Quaternary Star System
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SoftDev1 pd1
P#01 -- ArRESTed Development
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APIs Using:

Wikipedia	https://en.wikipedia.org/w/api.php
Wolfram Alpha	http://developer.wolframalpha.com/portal/myapps/index.html
NASA Exoplanet	https://exoplanetarchive.ipac.caltech.edu/docs/program_interfaces.html

Rough outline:

Use NASA's exoplanet API to determine an exoplanet's basic characteristics

Use Wikipedia's API to get information about a given engine or spacecraft

Use Wolfram Alpha's API to calculate statistics about travel to said exoplanet (or between two exoplanets), with given engine or spacecraft:

- Time of arrival under certain acceleration conditions (continuous thrust: accelerating half way, decelerating the other half; or with some amount of fuel)
- Mass ratio of spacecraft with a given engine under certain acceleration conditions (according to the Tsiolkovsky Rocket Equation)

Somehow parse English query for keywords like "how long" or "time"

The amount of APIs searched through depends on the keywords: something like "how long to reach {{exoplanet}} with/using Merlin 1C" will work like this:

- Search exoplanets API for the planet
- If two exoplanets are named, send an equation to Wolfram|Alpha to get the distance
- Search Wikipedia API for the engine/rocket
- Use the data gathered from the two above APIs to send an equation to Wolfram|Alpha
- Return the result.

Meanwhile, a query like "stat[istic]s for {planet OR rocket engine}" will just get a result from the exoplanets API or Wikipedia API respectively.

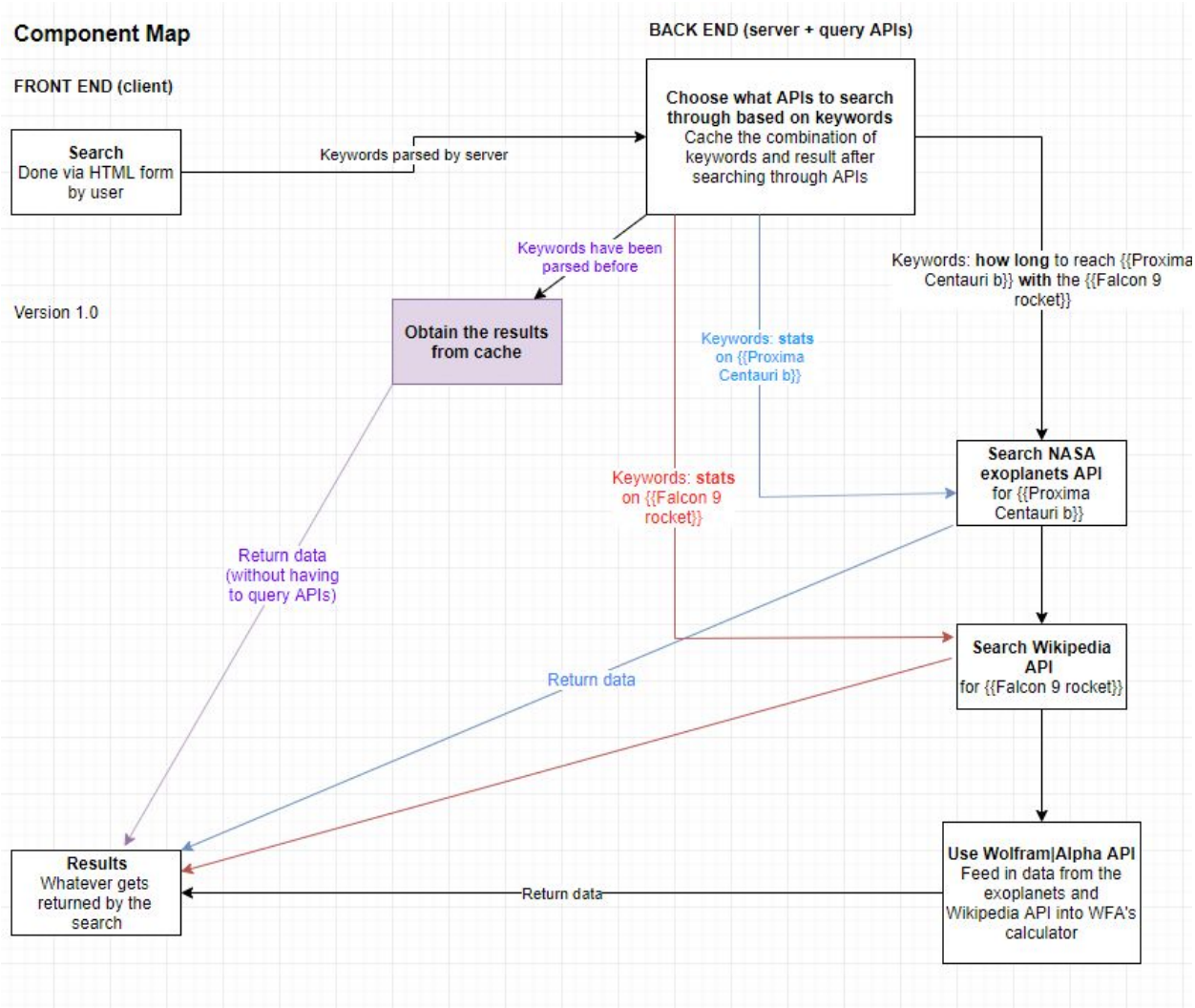
Task Division:

Kevin - Project Manager

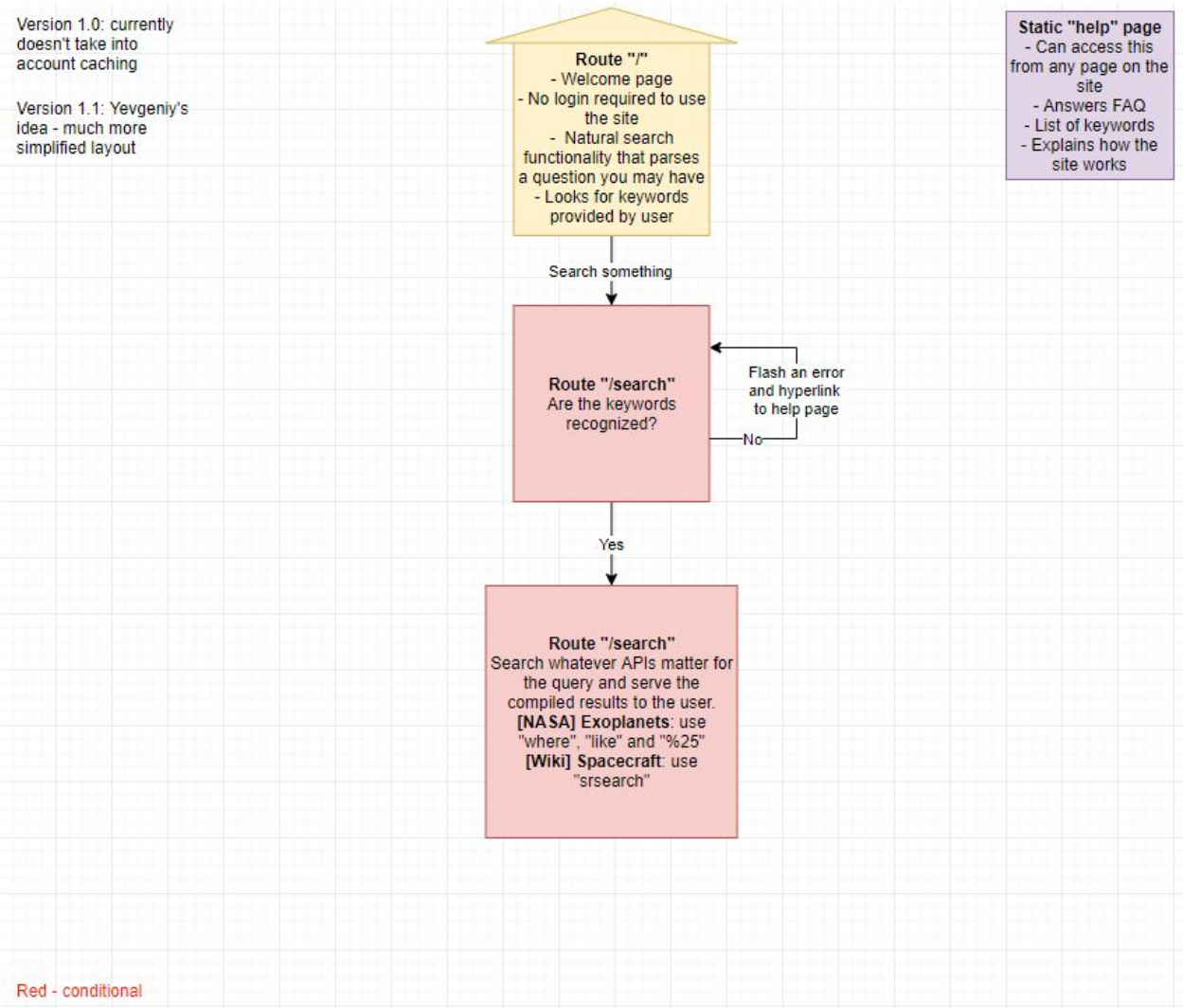
Emory - Frontend: creating templates, routing, styling with bootstrap

Elizabeth - Connecting Frontend/backend, unfinished database tasks

Yevgeniy - Handle caching in database, searching through database, generating queries using natural language input



Site Map:



Database Schema:

Table	Contents
engines	mass, specific impulse, thrust
planets	distance, right ascension, declination
timeqs	time, engine, origin, destination
massqs	massr[1], engine, origin, destination

[1] ratio of fuel mass to empty spacecraft mass