Want to work with us? Here's your technical interview task.

It's week 1 on the job. You've been asked to lead the development of a new feature for our flagship generative AI product, Ad Studio. The feature is called **Audience Discovery** and it will enable advertisers to quickly discover audiences on advertising networks who are interested in their products. Ad Studio can then use AI to generate creative advertisements for each of these audiences.

Advertising networks track and categorise user behaviour into ~300 high level "topics" which advertisers can use to define their target audiences. Two APIs are available:

- API_A is called with <topic> and returns <audience size> interested in topic
- API_B is called with <topic 1> and <topic 2> and returns <audience size> interested in BOTH topic 1 AND topic 2

Upon a user selecting a topic for their product, your feature should output a dashboard of audience topics ranked by "product interest", (B) / (A), the % of each audience topic also interested in the product topic:

Product	*Audience*	*Size of audience (A)*	*Size of audience also interested in product (B)*	*Product interest (B) / (A)*
Makeup	Fitness	1,000,000	300,000	30%
	Nightlife	500,000	100,000	20%
	Music	2,000,000	50,000	1%
	...	...	...	...

Note that API calls are throttled at 10 requests per 5 minutes, and this feature needs to serve users selecting any of the 300 topics for their product topic at any time.

Your task is to illustrate and list considerations for how you'd build a production dashboard that:

- Shows the size of 300 audience topics (A)
- Allows a user to select a product topic
- Shows the size of 300 audience topics also interested in the product topic (B)
- Calculates (B) / (A) and ranks the audiences
- Refreshes the above given a new user-input topic (outside of the default 300)
- Visualises all of the above for users in a simple, interactive but highly functional way

We are looking for technical insight into techniques you'd use and potential issues you anticipate. Please submit your response in 5 slides or less, having spent no longer than 3-4 hours on the task. You won't have the opportunity to ask questions prior to the interview, so do list any assumptions you make.