

Chat app take-home assignment

You are hired as the first engineer for a brand new chat app company. Your job is to build out the initial architecture that will power the chat system for the coming months. Here are the main requirements that the product team is asking for:

1. Users should be able to chat with each other in real-time i.e. messages should be delivered as soon as possible
2. Users should be able to browse past chat history
3. Users should be able to see the online/offline presence of other users

Your task for this assignment is to describe a system architecture that satisfies these requirements. You may draw an architecture diagram or write an essay, but clearly outline the components of the system, how they interact with each other, and what the costs/tradeoffs of your design are. We value our candidates' time, so please don't spend more than 1-2 hours on this exercise.