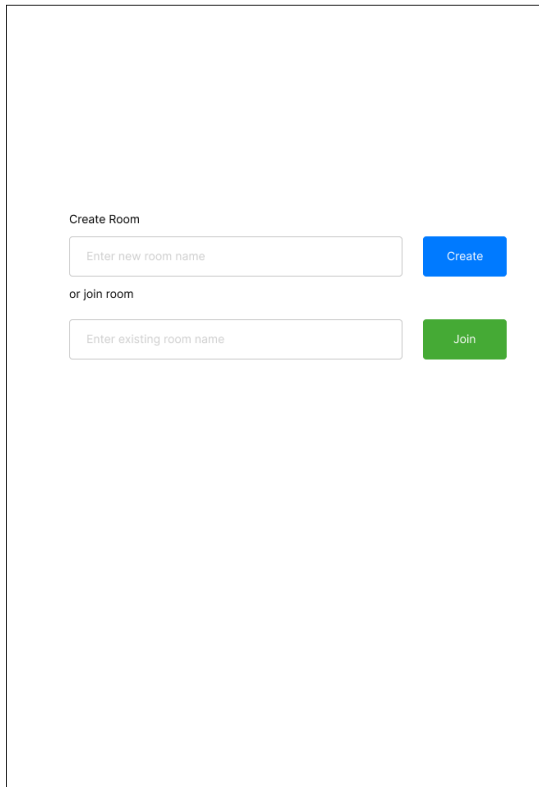
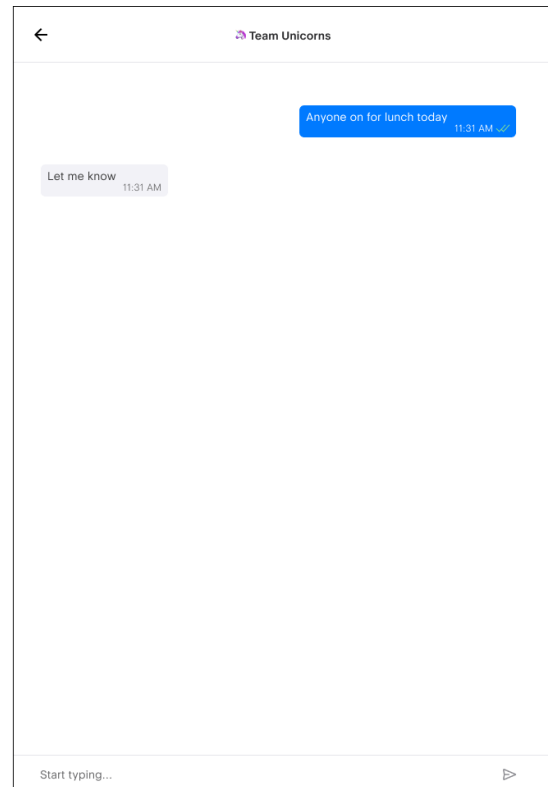


Fullstack Engineer Takehome Test

Duration: 3 days

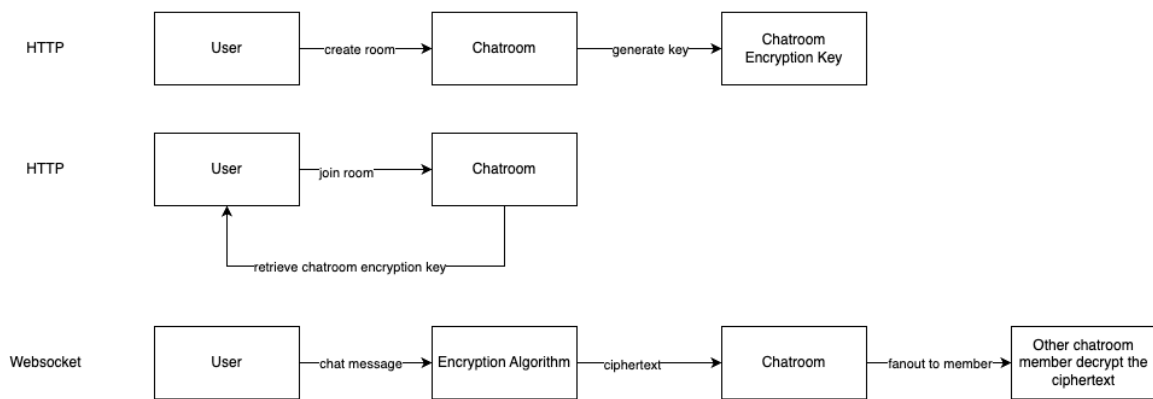
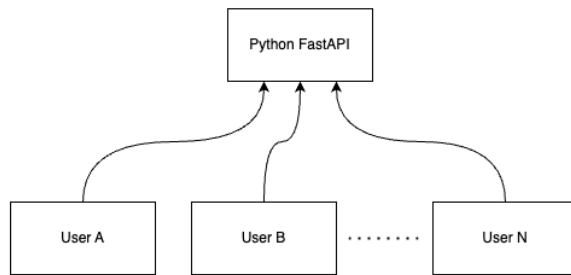


A mobile app interface for creating or joining a chat room. It features two sections: 'Create Room' and 'or join room'. The 'Create Room' section has a text input field labeled 'Enter new room name' and a blue 'Create' button. The 'or join room' section has a text input field labeled 'Enter existing room name' and a green 'Join' button.



A mobile app interface for a chat room. At the top, there is a back arrow and the room name 'Team Unicorns'. The chat area displays two messages: a blue message bubble saying 'Anyone on for lunch today' with a timestamp of '11:31 AM' and a status of 'seen', and a grey message bubble saying 'Let me know' with a timestamp of '11:31 AM'. At the bottom, there is a text input field labeled 'Start typing...' and a send button represented by a right-pointing triangle.

Build a basic end-to-end encrypted chat mobile application. For simplicity the application should use REST API to create or to join the room and should use websocket to publish chat to all the chatroom members. The application consists two pages: the front page and the chat page. The front page allows user to create or to join a room, while the chat page will be the place the chatting take place.



The application will use FastAPI as an intermediary to handle all of the data traffic, thus the application is expected to be an end-to-end encrypted application. Upon chatroom creation, the chatroom encryption key will be generated. And when somebody join a room, this encryption key will be distributed to them. This encryption key is used to perform an encryption to the chat message before getting passed to the server and fanout to the chatroom member.

You should use these technology stack:

- Backend: Python, FastAPI
- Frontend: React Native

Other than what is specified, you may use any other libraries/technology stack to help you out.