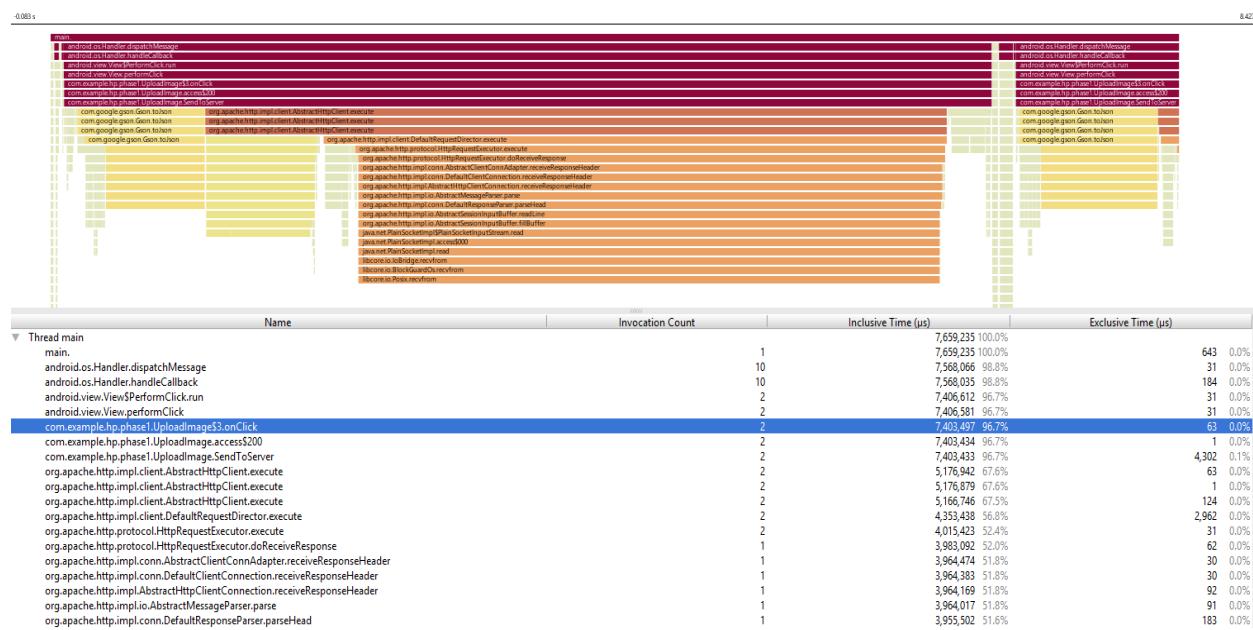
a) For login:



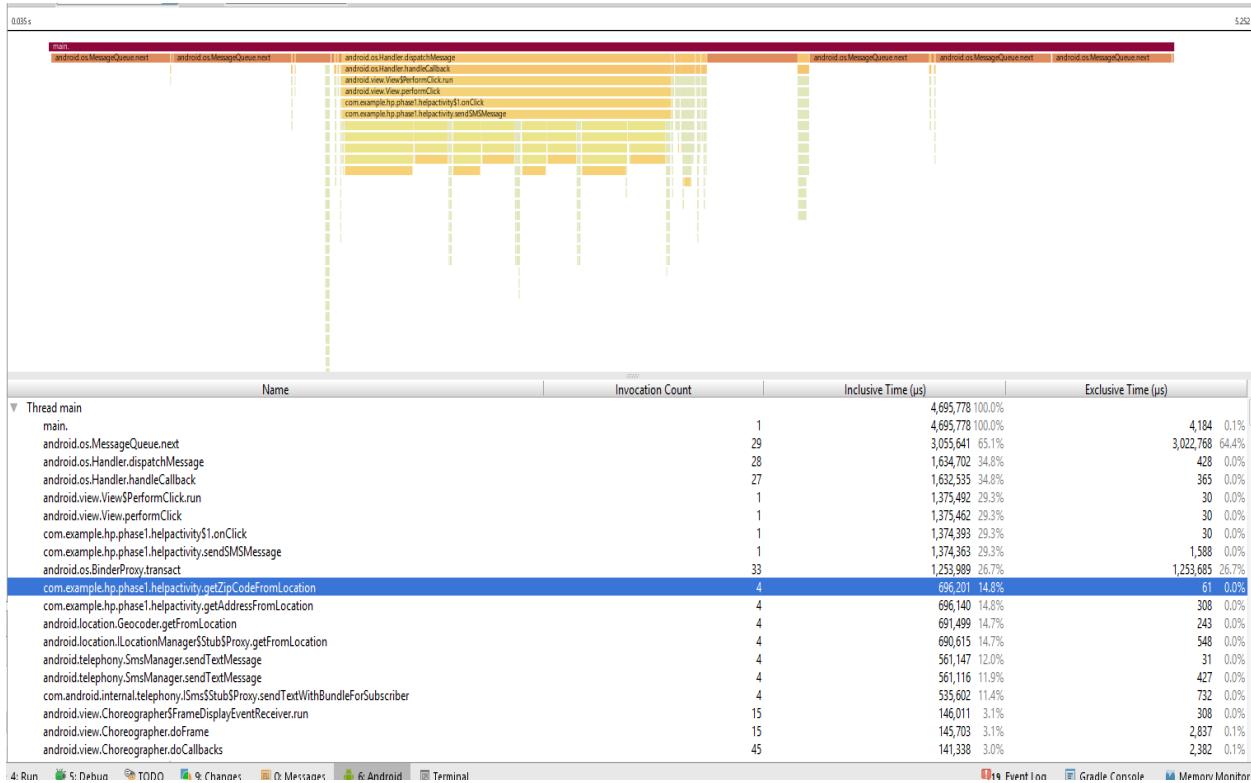
b) For Getting Crime Rate:



c) For Reporting Crime to 911 9464532450:



d) For Sending SMS to Registered friends:



e) For Twitter Update:



5) Sprint 4 scrum do:

#44 Optimizing crime rate algorithm.



Based on user priority of different crime we are calculating the crime rate in a particular area.

Done Tasks | 0 Comments

8

#41 Enhancing the User Interface.



Done Tasks | 0 Comments

5

#40 Compatibility of the application with every device.



Done Tasks | 0 Comments

5

#38 As a user I should be able to reset my password.



Upon clicking the rest password tab button in the menu bar, a user is able to reset is/her password.

Done Tasks | 0 Comments

5

#39 As a user I should able edit my friends contact list.



Done Tasks | 0 Comments

5

#50 Performance testing of the Application.



Done Tasks | 0 Comments

8

#49 Functional Testing of the application.



Done Tasks | 0 Comments

8

#48 Deployment of the complete application.



Done Tasks | 0 Comments

8

#47 Integration of the complete application.



Done Tasks | 0 Comments

8

#46 As a user I should be able to view the Application information page.



upon clicking the About tab in the menu bar as a user I should be able to see the description of the application.

Done Tasks | 0 Comments

3

#45 As a user I should be able to send an issue report to the developers of the App.



Upon clicking the Report an issue tab in the menu bar a user can report an issue to the developers.

Done Tasks | 0 Comments

5

6) Worked done by team members:

User Story Number	User Story	Hours Worked	Team Member	Status
38	As a user I should be able to reset my password.	2 hours	Pooja	Done
39	As a user I should be able to edit my friends contact list.	8 hours	Balaji	Done
40	Compatibility of the application with every device.	4 hours	Pooja	Done
41	Compatibility of the application with every device.	6 hours	Pooja	Done
44	Compatibility of the application with every device.	8 hours	Babitha	Done
45	As a user I should be able to send an issue report to the developers of the App.	2 hours	Pooja	Done
46	As a user I should be able to view the Application information page.	2 hours	Pooja	Done
47	Integration of the complete application.	5 hours	All	Done
48	Deployment of the complete application.	5 hours	All	Done
49	Functional Testing of the application	5 hours	All	Done
50	Performance Testing of the complete application	5 hours	All	Done

6) Database Used:

SQLite:

SQLite is a relational database management system. In contrast to other database management systems, SQLite is not implemented as a separate process but it is part of the using program android database. SQLite contains the SQLite database management classes that an application would use to manage its own private database. In our project we have used SQLite to store data related to user registration and users friends' mobile numbers.

Table Details:

- **Table Name:** userInfo

Columns: mobilenum, password, firstname, lastname, emailid, address1, address2, city, state country.

Description: Stores all user related information.

- **Table Name:** frnsMobile

Columns: usermobile, mobilenum1, mobilenum2, mobilenum3, mobilenum4

Description: Stores mobiles numbers of user's friends.

MS SQL Server:

Microsoft SQL Server is a relational database management system developed by Microsoft. As a database, it is a software product whose primary function is to store and retrieve data as requested by other software applications, be it those on the same computer or those running on another computer across a network (including the Internet).

Table Details:

- **Table Name:** userInfo

Columns: mobilenum, password, firstname, lastname, emailid, address1, address2, city, state country.

Description: Stores all user related information.

7) Github link for the source code:

<https://github.com/babithareddy/ProjectPhase>

8) YouTube link of the Application:

https://youtu.be/oZ5rmw_xdPM

References:

- <https://www.crimereports.com/>
- <http://www.slideshare.net/shinyvaibhav/online-crime-management-system-34994738>
- <http://spotcrime.com/mo/kansas+city>
- <http://www.fcc.gov/text-to-911>
- http://www.phonearena.com/news/Android-How-to-share-your-location-and-GPS-coordinates_id36706
- <http://www.pocketmeta.com/share-gps-coordinates-iphone-android-4240/>
- <http://www.way2know.com/projects/e-crime-file-management-system>
- <https://data.kcmo.org/>
- <https://play.google.com/store/apps/details?id=com.CrimeStoppersHouston.android>
- <https://itunes.apple.com/us/app/crimereports/id343636598?mt=8>
- <http://www.sungardps.com/solutions/onesolution/public-safety-justice/rms/>