Linnaeus University
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Developer of Digital Services

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Assignment CBSE

Group Members

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Task 1. Component as a Service – Chat Server

For this task we chose to apply the following process:

"CBSE with reuse: developing the Chat server by reusing existing libraries/API"

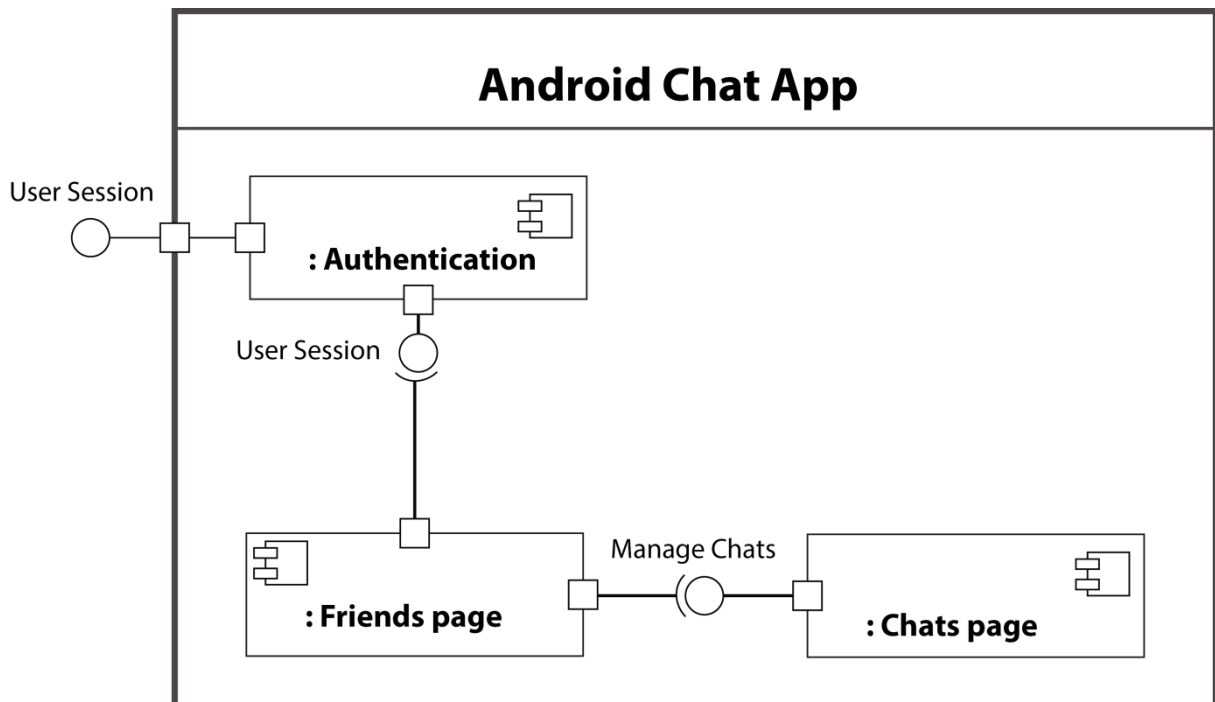The API we chose to use is from the following page:

http://quickblox.com/

Here we found a good API for which to create our chat application. The API itself covers all bases and has all the functions needed to fulfil the assignment specifications.

Usage of the API

- For registration/login purposes the user is allowed to sign up either via Facebook or by using his/her e-mail. This is done by using the QuickBlox registration/login/authentication components.
- The first page shown to the user is the user's "Friends" page. The "Friends" page has the following functionality:
    - Friends list which is sorted alphabetically and updated automatically whenever a user goes online / offline.
    - Full CRUD functionality on friends.
    - Contains search functionality.
    - Open the "Chats" page.
- The "Chats" page contains the following functionality:
    - List of ongoing chats.
    - Chat name = name of person the chat is connected with /chat group name.
    - Open "New Chat" page.
    - Open ongoing chat.
- The "New Chat Page" contains the following functionality:
    - Show list of friends.
    - Select friend / friends to new chat.
- Each chat option (private / group) allows users to send messages and / or attach a multimedia file.

Task 2. Component Composition – Android Chat App

Component descriptions

Authentication
Implemented Android Components

- MainActivity.
- LoginActivity.
- SignUpActivity.

Interaction exploitation

- User input, credentials (explicit).
- Validation of input (implicit).
- Redirect to "Friends" page.

Requires / Provides Interface

- Provides interface:
  - User Session

Server Side Interaction

- Sends validated user credentials to the server's user database for authentication / registration.
- Receives a pass / fail response from the server's user database.

Friends Page

Implemented Android Components

- FriendsListActivity.
- AddFriendsActivity.

Interaction exploitation

- Updates user's friends online status. (Implicit)
- Lists all user's friends (implicit).
- Search for users (explicit).
- Open the "Chats" page.

Requires / Provides Interface

- Requires interface:
  o User Session
  o Manage Chats

Server Side Interaction

- Receives a list of user's friends and their online status from the server.
- Receives a search (user / message) result from the server's database of users.

Chats Page

Implemented Android Components

- MainChatActivity.
- NewDialogActivity.
- PrivateDialogActivity.
- GroupDialogActivity.
- AddFriendsToGroupActivity.

Interaction exploitation

- Write / receive messages (explicit / implicit).
- Display a dialogue (implicit).
- Select / add friends to chat group (explicit).

Requires / Provides Interface

- Provides interface:
  - Manage Chats

Server Side Interaction

- Receives a list of ongoing chat groups (private & group chats).
- Receives a dialogue history.
- Sends a message (text / multimedia / etc.) as part of a dialogue.