Assignment 3
'Whisper'
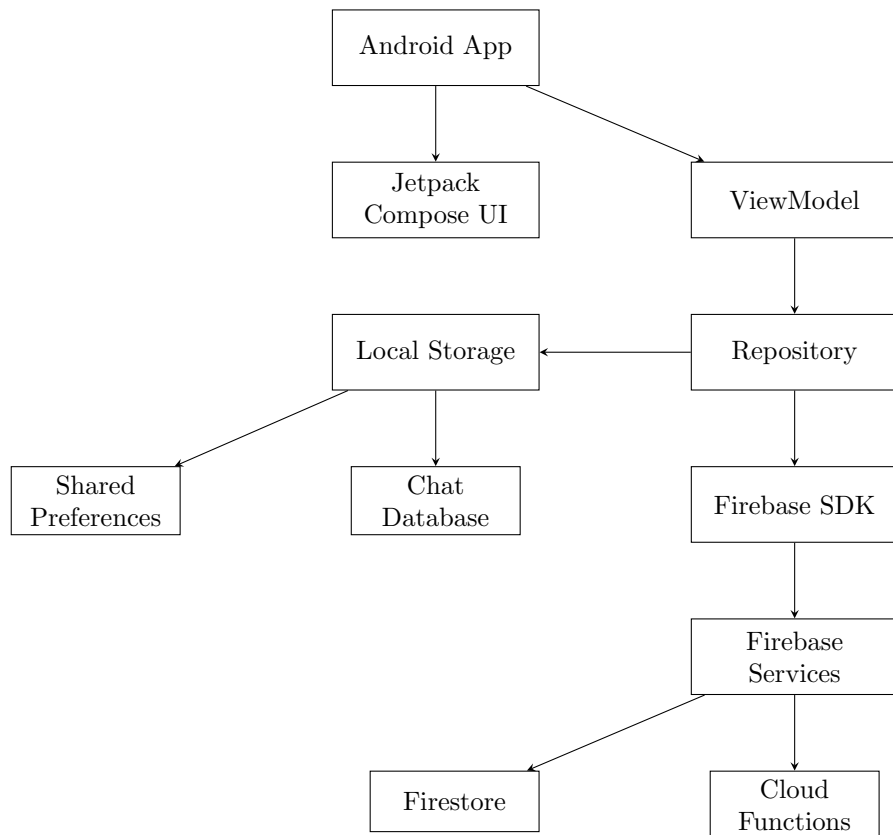# System Design

Joakim Tollefsen Johannesen
joakimtj@hiof.no

Niklas Berby
niklab@hiof.no
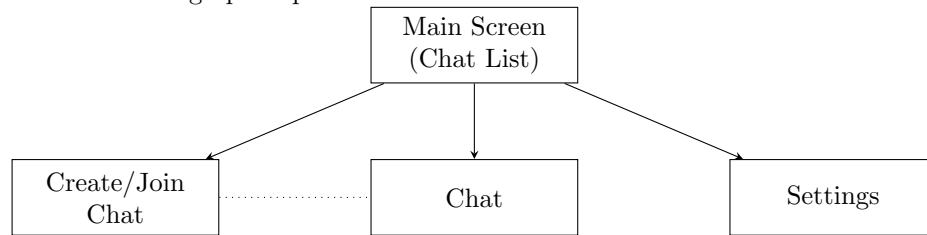
2024

1   Technical Structure

```
            ┌──────────────┐
            │ Android App  │
            └──────────────┘
             │            \
             ▼             ▼
      ┌──────────┐   ┌──────────┐
      │ Jetpack  │   │ViewModel │
      │Compose UI│   └──────────┘
      └──────────┘         │
                           ▼
      ┌──────────────┐ ┌──────────┐
      │Local Storage │◄│Repository│
      └──────────────┘ └──────────┘
        │        \           │
        ▼         ▼          ▼
 ┌─────────┐ ┌────────┐ ┌──────────┐
 │ Shared  │ │ Chat   │ │Firebase  │
 │Prefer.  │ │Database│ │  SDK     │
 └─────────┘ └────────┘ └──────────┘
                             │
                             ▼
                        ┌──────────┐
                        │Firebase  │
                        │Services  │
                        └──────────┘
                         /        \
                        ▼          ▼
                 ┌──────────┐ ┌──────────┐
                 │Firestore │ │ Cloud    │
                 └──────────┘ │Functions │
                              └──────────┘
```

- Data storage and management:

  - Firebase Firestore to store chats, messages and user data.
  - Firestore will handle chat and message synchronization.
  - E.g., room exipration.

- User management:

  - There is no user authentication planned due to the anonymized nature of the app.
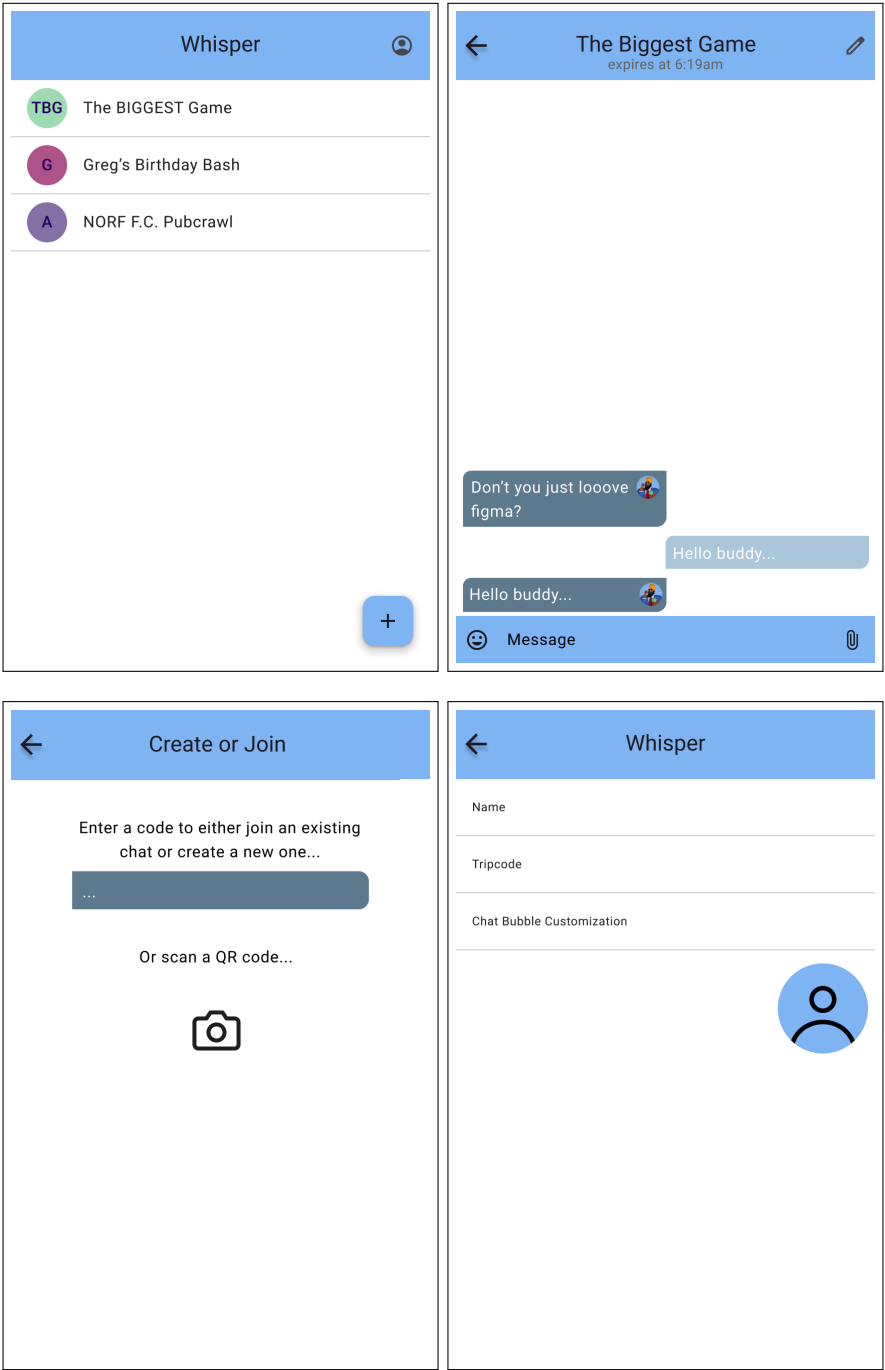 - Most relevant user data (preferences as such) will be stored locally.

2 Navigation

Below is a graph representation of the app's navigation. The screens are unlikely to change much from the project proposal outside of changes made to comport with Material Design principles.

```
              ┌─────────────────┐
              │  Main Screen    │
              │  (Chat List)    │
              └─────────────────┘
         ┌───────────┬───────────┐
┌──────────────┐ ┌──────────┐ ┌──────────────┐
│ Create/Join  │ │   Chat   │ │  Settings    │
│    Chat      │ │          │ │              │
└──────────────┘ └──────────┘ └──────────────┘
```

The dotted lines represent navigation to the chat that has been joined/created.

After some consideration, we've decided that we will join the Create and Join screens together.

The primary screens we have planned are shown in the images below.

Whisper

TBG — The BIGGEST Game

G — Greg's Birthday Bash

A — NORF F.C. Pubcrawl

+

The Biggest Game
expires at 6:19am

Don't you just looove figma?

Hello buddy...

Hello buddy...

Message

Create or Join

Enter a code to either join an existing chat or create a new one...

...

Or scan a QR code...

Whisper

Name

Tripcode

Chat Bubble Customization

3 Resources

We plan to source most art assets externally if we deviate from this we will, of course, document it. It's a little difficult to make this decision right now. But we do know that the following will be sourced externally:

1. Material Design symbols for common actions.

2. Sound effects (if implemented). E.g. push notifications.