HUMAN COMPUTER INTERACTION

COM402T

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FUN ACTIVITY - 2

Whatsapp- A case study

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By COE17B015

INTRODUCTION:

WhatsApp Messenger, or simply **WhatsApp**, is an American freeware, cross-platform messaging and Voice over IP (VoIP) service owned by Facebook, Inc. It allows users to send text messages and voice messages, make voice and video calls, and share images, documents, user locations, and other media.

A bit about UI of the app :

The User Interface of Whatsapp is very simple and intuitive to use.Some of the key features of Whatsapp are messaging and calling your contacts.

1. The viewport consists of a horizontal navigation bar with 4 sections which are
   a. Camera- To take a snap and send to contacts
   b. Chats- This section shows the chat history of the user and the chats appear sorted according to the date and time on which the recent message was sent/received to/from the user.
   c. Status- This section shows the status updates of the contacts and they too are sorted according to the date and time at which a status update was posted by a contact.
   d. Calls - This section shows the call history of the user and again is sorted according to the date and time of the call made. Recent calls will be on the top of the call list.

   The Chats section is set as the default section when you open the application.

2. The top of the viewport also has a search bar where you can search for the contact. Search appears at the top second from right.
3. The top right corner of the viewport contains a kebab menu/overflow menu showing other features which are
    a. New Group
    b. New Broadcast
    c. Whatsapp Web
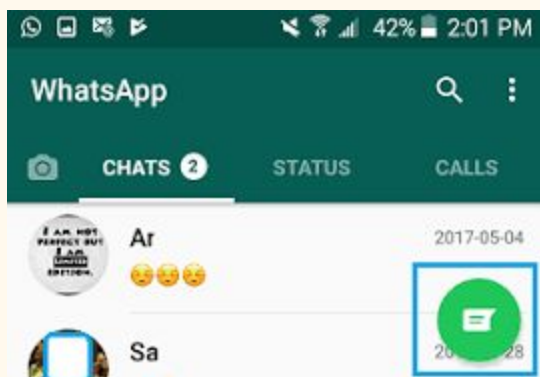   d. Starred Messages
    e. Settings

Each option takes you to another screen where you can use other features

Some of the HCI concepts observed are covered below

# CONCEPTS:

Mental Model:

1. **New Chat Icon:**

On the default screen the new- message icon is displayed which looks like a postcard/ letter to be sent which points to the convention of sending messages through letters before.

2. Search Icon:

Looks like a magnifying glass which indicates we are searching for something.

3. **Camera Icon**: Looks like a real world camera so which gives a convention that we can capture something with this!

4. **Delete Message Icon**: The delete message icon looks like a real world trash can and gives a convention that we can delete/remove something with this.

5. **Mic Icon used for sending voice messages**. This icon looks like a handset/mic and indicates we can use it for speaking/sending audio messages.
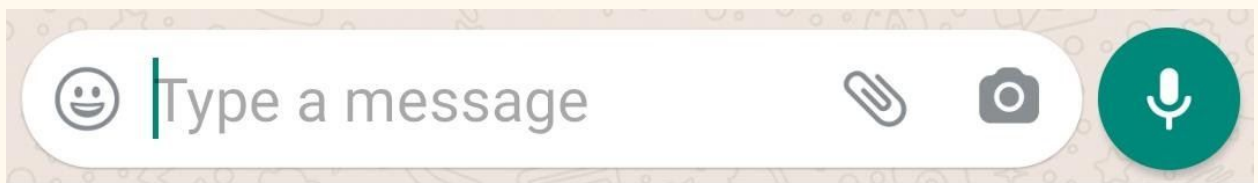
Icons in the above image from Right to Left:

1. **Emoji Icon**
2. **Chat Box**
3. **Attach file Icon(Represents the real world clip which is used to attach files)**
4. **Camera Icon**
5. **Mic icon(Similar to microphone in real world.)**

Usability and Ease of Use:

The product's UI is very simple and can be used by new users very well.As the product covers well on the mental

model part we can say that even a novice user won't face many issues while using the app. Some of the features which makes the app usable are

- We can share any kind of media with our contacts.
- A voice chat, a video chat etc are all just a single tap away and proper buttons are provided and it can be used.

We can say that the user is just a single tap away to voice chat or video chat.

- We can also make group audio calls and group video calls and add at max 8 participants in a group video call
- We can forward messages in just 2 steps
  - Select message and
  - Forward
- We can create groups to work/talk with our colleagues/friends.
- We can also mute/block/report some contacts in case of spam/inappropriate messages received.

All the above features can be implemented in max 4 taps.

Affordances:

Properties/Widgets which show what all actions we can perform using the app

- A search icon to search for chats/calls/contacts
- An attach icon to attach files: documents/images/gif/videos
- A call icon for dialing and calling your contacts
- An emoji icon to send emojis which make chats more expressive
- New group to create a group

Modality:

Human-Computer Modalities:

- Keyboard /Touch Screen: For typing/sending messages and media.
- Mouse(For whatsapp web version): Selecting UI elements,buttons etc.

Computer-Human Modalities:

- Auditory: Voice chat
- Vision: Video Chat/Icons.

Feedback:

1. Whenever a message is sent a single tick(grey color) is displayed to show that the user has sent the message successfully.
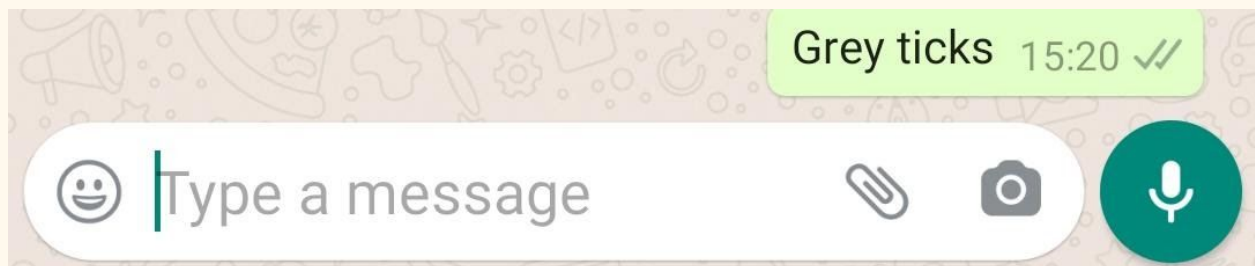

Grey Tick

2. Whenever a message is received by the receiver double ticks(grey color) are displayed to show that the message has been delivered to the destination.
3. Whenever a message is read by the contact, a blue tick is displayed which gives the read receipt i.e that the contact has read the message.
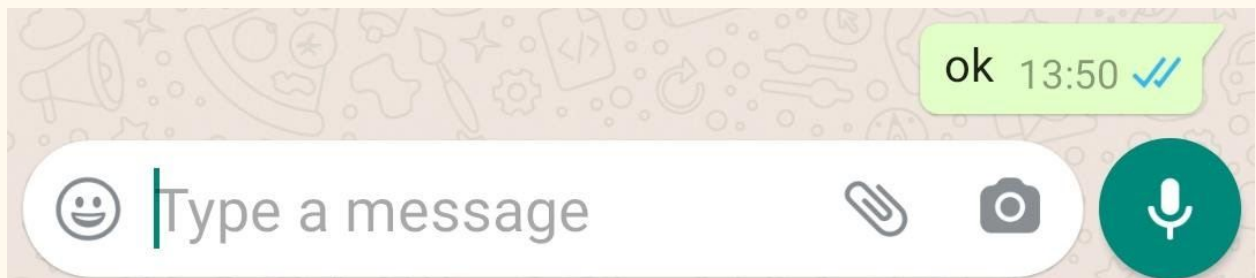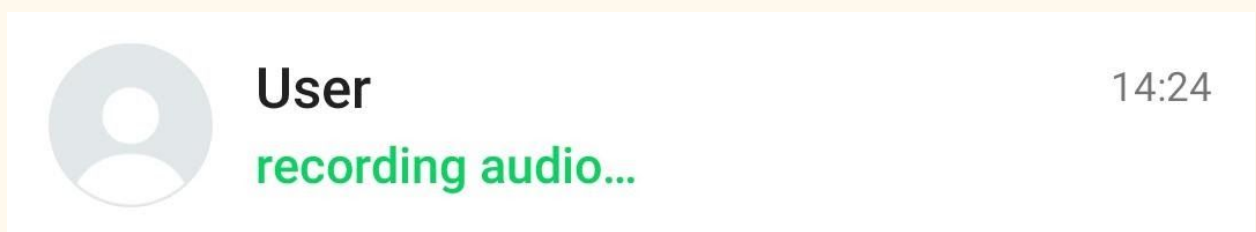
Blue tick

4. If someone is typing a message we get a bold green text appearing in the chat window "Typing…." which means that the user is typing a message.
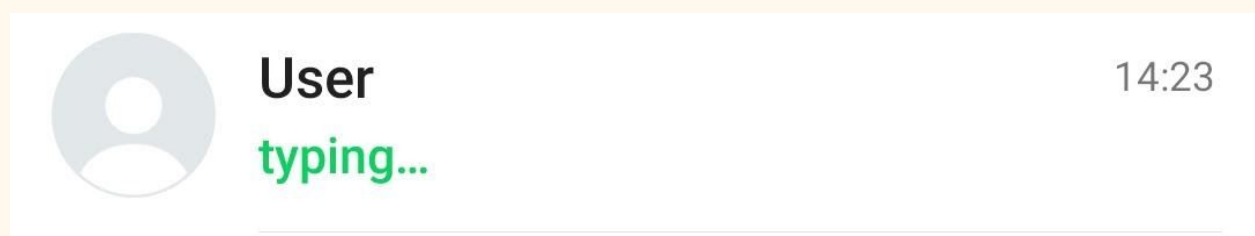
TYPING FEEDBACK

5. Whenever a user is recording an audio message we get the feedback as recording an audio

RECORDING AUDIO FEEDBACK

6. If a message could not be sent we get a small clock icon showing that the message was not sent.

FUN ACTIVITY - 4
Whatsapp-Usability Principles
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By COE17B015

INTRODUCTION:

WhatsApp Messenger

- Simple,secure and reliable messaging Application
- Supports VoIP and Media Sharing
- Supported on almost all platforms
  -Android,iPhone,MAC or Windows PC

USABILITY PRINCIPLES:

Learnability: is a quality of products and interfaces that allows users to quickly become familiar with them and able to make good use of all their features and capabilities

Pros:

The UI of Whatsapp really does well on the mental model and thus even new users can begin effective interaction and maximal performance. Some of the examples where the UI does well on the mental model part are design of various icons similar to their real world counterparts thus exhibiting skeuomorphism very well.

Wherever required the UI guides a novice user for example we get a blurred text : "Type a message " in the chat box indicating the users to type a message.
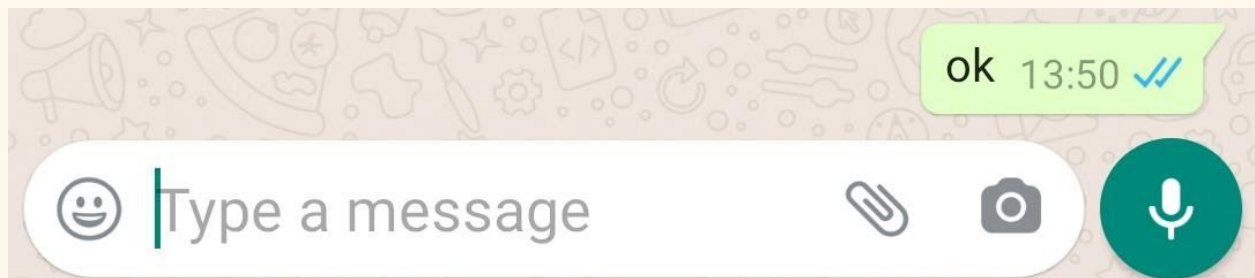
The blurred text "Type a message" guides a new user to use the text box for typing a message

Cons:

Though, the UI of Whatsapp performs well on the mental model, novice users find it tough to use it when compared to social media applications like Instagram and Facebook due to one reason: very less usage of AI powered features.

Also many novice users find it tough to locate and experience additional features like blocking,muting, creating groups, switching off read receipts, displaying the profile photo only to contacts feature,sharing status to selected people.

Other social media apps have a guided tutorial for new accounts whereas whatsapp doesnt have this feature.

Flexibility: The multiplicity in which users/system exchange information.

Pros:

Multithreading-

- Users can share text messages,audio and video files at the same time.
- We can also send any number of text messages at a time.
- We can chat on whatsapp while we are on a call with someone.
- We can log on to Whatsapp web and use the same account through computer and phone

Task Migratability-

- Auto correct feature in chats

Substitutivity-

- We can share files and media of any format with our contacts.

Robustness: The level of support provided to users in determining the achievement and assessment of goal directed behaviour.

Pros

- **Observability**:

- When a new member is added to a group a message appears on the chat screen.
- Whenever disappearing messages feature is turned on a message appears on the chat screen.
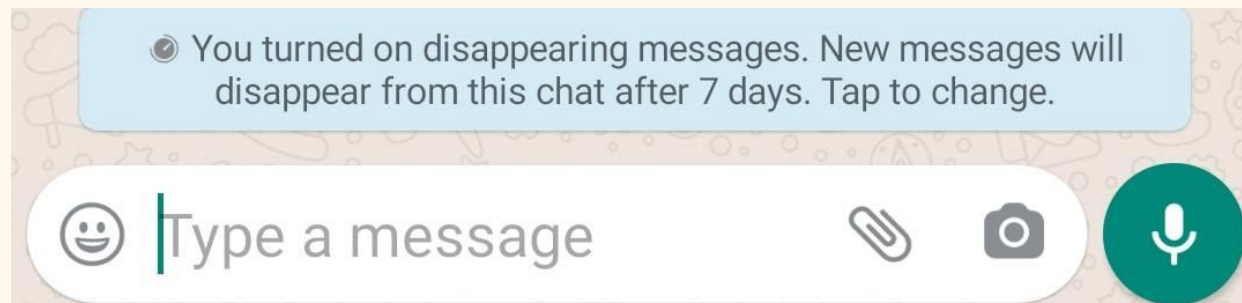
- "Typing…" message appears when an user is typing a message
- Whenever a status update is not viewed a dot appears near the Status column heading.
- We can also see the count of unread messages on chats column.
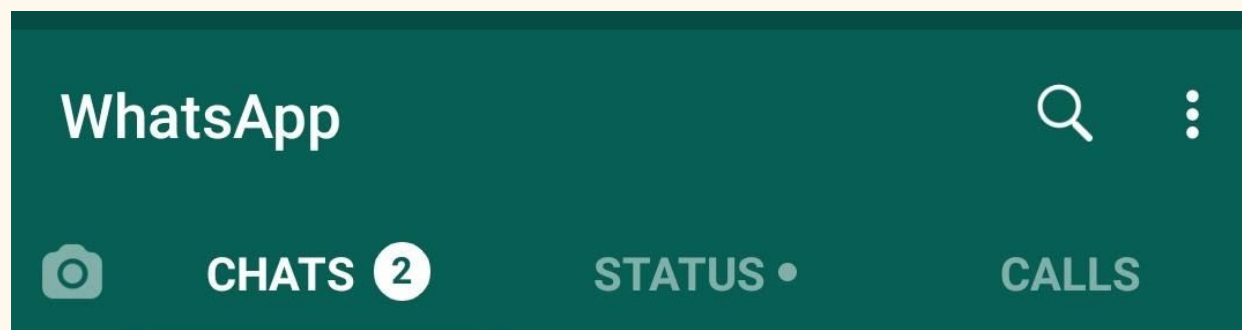
We can see number of unread messages and new status indicated by a dot

- **Recoverability**:
    - You can delete a message if sent by mistake
    - If Whatsapp is uninstalled by mistake we have data backed up in drive and it can be recovered.
- **Responsiveness**:
    - For all the actions taken by an user we get an appropriate prompt/message (typing,new message, voice call).
    - Whenever we are sharing media we get progress bars showing the status of updates.
    - If you have blocked a contact you get a message '**You have blocked this contact Tap to Unblock**.'
    - If a message is read 'blue ticks' appear which give the read receipts.

Interface Design Rules:

- **Visibility of system status**:
    - Whenever we get disconnected from the internet we get a message It appears that you are not connected to Internet when we try calling
- **Match between system and real world:**
    - All the icons in the UI are designed in such a way that they match their real world

counterparts for example : Mic for microphone, trash icon for delete option, no speaker sign for muted notifications.

- **User Control and Freedom:**
  - Users can choose whom to share their status with, they have options to block,mute and delete contacts.
  - Users can forward messages and create groups for people with similar interests.
- **Error prevention:**
  - Whenever a user deletes a message we get a prompt which mentions that this action is irreversible and thus ensures that the user performs it with full knowledge.
  - Whenever we leave a group we get a message saying that we cannot join the group until someone adds again.
  - Now whatsapp also limits the number of forwards to stop spread of fake news.
- **Help and Documentation**:
  - Whenever a user requires help they can read the faq in the app.
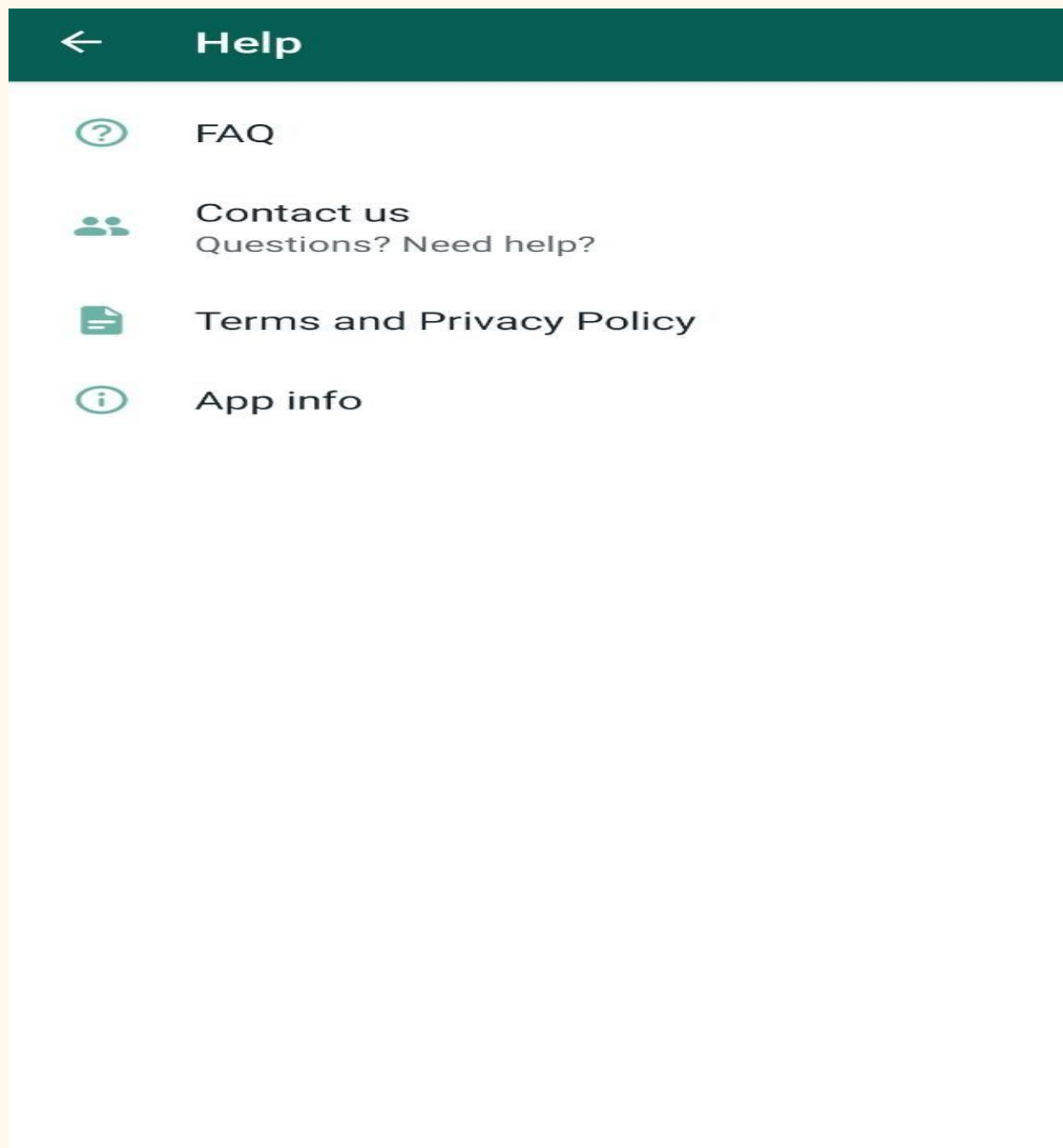
HELP SECTION OF THE APP

← **Status privacy**

Who can see my status updates

◉ My contacts

○ My contacts except...

○ Only share with...

Changes to your privacy settings won't affect status updates that you've sent already

DONE

STATUS PRIVACY ASPECT COVERS USER CONTROL AND ENSURES SECURITY.

DESIGN ACTIVITY-1
Whatsapp

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ANURAG NATOO

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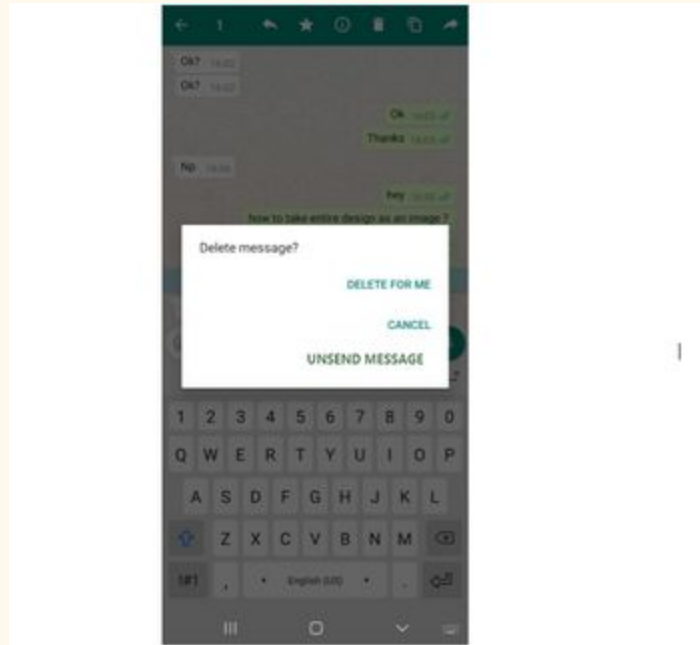
SOME IMPROVEMENTS:

Based on Usability/Cognitive Guidelines:

Following improvements can be made to the existing version of Whatsapp applications based on usability issues.

1. **Delete for everyone message can be replaced by Unsend Message**.

a. We sometimes make grammatical mistakes and delete a message. Instead of showing the message was deleted for everyone,the Unsend message will just remove the message.

New features/functionalities which can be added:

Following functionalities can be added to the app to improve its usability. These improvements can be noted as new features of the app and not improvements to existing features.

- **Voice calling and video calling feature to be enabled in whatsapp web.**
  - ○ Voice/Video calling is not supported in the recent whatsapp web version. Adding this feature lets

the users work on the laptop and call at the same time.

- **Authentication of Users whenever we delete a chat or contact.**
  - Deleting chats is rare and also sometimes dangerous. So we can ask user authentication whenever we delete a chat we can like a fingerprint or pattern.
  - Thus providing security to users data.

- **Instead of delete for everyone message we can add an edit message feature.**
  - Instead of deleting a message we can enable edit a message feature.
- Furthermore Whatsapp lacks features like public channels and also doesn't have a mechanism to locate bot activity.
 - **Public Channels**
  - **Bot Detection**

These features can be added to improve the functionality of Whatsapp.

Improvements to be made based on design laws

DESIGN LAWS:

Some improvements which can be made based on design laws are

1. **Jump to present icon size** can be increased so that it can be located easily. This is based on Fitts law. If the size of the icon is larger it can be located easily.
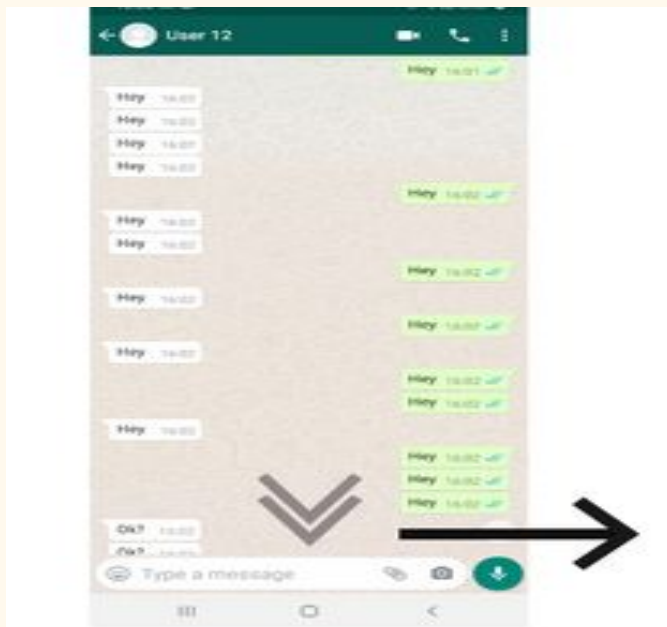
2. **Delete a message/chat option should be located in such a way that it is located at a larger distance.**
   a. According to Fitts law if an icon/target is located far away then it'll take more time for the user to locate it.

b. Thus the user will delete the message only when it is necessary.

c. Once a message is selected the options like star/forward message options appear. In this menu the delete option should be kept in the **more options** menu.

d. So that user takes more time to reach it and he will take this pain only when necessary.Furthermore the messages will not get deleted accidentally.

DESIGN ACTIVITY-2
Whatsapp

—

By COE17B015

ANURAG NATOO

COLOR AND SHAPE PSYCHOLOGY IN WHATSAPP :

(The above heading follows the exact font styling used in whatsapp logo...)

1. COLOR:

   a. The two colors of the **WhatsApp logo** are **white** and **light green (#25D366)**. The shade of green looks bright and vivid, while the combination with white makes the emblem crisp and fresh
   b. This is a pleasant change from the blue color, which is used for social apps and networks so often.
   c. The logo was chosen **green** as it represents **security**, since we all seek privacy in our conversations. In the digital world, the colour green is often used when something is safe or verified.

2. SHAPE :

   a. Shape of Whatsapp logo mainly includes two elements
      i. **Text Bubble**
      ii. **Telephone**
   b. Whatsapp works as a platform for quick message and audio / video call. Here, two different elements were

used to design, namely the first text bubble and the second telephone. Even today, every text message received is displayed in the text bubble. The received messages contain "tail" while pointing to the left side of the text bubble, while sent messages have the right one of the text bubble.

c. By including a text bubble with the tail on the left side of your logo, WhatsApp highlights its role as a messaging app. Also, the designer of the WhatsApp logo has placed a telephone within the text bubble.

d. If we notice the app's logo, then we see an old landline phone inside the design. In the Whatsapp logo, the landline phone communicates the function of the app more effectively.

PROGRESS BARS:

1. **Downloading documents/photos:**
   a. Whatsapp uses determinate progress bars while a photo or document is downloaded to give feedback.

2. **Backup of files:**
   a. While files are backed up to google drive determinate progress bars are used.
3. **Deleting Chats:**
   a. When a lot of messages are deleted, a determinate progress bar is used.
4. **Payments:**
   a. Whatsapp uses indeterminate progress bars for payments.

CAPTCHA:

As of now CAPTCHA is not used in Whatsapp. But it needs to be implemented to detect bots and prevent spam messages.

NAVIGATION DESIGN:

The navigation design in Whatsapp is designed very well and follows all the rules of navigation design.It uses

Kebab menu for all the dropdowns and **left arrow icon** for returning back to the main page.

UNIVERSAL DESIGN:

1. One Equitable Use:

    a. Whatsapp as a product can be used by any group of users and it also offers support in almost all types of languages.

2. Flexibility in Using the design:
    a. Whatsapp can be used by all types of users.
    b. Both left-handed and right handed users can use the app.
    c. The app is adaptable and the user can change the font size depending on his requirement

3. Simple and Intuitive Use:
    a. Whatsapp's main functionality that is texting and calling can be easily understood by any user.
    b. Even children of age group 6 can send a text using Whatsapp and even people of age group 80 to 90 know how to use Whatsapp.

4. Perceptible Information:
    a. The required information is conveyed as the app covers very well on the concept of mental model and even a novice user can understand how to use an app very easily.

5. Tolerance for Error:
    a. If we uninstall the app by mistake Whatsapp allows us to maintain a backup in Google drive which can be installed and hence error handling is taken care of.

      b. We can delete a message permanently if sent by mistake.
6. Low physical effort:
      a. Usage of whatsapp requires minimum physical effort as every functionality is at maximum 4 taps away from the home screen.

CONCLUSION:

Whatsapp covers almost all the design aspects and follows all the required design laws to make it's UI simple and easy to use. As of 2017, the number of users using Whatsapp was 1.3 billion around the world. And the number clearly explains how good the UI of Whatsapp is and we can say users have a great experience while using it.

However, there are many features which can be implemented in Whatsapp like public channels to share data. There are other messaging apps like Telegram which cover better on the security part when compared to Whatsapp.