User Interface (UI) Component
The initial UI for the alpha prototype had a simple search bar, the query that the user had typed in, and the numeric result of the query.

After feedback from Gresham Schlect and Aaron Crandall, we refined the UI to be nicer and more informative for the user. First, we added a box in which users would be able to see previous queries they had entered.

We added “Query Mappings,” a breakdown of how the system split their query up into categories, which shows the user a simplified version of what the NLP component is doing. We also added a plain language reply to the query rather than a simple numerical answer.

The answer to “How many software developer jobs are there in Seattle?” was changed from a simple “###” to a significantly more user-friendly “There are #### software developer jobs in Seattle, WA”

API Querying Component
The project needed a component that would communicate with the Emsi API. We created a python component that takes the dictionary of outputs from the NLP component, and mapping that dictionary to Emsi’s facets:

Location, Time Frame, Business Name, Position Name, Position Name, and Skills.

The component uses this information parsed out from the user’s query, and connects with the Emsi API to retrieve the information that the user is looking to find.

Natural Language Processing (NLP) Component
The query parsing component is powered by an NLP Python library called Spacy, and it tags each word in the query with a part of speech. Unknown entities are checked against the Emsi API to help identify words that can be ambiguous (Amazon could mean the company or the rainforest).

架构图

**Glossary**
- NLP: Natural Language Processing
- API: Application Programming Interface
- React: JavaScript Library for user interfaces

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