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IT-314 : Software Engineering

GUI Testing

Group : 12

CHAT APPLICATION

Objectives

The objective of GUI testing for the Android Chat Application is to ensure that all graphical user interface components function as intended and provide a seamless user experience. This includes verifying:

1. **Responsiveness**: Ensuring the app's UI adapts properly to various screen sizes and orientations.
2. **Navigation**: Confirming smooth transitions between screens and accurate functionality of navigation elements like buttons, tabs, and swipe gestures.
3. **Functionality**: Testing the usability of features such as sending/receiving messages, swipe actions, and profile viewing.
4. **Visual Design**: Checking for consistent alignment, color schemes, fonts, and overall aesthetic appeal.
5. **Error Handling**: Ensuring that appropriate error messages are displayed for invalid actions.
6. **Performance**: Verifying that the UI responds quickly and without lags under normal and heavy usage scenarios.

All UI Components in the App

- Login, Sign Up , Create Profile View, Forget Password, Clickable Buttons, Chat list, All User List, Chats, Profile Pic View, profile view, Update Profile View, Groups List, Group Chats, Group members and Admin list,Bottom navigation bar ,).

Test Scenarios :

1) Sign Up

Test Case ID: TC_001
Test Objective: Verify that the sign-up functionality works correctly and displays all necessary validations.

Steps:

1. **Opened App:** Navigated to the **Sign-Up** screen.

2. **Valid Inputs:** Entered valid name, email, and password; clicked **Sign Up**; email verification sent.

3. **Invalid Inputs:**
4. Empty fields: Error messages displayed.
5. Invalid email: "Invalid email format" error.
6. Weak password: "Password too weak" error.
7. Mismatched passwords: "Passwords do not match" error.
8. **Email Not Verified:** Clicked **Sign Up** without verifying email; a popup "Verify your email" appeared.
9. **Button Behavior: Sign Up** disabled for invalid inputs; enabled for valid inputs and verified email.
10. **Navigation:** Verified **Log In** link redirects correctly.
11. **Usability:** Password toggle works; elements aligned properly.
12. **Error Handling:** Errors cleared after corrections.
13. **Cross-Device:** Tested successfully on multiple devices.

Expected Result:

- On valid input, the user should be successfully registered with email verification and redirected to the main chat list screen.
- On invalid input, appropriate error messages should be displayed.

Actual Result: Video link
Pass/Fail: Pass

2) Log in

Test Case ID: TC_002
Test Objective: Verify that the login functionality works correctly with valid and invalid credentials.

Steps:

1. **Opened App:** Navigated to the **Login** screen.

2. **Valid Inputs:** Entered valid email and password; clicked **Login**; if password is correct redirected to Chatscreen.
3.
4. **Invalid Inputs:**
5. Empty fields: Error messages displayed.
6. Invalid email: "Invalid email format" error.
7. Mismatched passwords: "Passwords do not match" error.
8. **Email Not Registered:** Clicked **Login** after entering unregistered email; a popup "email not found" appeared.
9. **Button Behavior: Login** disabled for invalid inputs; enabled for valid inputs and verified email.
10. **Navigation:** Verified **Log In** button redirects correctly.
11. **Error Handling:** Errors cleared after corrections.
12. **Cross-Device:** Tested successfully on multiple devices.

Expected Result:

- On valid input, the user should be successfully logged in and redirected to the main chat screen.
- On invalid input, an appropriate error message should be displayed.

Actual Result: Video Link

Pass/Fail: Pass

3) Forget Password

Test Case ID: TC_003
Test Objective: Verify that the "Forgot Password" functionality allows users to reset their password correctly via Email.

Opened App: Navigated to Login screen; clicked "Forgot Password?" and entered a registered email.

Valid Inputs: Reset link sent to email; updated password successfully; logged in with the new password.

Invalid Inputs: Errors displayed for:

- Empty fields.
- Invalid email format.
- Unregistered email.
- Mismatched passwords.
- Weak passwords.

Button Behavior: Submit button disabled for invalid inputs; enabled for valid ones.

Navigation: Verified flow from "Forgot Password" to reset and login screens.

Error Handling & Cross-Device: Errors cleared after corrections; tested successfully on multiple devices.

Expected Result:

- On valid input, a reset password email should be sent, and a confirmation message (e.g., "Reset link sent to your email") should appear.
- On invalid input, appropriate error messages should be displayed.

Actual Result: Video Link

Pass/Fail: PASS

4) ChatList Screen

Test Case ID: TC_004
Test Objective: Verify the functionality and UI elements of the Chat List screen.

Steps:

1. **Opened App:** Logged in successfully and redirected to the Chat List screen.
    a. **New Chat Creation:**
    b. Verified the ability to create a new chat with any user.
    c. Confirmed the new chat appears in the chat list after creation.
2. **Send Message:** Sent a message to a user; message successfully delivered and displayed in the conversation.
3. **Recent Chats:** Verified that recently accessed chats appear at the top of the chat list.
4. **Search Functionality:** Searched for users by name; confirmed accurate results.
5. **Button Behavior:** Buttons for new chat, search, and send message are functional and responsive.
6. **Navigation:** Verified smooth navigation between chat list and individual chat screens.
7. **Error Handling & Cross-Device:** Tested error scenarios (e.g., empty search) and ensured consistent performance across devices.

Expected Result:

- All chat items should display profile pictures, names, and messages accurately.
- Clicking a chat item should navigate to the Chat Screen.
- Swipe functionality should work as intended, with only one chat swipeable at a time.
- New messages should dynamically update the chat list.

Actual Result: Video Link

Pass/Fail: Pass

5) Chat Screen

Test Case ID: TC_005
Test Objective: Verify the functionality and UI elements of the Chat Screen.

Steps:

1. **Opened App:** Navigated to the chat screen after selecting a conversation
2. **Create Chat:** Verified that chat is created on both sender and receiver sides
3. **Send Message:** Sender sent a message, and it was immediately received on the receiver's side in real time
4. **Search Functionality:** Verified that the search button is functional, allowing the user to search messages by specific words
5. **Error Handling:** Confirmed appropriate behavior for sending messages without content (e.g., no message sent)
6. **Navigation:** Verified smooth navigation between different chat conversations
7. **Cross-Device Testing:** Tested the chat functionality on multiple devices to ensure real-time message delivery and search behavior

Expected Result:

- The header should display accurate details (profile picture, name, status).
- Sent messages should appear instantly, and incoming messages should load dynamically.
- Older messages should load on scrolling.
- Media attachments should upload and display correctly.
- Clicking the profile picture should navigate to the DP viewer.

Actual Result: ChatScreen-1 // ChatScreen-2

Pass/Fail: PASS

6) Create Profile Screen

Test Case ID: TC_006
Test Objective: Verify the functionality and UI of the "Create Profile" screen.

Steps:

1. **Opened App:** Navigated to the signup screen after opening the app
2. **Valid Inputs:** Entered valid details (name, phone number, bio)
3. **Create Profile:** Clicked the "Create Profile" button
4. **Add Details:** Successfully added name, phone number, and bio
5. **Set Status:** Set status to online/offline
6. **Add Profile Picture:** Added a profile picture by selecting from the gallery or clicking a new photo
7. **Error Handling:** Confirmed error messages for invalid inputs (e.g., missing phone number or name)
8. **Navigation:** Verified smooth navigation from signup to profile creation and onward
9. **Cross-Device Testing:** Tested functionality across multiple devices, including picture upload and status settings

Expected Result:

- On valid input, the profile should be successfully created, and the user should be redirected to the Chat List screen.
- On invalid input, appropriate error messages (e.g., "Name cannot be empty," "Invalid file format") should appear.
- Skipping profile creation should either restrict access to the app or proceed with default settings (if supported).

Actual Result: Video Link

Pass/Fail: PASS

7) All User List Screen

Test Case ID: TC_007
Test Objective: Verify the functionality and UI elements of the "All User" screen where all registered users are displayed.

Steps:

1. **Opened App:** Navigated to the "All User List" screen after login
2. **Search Functionality:** Searched for users by name; confirmed accurate and dynamic results displayed
3. **Add User to Chat List:** Added a user to the Chat List; confirmed the user appears in the chat list
   Verified prompt appears when trying to add an already added user
4. **Delete User from Chat List**
   Deleted a user from the chat list
   Successfully re-added the deleted user to the chat list
5. **Start Chat**
   Verified the ability to start a chat with any user after adding them
   Messages successfully sent and displayed in the conversation
6. **Error Handling**
   Confirmed appropriate error messages for invalid search queries or actions
7. **Navigation**
   Verified smooth navigation between All User List, Chat List, and individual chat screens
8. **Cross-Device Testing**
   Tested functionality across multiple devices; consistent performance observed

Expected Result:

- All users should display correctly with their profile pictures and names.
- Searching should filter results accurately.
- Clicking on a user should navigate to their profile or initiate a chat.

- If no users match the search, an appropriate message (e.g., "No users found") should be displayed.
- New users should appear dynamically in the list.

Actual Result: Video Link
Pass/Fail: PASS

8) Create Group Screen

Test Case ID: TC_008
Test Objective: Verify the functionality and UI elements of the "Create Group" screen.

Steps:

1. **Opened App:**Navigated to the "Create Group" screen after selecting the group creation option
2. **Group Details:** Entered the group name and description
3. **Select Members:** Selected members to add to the group
4. **Make Admin:** Confirmed the option to make members admins or not
5. **Self-Removal:** Verified that the user cannot remove themselves while creating the group
6. **Create Group:** Created the group successfully, and it appeared in the group chat list
7. **Error Handling:** Confirmed error messages for missing group name/description or when no members are selected
8. **Navigation:** Verified smooth navigation from group creation to the group chat list
9. **Cross-Device Testing:** Tested functionality across multiple devices to ensure consistency
10.

Expected Result:

- The group name should be entered correctly and displayed on the next screen.
- Selected users should be added to the group successfully.

- If a group avatar is uploaded, it should display as the group image.
- On successful creation, the user should be navigated to the Group Chat Screen with the newly created group.
- The app should display appropriate error messages when invalid inputs are provided (e.g., missing name, no members, unsupported image format).
- Duplicate group names or members should be handled appropriately, either by allowing it or displaying an error.

Actual Result: Video Link
Pass/Fail: PASS

9) Group ChatList and Chat Screen

Test Case ID: TC_009
Test Objective: Verify the functionality and UI elements of the Group Chat Screen.

Steps:

1. **Opened App**
   Navigated to the group chat screen after selecting a group
2. **Send Message**
   Sent a message; verified that the message is received by all group members in real time
3. **Multiple Users**
   Verified that multiple group members can send and receive messages in the group chat
4. **Search Functionality**
   Used the search option to find specific messages by words; confirmed it works correctly
5. **Error Handling**
   Confirmed no errors when sending blank messages or searching with invalid terms
6. **Navigation**
   Verified smooth navigation between different group chats

7. **Cross-Device Testing**
   Tested the group chat functionality across multiple devices for consistency

Expected Result:

- The group name, avatar, and member list should be displayed correctly.
- Sent messages should appear immediately in the chat window.
- Incoming messages should be displayed without delays.
- Older messages should be loaded when scrolling.
- Media attachments should upload and display correctly in the chat.
- The "Leave Group" functionality should work as expected and exit the user from the group chat.
- The "Mute Notifications" option should successfully silence notifications for the group.
- The app should handle simultaneous messages without significant lag or performance issues.

Actual Result: GroupChat- 1 // GroupChat- 2 // GroupChat- 3
Pass/Fail: FAIL "Received messages don't have specific senders, meaning it is not identifiable who has sent the message."

10) Group Member Info and Add new member

Test Case ID: TC_010
Test Objective: Verify the functionality and UI elements of the Group Member Info screen.

Steps:

1. **Opened App**
   Navigated to the group details screen by clicking on the group title at the top of the group chat
2. **View Members**
   Verified that the list of group members is displayed

3. **Add Member**
   Confirmed the presence of the "Add Member" button to add new members to the group
4. **Admin Options**
   Verified the option to make a member an admin or not
5. **Self-Exclusion**
   Confirmed that the user cannot remove themselves from the group via the details screen
6. **Error Handling**
   Checked for appropriate error messages when trying to add members or assign admins
7. **Navigation**
   Verified smooth navigation from the group chat to the group details screen
8. **Cross-Device Testing**
   Tested the group details screen on multiple devices to ensure consistent behavior

Expected Result:

- The member's name, profile picture, and additional info should display correctly.
- The available options, such as "Send Message," "View Profile," or "Remove from Group," should work as expected.
- The "Remove from Group" functionality should successfully remove the member from the group (if applicable).
- Clicking on the profile picture should open the full profile view.
- The app should perform smoothly without delays when accessing member information, even with large groups.

Actual Result: Video Link

Pass/Fail: **PASS**

11) User Profile and Update Profile

Test Case ID: TC_011

Test Objective: Verify the functionality and UI elements of the User Profile Detail screen.

Steps:

1. **Opened App**
   Navigated to the group details screen by clicking on the group title at the top of the group chat
2. **View Members**
   Verified that the list of group members is displayed
3. **Add Member**
   Confirmed the presence of the "Add Member" button to add new members to the group
4. **Admin Options**
   Verified the option to make a member an admin or not
5. **Self-Exclusion**
   Confirmed that the user cannot remove themselves from the group via the details screen
6. **Error Handling**
   Checked for appropriate error messages when trying to add members or assign admins
7. **Navigation**
   Verified smooth navigation from the group chat to the group details screen
8. **Cross-Device Testing**
   Tested the group details screen on multiple devices to ensure consistent behavior

Expected Result:

- The user's profile picture, name, status, and bio should be displayed correctly.
- Clicking on the profile picture should allow changing or viewing the full-size image (if applicable).
- The status (online/offline) and availability should be displayed correctly.

- The "Edit Profile" button should allow the user to update their details, and changes should be saved successfully.
- The "Change Password" functionality should navigate to the password change screen and allow for successful password updates.
- Additional options like "Logout," "Delete Account," or "Privacy Settings" should work as expected.
- Profile updates (e.g., new picture or bio) should reflect immediately after saving.

Actual Result: Video Link
Pass/Fail: PASS

12) Chat with the help of AI

Test Case ID: TC_012
Test Objective: Verify the functionality and UI elements of the User Profile Detail screen.

Steps:

1. **Opened App**
   Navigated to the chat screen
2. **AI Suggestion Button**
   Entered a message and clicked the "AI Suggestion" button
3. **Message Enhancement**
   Gemini AI suggested an enhanced version of the message
4. **Send Enhanced Message**
   Clicked "OK" to accept the enhanced message and sent it to the recipient

Expected Result:

- The chat screen loads successfully.
- The "AI Suggestion" button is visible and clickable.
- Gemini AI suggests an enhanced version of the entered message. The suggested

- After clicking "OK," the enhanced message is sent to the recipient in the chat..

Actual Result: Video Link

Pass/Fail: PASS