Tox Android Client

Objective

What are we doing? Why are we doing this? What are the goals? What are NON-goals? This section explains the project to someone not familiar with tox4j.

Stuff.

Background

Related work in the tox project? What similar projects exist? Links to external documents/wikipedia? Nothing about design/requirements here, just background.

In the Tox project already exists some mobile clients like Antidote (iOS) and Antox (Android), the new Android client project will extend the current Antox application.

In the android store already exists a application named ChatSecure that sends encrypted messages through "Google Talk/Hangouts, Facebook Chat, Dukgo, Jabber & more". Another similar application is TextSecure Private Messenger, this one also allows IM, but they have their own services.

Requirements

Who are the customers for the solution? What are their needs? What is the problem space? This section estimates scale requirements. How much data needs to be stored/processed? What kind of data? What about latency/throughput/etc network requirements? How about growth?

Customers

The main customers for the new Tox Android App will be the ones that use the Facebook Messenger, the Whatsapp, Skype or other Instant messenger applications. The Tox solution will offer more Privacy, an easy to use interface and a free application with no special payed features or ads filled.

Customer Needs

A average customer needs a application that's fast, doesn't take too long to perform simple tasks like sending a message, or listing the inbox list, or connecting to the service network, that's reliable, doesn't crash or fails to connect to the network, that's cross-platform and that's economic, like battery and data transfer saver.

User Journeys

When discussing a user journey, we refer to it as “UC-” followed by the identifier. UC here stands for Use Case. E.g. “Join a group chat” is UC-GC-2. While discussing user journeys, the UC- prefix may be omitted, so it becomes GC-2.

General (G)

1: File a bug/complaint

2: First login/registration

Group chats (GC)

1: Start a group chat ✓✓

- Step 1- Click  in the inbox
- Step 2- Search for your friends in the contacts list and add them to create the group
- Step 3- Click 
- Step 4- Start to Chat!

2: Leave a group chat ✓✓

- Step 1 - Select the conversation from the inbox
- Step 2 - Click  in the conversation
- Step 3 - Click the option “Leave Group”
- Step 4 - Select the option from the prompt window

  DEAD END

3: Invite a friend to a group chat ✓✓

- Step 1 - Select the conversation from the inbox
- Step 2 - Click  in the conversation
- Step 3 - Click the option “See Group Members”
- Step 4 - Click the 
- Step 5 - Select the friend(s) you choose to add to the Group Chat
- Step 6 - Click 

  DEAD END

5: Start a private conversation with a group member (If the user is a friend) ✓✓

- Step 1 - Select the conversation from the inbox
- Step 2 - Click in the User Image() to see that user profile
- Step 3 - Click in the option select “Message <<User Name>>”

Alternative ✓

- Step 1 - Select the conversation from the inbox

- Step 2 - Click  in the conversation
- Step 3 - Click the option “See Group Members”
- Step 4 - Click on the User
- Step 5 - Click in the option select “Message <<User Name>>”

6: Change a group chat alias ✓✓

- Step 1 - Select the conversation from the inbox
- Step 2 - Click  in the conversation
- Step 3 - Click the option “Rename Group”
- Step 4 - Edit the name from the Prompt window
- Step 5 - Confirm in the Prompt window

  DEAD END

Conversation (C)

1: Send a message to a friend ✓✓

- Step 1- Click  in the inbox
- Step 2- Search for your friend in the contacts list and add him to conversation
- Step 3- Click 
- Step 4- Start to Chat

Alternative ✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Select a friend from the friends list
- Step 4 - Click in the option select “Message <<User Name>>”

2: Send a file to a conversation (friend) ✓✓

- Step 1- Select the conversation from the inbox
- Step 2- Click  in the input box
- Step 3- Select the type of file you pretend to send
- Step 4- Select the file you pretend to send
- Step 5- Confirm the file transfer by Clicking the “Confirm” Button

  DEAD END

3: Delete a single / multiple message ✓✓

- Step 1- Select the conversation from the inbox
- Step 2- Click the message and hold (Action Mode)
- Step 3- Select the messages you choose to delete
- Step 4- Click  to delete them
- Step 5- Confirm the action

  DEAD END

4: Edit a message ✓✓

- Step 1- Select the conversation from the inbox

- Step 2- Click the message and hold (Action Mode)
- Step 3- Click  in the toolbar
- Step 4- Edit the message
- Step 5- Confirm the changes

  DEAD END

5: Recall a message ✓✓

- Step 1- Select the conversation from the inbox
- Step 2- Click  in the conversation
- Step 3- Click in the option “Recall a message”
- Step 4- Select the messages to recall by single clicking
- Step 5- Click  to recall the messages

  DEAD END

6: See conversation files list ✓✓

- Step 1 - Select the conversation from the inbox
- Step 2 - Click  in the conversation
- Step 3 - Click in the option “See files list”

  DEAD END

7: Mute a conversation ✓✓

- Step 1 - Select the conversation from the inbox
- Step 2 - Click  in the conversation
- Step 3 - Click in the option “Mute Conversation”

  DEAD END

8: Save a picture from a chat to SD card ✓✓

- Step 1 - Select the conversation from the inbox
- Step 2 - Click and hold a message with image
- Step 3 - Click  to Save the Image

Contact list (CL)

1: Add a friend ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Click in  button
- Step 4 - Insert the friend Tox ID
- Step 5 - Click “Confirm”

Alternative✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab

- Step 3 - Click in  button
- Step 4 - Click in the “QR Code” button to scan the friends QR Code
- Step 5 - Click “Confirm”

2: Change a friend’s alias ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Select a friend from the friends list
- Step 4 - In the Contact Settings Group, click “Change Friend Alias”
- Step 5 - Edit the Name in the prompt window
- Step 6 - Confirm the changes

  DEAD END

3: Save a friend’s profile photo to the phone memory (or SD card) ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Select a friend from the friends list
- Step 4 - In the Contact Settings Group, click “Save Profile Photo to Memory”

4: Delete a friend ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Select a friend from the friends list
- Step 4 - In the Contact Settings Group, click “Delete Contact”
- Step 6 - Confirm the contact elimination

  DEAD END

5: Block a friend ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Select a friend from the friends list
- Step 4 - In the Contact Settings Group, click “Block Contact”

6: Star / Unstar a friend ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Select a friend from the friends list
- Step 4 - Click  to toggle the starred status

Alternative

- Step 1 - Swipe Right to Left on a conversation with the friend
- Step 2 - Click  to toggle the starred status

7: Change a friend color ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab

- Step 3 - Select a friend from the friends list
- Step 4 - In the Contact Settings Group, click “Choose Contact color”
- Step 5 - Choose a color from the palette and confirm

  DEAD END

8: Make an audio / video call ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Select a friend from the friends list
- Step 4 - Click the Voice Call / Video Call Button
- **DEAD END**

Alternative ✓

- Step 1 - Swipe Right to Left on a conversation with the friend
- Step 2 - Click  or  to make the call
- **DEAD END**

9: See files send by the contact ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Select a friend from the friends list
- Step 4 - Click the button “Files send by <<Username>>

Inbox (IN)

1: Delete a conversation ✓✓

- Step 1 - Click a conversation and hold a conversation (Action Mode)
- Step 2 - Select the conversations to delete
- Step 3 - Confirm clicking in the 

Alternative✓

- Step 1 - Swipe Left to Right

Alternative✓

- Step 1- Select the conversation from the inbox
- Step 2- Click  in the conversation
- Step 3- Click in the option “Delete Conversation”
- Step 4- Click “Confirm” to perform the action

  DEAD END

2: Search of a conversation ✓✓

- Step 1 - Click  in the inbox
- Step 2 - Search!

  DEAD END

Profile (P)

1: Change the profile photo ✓✓

- Step 1 - Click ☰ in the inbox
- Step 2 - Click the Profile tab
- Step 3 - Click 
- Step 4 - Choose the profile photo

2: Change your online/away/busy status ✓✓

- Step 1 - Click ☰ in the inbox
- Step 2 - Click the Profile tab
- Step 3 - In the Profile Settings Group, click “Change your status”
- Step 4 - Choose the status
- Step 5 - Click “Confirm”

3: Change your own nickname/status message ✓✓

- Step 1 - Click ☰ in the inbox
- Step 2 - Click the Profile tab
- Step 3 - In the Profile Settings Group, click “Change your message status”
- Step 4 - Write in the Prompt, the changes and confirm
  DEAD END in the nickname

4: Change the default reject with call messages ✓✓

- Step 1 - Click ☰ in the inbox
- Step 2 - Click the Profile tab
- Step 3 - In the Profile Settings Group, click “Change reject with call messages”
- Step 4 - Select the ones you choose to change

5: See pendent and accept / decline friend requests ✓✓

- Step 1 - Click ☰ in the inbox
- Step 2 - Click the Friends tab
- Step 3 - Click the “Friends Requests” tab

6: See all missed calls ✓✓

- Step 1 - Click ☰ in the inbox
- Step 2 - Click the Call Log tab

7: Share the Tox ID ✓✓

- Step 1 - Click ☰ in the inbox
- Step 2 - Click the Profile tab
- Step 3 - Click the Tox ID and hold to share
- Step 4 - Choose the sharing method
  DEAD END

✓ -> Means that the design has already that feature

Design Ideas

Overview of the design. If you have multiple viable ideas, list them all with pros and cons. Don't include code or type signatures. Use diagrams if necessary. Major structural elements go here. Which existing technologies will be used? Which components will you write? How do they integrate? How will others integrate with them? What scaling parameters need to be considered most prominently? How will the product be rolled out to users? Implementation strategies go here, implementation does not.

UI Design

The new tox android client will feature a clear and intuitive design, that will allow the user to perform all the tasks done in other IM apps, without spending too much time learning how to use the app. In order to achieve the best user experience, all the UI will be designed with the material design guidelines.

The application will include major design structures like:

- The Android RecyclerView and CardView
- Toolbar and Action mode
- Hamburger menu (Left side swipe Drawer)
- Tabs
- Animations
- Fragments
- Notifications system

This main design will feature technologies that already exist and that the android api supports, except for the contact attachments gallery, that will be built from scratch.

Storage Design

The data storage of the application will be divided in Three parts, the internal (including the SQL database), the external and the application cache.

In the internal storage will be stored:

- All the user information.
- The friends list with all the available friend information (avatar, name, status, color, etc...).
- The messages exchanged between the user and the friends will, this could be saved in the device cache, but do to a possible increase of messages that may exceed the recommended cache size, it's better to save it in the internal and the allow the user to manage it.

In the external storage will be stored:

- All of the exchange file traded between the user and his friends, this will also allow other applications to use those files.

In the cache, we could save debugging logs (internal errors, etc...).

The type of data the the device will store are going to be strings of various lengths, photos, dates, settings and files.

Technologies

Minimum Supported Android Version

https://developer.android.com/about/dashboards/index.html

Android 2.3 (API 10):

- prevents 0.3% of users accessing the Google Play Store from using the client
- no library for material design hamburger menus, unsupported afaik
- material-themed dialogs are unsupported, though they can be done using a library https://github.com/afollestad/material-dialogs
- settings are limited as PreferenceFragment is unavailable and you are forced to use the deprecated PreferenceActivity

Android 4.0 (API 15):

- prevents 6% of users accessing the Google Play Store from using the client

Android 4.1 (API 16):

- prevents 11.3% of users accessing the Google Play Store from using the client

The restrictions that come with supporting Android 2.3 are too limiting, so we chose to support only API 15 and higher. Users with older devices who want to use Tox can use Antox.

Scaloid

Pros:

- eliminates XML files for the supported UI apis
- provides a more terse way of expressing UI structure and behaviour
- provides type-safe ways (E.g. TR (Typed R class) for XML-based UIs and resources, and simple class members for code-based UIs) of accessing UI elements and resources
- provides many features that make it harder for programmers to make mistakes (less repetitive coding, stricter compile-time checking)
- code-based UIs make it easier to compose and abstract UI element creation

Cons / Potential issues:

- doesn't fully support the latest API 22, according to the official documentation, it only fully supports API 16 and by the time the app will be released, the official API level will be even higher
- doesn't support Fragments, ActionBar, ToolBar or other newer UI elements like RecyclerView etc.

- isn't supported by Android Studio, they recommend using Intellij Idea. Also because of the lack of xml and support for Android Studio you lose UI preview features, localization editor and other productivity tools that speed up the development.
- there is a risk that Scaloid will no longer be maintained and in the future a new Android app would be needed
- not a standard way to build Android apps, could be a big barrier for potential contributors
- I'm presuming that the app will be posted on the Play Store, recently Google has been really harsh on developers, banning apps without notice for different obscure Policy Violations. I'm not sure if using Scaloid could be an issue and violate Google's policy, but anything is possible so it's best to consider this risk also.

Build system comparison

Gradle

- Scala can easily be integrated with Gradle, the new project will be written in Scala and still use the latest APIs
- Recommended build system by Google for Android
- Good support for ad-hoc "tasks" (SBT requires a more unwieldy Plugin definition)
- "Daemon" support to mitigate startup times.

SBT

- Recommended build system for Scala
- Android plugin maintained by one developer (who is responsive and quick, but still just one)
- Supports continuous compilation and testing (~test compiles and runs tests on file system change, ~android:run compiles and runs the app on change)
- "Console" support to mitigate startup times (a lot faster than Gradle).
- Better support for incremental compilation (speeds up the slow Scala compilation)
- Good debug support (mostly useful for inspecting build rules if you want to add own tasks)

For easier integration with Android Studio, we use Gradle, but we maintain an SBT configuration as fallback for more console-oriented developers.

Database integration

- Use an ORM in order to get: mapping between Java objects and the SQL database, much cleaner code that make it hard to make mistakes, automatic database generation based on the Java model classes etc.
  Good read: http://www.sitepoint.com/5-best-android-orms/

User interface

- Support for multiple screens, for both tablets and phones. The UI should scale according with the screen density. Tablets could have additional features since you have more screen real estate.
- Material design guidelines that 'should' be respected: http://www.google.com/design/spec/material-design/introduction.html

- The app should provide language localization for at least the top 5 Android markets worldwide by language. This is generally a good practice and will attract more users. Languages to support and people who support them:
    - English: andre_almieda, iphy
    - German: iphy
    - Russian: ?
    - Spanish: ?
    - French: ?
    - Portuguese: andre_almieda
    - Romanian: Ovidiu

Usability guidelines

General

- The application should perform equal
    - Without sound
    - Without color
    - With high-contrast mode enabled
    - With the screen magnified
    - With a screen reader (no visible screen)
    - With voice control only
    - With a combination of the above

- Error prevention

Visual

- Icons must have a touch target size of 48dp x 48dp and the space between elements must be at least 8dp.
- Controls must be clear and discoverable
- Information must appear in a natural and logical order
- The UI must be consistent (search, selection, elimination)
- UI minimalist design, irrelevant information isn't necessary, extra information makes the UI complex and heavy.
- UI patterns are the best way for the user to recognize and organize data
- Animate the UI to be responsive to the touch
- The user must navigate between screen without losing their focus
- Important text must have contrast
-

Usability Testing

Problem Areas

- Can't find path to the action

- Lost in the App (Can't find where the user is)
- Design

How to correctly proceed in the usability test

Step 1 - Invite the user to the test personally

Step 2 - Schedule a day with the user in order to prepare for the test.

Step 3 - Greet the user in the test day and make the user as comfortable as possible

Step 4 - Take the user to an room, with no distraction so that the user can be focused in the test.

Step 5 - Tell the user to sit down in the chair and ask if he wants something like glass of water and if it's everything ok.

Step 6 - Ask the user if he is ready to start the test.

Step 7 - If the user agrees, the next step is to introduce the person to the application

Step 8 - After the introduction of the application, the next step is to present to the user the index.html (the inbox panel), this panel is the first one it shows when the app is opened.

Step 9 - Ask the user if he is ready to start the proper test.

Step 10 - If the user agrees, start the test by telling to the user his first task.

Important Observations

- Never show the user the paper with the tasks the user should perform
- The user must be as happy and comfortable as possible during the test
- The user should explore app and make mistakes freely
- Ask the user to think loudly and to be as chatty as possible, this should happen before the user performs the action (the click).
- Make sure that the user take their time, performing the tasks.
- If the user can't perform an task, I should give hints to the user by asking questions. If the user can't really perform the task, I should go back to the inbox and perform other task and in the end go back to the failed tasks.
- Never aboard the test, this may make the user very uncomfortable
- Ask the user if he doesn't matter that the session is going to be recorded, if he matters take notes instead.
- Always make sure all the equipment, software, mockups and HTML are correct and up in running.
- If the user becomes frustrated, you should pause the test , take a break and try another task. Ask the user about the experience, get information about the experience and then continue when the user becomes comfortable again.

Step 11 - After the user performs all the tasks, or the ones he managed to, chat with the him so that he understands that he helped, tell the user that he was very useful to the project.

Step 12 - Thank the user for their time

Step 13 - Deliver to the user the questionnaire, tell him that he should fill it at home in the same day, if possible, when the user is comfortable.

Step 14 - Tell the user that he should deliver the questionnaire in my mailbox when he finishes.

Step 15 - Walk the user to the door and thank them again for the help

To - Do List

- Finish renaming all the files to the undercore_format ✓
- Review the User Journeys after the new Design ✓
- Correct the HTML markup ✓
- Complete the things that need tweaks or fixing
- Search and learn about Usability Questionnaire and Usability Test
- Fix the call end (goes back to the inbox panel) ✓
- Remove the dead ends (make a link to the inbox) ✓

Things that need tweaks or fixing

- The friend request view (only thing that the user receives is the Name) ✓
- The attachments view ✓
- The join group chat button (Big Problem) ✓ **(GONE)**
- The Contact View and the Profile View ✓

Tasks List

1. Send a message ✓
2. Add a friend ✓
3. Create a chat group ✓
4. Delete a message ✓
5. Insert an attachment ✓
6. Delete a friend ✓
7. Make a Call ✓
8. Share the user Tox ID
9. Change the user Image
10. Change the user Nickname
11. See the users that are included in the chat ✓
12. Star a friend ✓
13. Leave a chat group ✓
14. Delete a conversation ✓
15. reject a call with an message

Test User nº. 1

1º. The test user recognized the (+) button as a way to create a new message

After that the user had some problems with the search bar, confusion it with the friends bar, after some try the user was able to create the message successfully. It wasn't perceptible that the search bar was also the friends message list

The user also had some problems understanding that the next button symbol.
The user acknowledge that the (*) icon was for the favorite friends
2º. The test user at the beginning was a little bit lost in the application, confused if the inbox view was the friends list or the messages list. After some thinking the user understood that correct path to the friends list and managed to correctly understand the prompt.

3º. After the first test the user recognized the interface and accomplished the task quickly.

4º. The user searched in the message view menu for “deleting a message” option but, didn’t found it, so he tried holding the message and found out the answer and accomplished the task.

5º. The user completed the task quickly and very intuitive.

6º. The user completed the task quickly and very intuitive.

7º. The user completed the task quickly and very intuitive.

8º. The user completed the task quickly but, thought that it was only single click button and not click and hold.

9º. The user completed the task quickly and very intuitive.

10º. The user completed the task quickly and very intuitive.

11º. The user completed the task quickly and very intuitive.

12º. The user completed the task quickly and very intuitive.

13º. The user completed the task quickly and very intuitive.

14º. The user choose to swipe from the right to the left, which made it show the other options, after some thinking the user acknowledge that there was another swiping gesture and deleted the message.

15º. The user completed the task quickly and very intuitive.

Test user nº. 2

1º. The user followed all the correct steps to send a message, the user also recognized that the  button was to create the message. That is an improvement relatively to the first test user.

2º. The user acknowledge that had to change to the friends tab to add, then he deduced that the  button was to add a friend, after that the task was intuitive and completed.

3º. The user completed the task quickly and very intuitive.

4º. The user completed the task quickly and very intuitive using the press and hold.

5º. The user completed the task quickly and very intuitive.

6º. The user completed the task quickly, very intuitive, and also he wanted to delete the friends by press and hold.

7º. The user choose to make the call, by the longest way, going to the chat view, clicking on the person's name in the actionbar and then making the call.

8º. The user completed the task quickly and very intuitive.

9º. The user completed the task quickly and very intuitive.

10º. The user completed the task quickly and very intuitive.

11º. The user completed the task quickly and very intuitive.

12º. The user completed the task quickly and very intuitive.

13º. The user completed the task quickly and very intuitive.

14º. The user completed the task deleting the conversation by tap and hold, but also recognized that it could delete it from the leave group option in the group view menu.

15º. The user completed the task quickly and very intuitive.

Test user nº. 3

1º. The user completed the task, but didn't follow the path of the others test user, this user started by clicking the friends view and then clicking the friends profile and then sent the message.

2º. The user started by thinking that the (+) button was to add an friend to the friends list, after realizing that it wasn't in the correct place, the user when back to the home panel and then when to friends tab and recognized the  button and completed the task.
In the input field was missing the placeholder, the user was a little bit lost without the placeholder by then recognized the line.

3º. The user recognized the interface from the first task and it completed it intuitively.

4º. The user completed the task quickly and very intuitive using the tap and hold.

5º. The user completed the task quickly and very intuitive using the tap and hold.

6º. The user completed the task quickly and very intuitive using the tap and hold.

7º. The user completed the task quickly and very intuitive by the fastest way, clicking in the call button on the friends tab in the Lorem Ipsum name.

8º. The user completed the task quickly and very intuitive.

9º. The user completed the task quickly and very intuitive.

10º.The user completed the task quickly and very intuitive.

11º. The user confused at the beginning the the notification number (2) from the Lorem Ipsum with the number of persons in a chat, so after some thinking the user when to the unique group chat and followed the normal procedure and completed the task.

12º. The user completed the task quickly and very intuitive.

13º. The user completed the task quickly and very intuitive.

14º. The user completed the task quickly and very intuitive.

15º.The user completed the task quickly and very intuitive.

Test user nº. 4

1º. The user when to the friends tab and clicked the Lorem Ipsum message icon because he recognized the message logo.

2º. The user when to the friends tab again and the thought that it didn't have this feature but after looking to the toolbar recognized the logo add friend logo and completed the task.

3º. The user when through the normal procedure, but was a little bit confused with the back arrow, but it completed the procedure correctly.

4º. The user completed the task quickly and very intuitive.

6º. The user tried to delete a friend by swiping right, but after that it then to the profile view and delete the normal way.

7º. The user tried to make a call from the message settings, after some thinking the user when to the profile in the top of the message and completed the procedure.

8º. The user completed the task quickly and very intuitive.

9º. The user completed the task quickly and very intuitive.

10º. The user completed the task quickly and very intuitive.

11º.The user completed the task quickly and very intuitive.

12º. The user completed the task quickly and very intuitive.

13º. The user completed the task quickly and very intuitive.

14º. The user completed the task quickly and very intuitive.

15º. The user completed the task quickly and very intuitive.

Test user nº. 5

1º. The user though the that plus button could add friends, at the first look, after clicking the button, the procedure was completed quickly and very intuitive.

2º. The user when to the add message again, then realized that wasn't to add friends, so the user when to the friends tab, and then saw the  button and the rest of the procedure was complete.

3º. The user was a little bit confused, how to add an other friend but after clicking on an other user, the rest of the procedure was quickly and intuitive.

4º. The user tried to delete the message by single clicking, after some experiments the user clicked the setting icon trying to search for the option delete, after that the user experimented tap and hold and then recognized the trash bin completing the task.

5º. The user completed the task quickly and very intuitive.

6º. The user completed the task quickly and very intuitive.

7º. The user tried to call from the message menu put recognizes that the isn't an option, after that the user clicked on the user name in the top and the rest of the procedure was completed.

8º. The user completed the task quickly and very intuitive.

9º. The user completed the task quickly and very intuitive.

10º. The user completed the task quickly and very intuitive.

11º. The user completed the task quickly and very intuitive.

12º. The user completed the task but before staring the user she scrolled down.

13º. The user completed the task quickly and very intuitive.

14º. The user deleted the conversation through the Lorem Ipsum message settings.

15º. The user completed the task quickly and very intuitive.

Things that need to be improved

- Need of the delete messages option on the message settings menu
- Delete Friends by press and hold
- Highlight the call and message buttons on the friends view
- Swipe Right to delete the friend ????
- Call Friend in the message settings
- Highlight the favorites icon in the profile view

Tox Project Benchmarks

1. Implemented the design in XML (3070min - 51h -> 80h)
    a. Implemented the Main activity (4h)
        i. Implemented the Friends View
        ii. Implemented the Chats View
        iii. Implemented the search bar
        iv. Implemented the add friend popup (2h)
        v. Implemented the friends request (40 min)
    b. Implemented the new Message activity (1h)
        i. Implemented the new Message view
        ii. Implemented the recyclerView with the sections (40 min)
    c. Implemented the Contact View (7h) 5rd of July
        i. Implemented the Expandable Toolbar (2h)
        ii. Implemented the submenus and options (2h)
        iii. Implemented the popups (2h)
        iv. Implemented the file list (1h)
    d. Implemented the Message View (11h) 9th of July
        i. Implemented the toolbar (1h)
        ii. Implemented the recyclerView (2,3h)

iii. Implemented the input bar (30 min)
iv. Implemented the Attachments view (2,5 h)
1. Implemented the views with the fragments and the scroll (1h)
v. Implemented the Recall Messages (2h)
vi. Implemented the popups (2h)

e. Implemented the Groups View (includes some things of the Message activity) (6h) 11th of July
i. Implemented Contacts List (1,30 h)
ii. Implemented the popups (2h)
iii. Implemented the add friends to the group (includes some things of the Main activity) (1,30 h)
iv. Implemented the action (1h)

f. Implemented the Left Drawer with the hamburger menu (2,50 h) 12th of July

g. Implemented the Call view (10h) 14th of July
i. Implemented the background (2h)
ii. Implemented the caller ID (1h)
iii. Implemented the bottom color (50 min)
iv. Implemented the reject with message (2h)
v. Implemented the swipes (2h)
vi. Implemented the caller mini (1h)
vii. Implemented the called button view (1h)

h. Implemented the VideoCall view (2h) 16th of July
i. Implemented the VideoCall bottom bar (1,30 h)

i. Implemented the Profile View (8h) 18th of July
i. Implemented the Expandable toolbar (2h)
ii. Implemented the popups (2h)
iii. Implemented the submenus (2h)
iv. Implemented the rejected call messages (1,5 h)

2. Implemented the Animations and the transition between views (5 of August)
a. Implemented the Main activity animations (6h) 23th of July
i. Implemented the ripple effect
ii. Implemented the FAB animation (2h)
iii. Implemented the recyclerView animations (3h)
iv. Implemented the selected effect (3h)

b. Implemented the new Message activity animations (9h) 27th of July
i. Implemented the ripple effect
ii. Implemented the add new friend to the conversation animation (3h)
iii. Implemented the remove friend to the conversation (2h)
iv. Implemented the search effect (3h)
v. Implemented the FAB animation (1h)

c. Implemented the Contacts activity animations (8h) 29th of July
i. Implemented the Swipe down to dismiss (like in the contacts of android) (3h)
ii. Implemented the Overlay of the contacts (like in the contacts of android) (3h)
iii. Implemented the popups animations (2 h) -> Delayed

        iv. Implemented the ripple effects
    d. Implemented the Message activity animations (6h) 30th of July
        i. Implemented add message effect (2h)
        ii. Implemented the slide up and down attachments animations (2h)
        iii. Implemented the popups animation (2h)
    e. Implemented the Groups (4h) 31th of July
        i. Implemented the action messages animation (2h)
        ii. Implemented the popups animation (1h)
    f. Implemented the Call views animation (12h) 2nd of August
        i. Implemented the swipes animations (2h)
        ii. Implemented the animation after answering (4 h)
        iii. Implemented the rejected with message swipe animations (2 h)
    g. Implemented the VideoCall view animation (5h) 3rd of August
        i. Implemented the animations after answering (4h)
    h. Implemented the Profile View animations (8h) 5th of August
        i. Implemented the animations of the expandable toolbar (2h)
        ii. Implemented the rejected call messages drag to order and the delete animations. (4h)
3. Implemented the connection to the dummy API

Bugs List

1. Profile doesn't scroll with down event on onclick listeners (Google Support API problem)
2. Contacts View on click not active on did expanded
3. Contacts View doesn't animate bottom when slide bottom
4. Contacts view status bar shadow doesn't appear
5. Message View attachments shadow isn't appearing
6. Message View fix scroll on the attachments list
7. Message item justify the text and also fix the text appearance
8. Fix the contacts list bug on seeing profile,call on group messaging
9. Fix selection on the Add friends to conversation
10. Fix search on the Add friends to conversation
11. Glitchy Add Friend and remove from list
12. Fix the Icon of the add to conversation appearance
13. Fix the group message selecting on home
14. Fix the click on the contact photo, after scrolling on the friends list
15. Fix the appearance of the reject call messages and also the icon
16. Fix the back to the profile on the reject call messages
17. Fix the popups title position
18. Fix the drawer opener in the profile collapsed view
19. Fix the home view after selecting profile (Google Support API problem)
20. Fix the on reject messages on the call view

21. Exception when adding “Bart Simpson” and pressing the X button to delete them in the “Add friends to conversation” (new chat) view (see below for stack trace).
22. Adding Jane Norman, then pressing X: removes Jane Norman, but her name is still gray. After that, adding any other friend shows Jane Norman, not the other friend. After that, adding+removing Jane N
23. orman by clicking her name twice, and then adding her again adds Lorem Ipsum, instead.
24. add two friends, click the small "v" next to "2 selected friends", then remove a friend → New Message - Auto Fixed ?
25. bad behaviour: click the paperclip; click inside the conversation (outside the "Add to conversation" box) → Message
26. Fix the giggle on the FRIENDS tab expansion
27. Fix the color selecting Dialog

Missing Things

1. Connect the header of the Messages with the profile view
2. Missing connecting from the group message icon to the profile
3. Animate the recall messages
4. Animate the messages selection
5. Selection on the status popup
6. Contacts popup links
7. Missing connection between the profile circle in messages with the profile
8. Missing link on Chats to the search button
9. Delete Conversations with the fab button on Chats
10. Small X to delete the mini contacts on the new message
11. QR Code Integration
12. Photo Picker

TO DO

1. Improve code and also re struct the project according with the android guidelines
2. Tablet Mode

New Ideas :D

1. NFC friend adding (Bump to add a new friend)
2. Video Call Test
3. Themes (Dark and Light)