App Idea:

This app will simulate trying to teach someone a preselected task. Users will interact with an AI Agent who doesn't know the material, and will attempt to teach the agent the material using the Socratic method. This app will enable users to practice teaching material without having to find another student to teach. Users will have the option to decide what they're teaching or the agent will have to describe their problem.

Users:

- Tutors: tutors-in-training can use the website to learn how to teach real students to come to answers on their own by practicing on a virtual student.
    - Age: 18 - 65
    - Expertise with Technology: Advanced/Expert Level
- Students: The best way to learn is to teach others. Students can use this website to learn concepts by teaching them to a virtual student.
    - Age: 14 - 24
    - Expertise with Technology: Beginner/Intermediate Level

Major Workflows:

Old Conversation:

1. User logs in with their MTU username and email.
2. User sees list of pass conversations and CTA to "Add New Conversation"
3. User clicks on an old conversation and can continue where they left off
4. User can either talk until they want stop or the agent feels they have sufficiently learned the topic.
5. If agent has learned the topic, they send a message containing a review of how well the user taught the agent.

New Conversation:

1. User logs in with their MTU username and email.
2. User sees list of past conversations and CTA to "Add New Conversation"
3. User clicks New Conversation Button and a modal pops up prompting the user to input the topic they would like to teach (either dropdown or text input).

4. User inputs topic and clicks “Start Chatting” → Idea: We could use the AI agent to determine if the inputted topic is appropriate, or, have the AI agent describe the problem they need solved to the user (simulates realistic tutor/student interaction)
5. New conversation pops up with the agent asking for help.
6. User can either talk until they want to stop or the agent feels they have sufficiently learned the topic.
7. If the agent has learned the topic, they send a message containing a review of how well the user taught the agent.

Data:

User

- Authenticated by Spring
- Username
- Password (External is possible with MTU SSO)
- Has conversations

Conversations

- Topic (input by users)
- Have messages

Messages

- Have timestamps
- Have senders (user ID or agent)
- Have message (plain text)

Views:

1. Login Page
2. List of Conversations with option to add a new one/topic
3. Open Conversation

[Views Mockup]

Anticipated Challenges:

- Tracking past conversations

- Getting all conversations in real time
- User could input an inappropriate topic
- Setting up the server GPU
- Hosting and communicating with a self-hosted agent...
- Simulating other coaching challenges, like keeping the students on track, knowing when to say no, etc.
- Figuring out when the agent has “learned” the topic
- Figuring out what the agent knows to start