IBM Cloud

Data Science Workbench

Area: IBM Cloud and Cognitive Software
Role: UX Designer and Researcher
Time: 5 weeks (handed off to early career professionals for further development)
Completed this incubator project as a part of Patterns internship at IBM

Main Objective

The goal for this project was to structure the information architecture and interface of running data science computations on the cloud. The team's focus was more specific to locating errors in the workflow to be able to quickly compare and contrast results or scripts.

Research

To understand our users more and the pain points they face we:

- Looked into competitors to familiarize ourselves with the platforms
- Analyzed 14 ethnographic interviews
- Interviewed 5 sponsor users

And from this we were able to learn more about alternatives the users turn to and how they feel when working with the current platform.

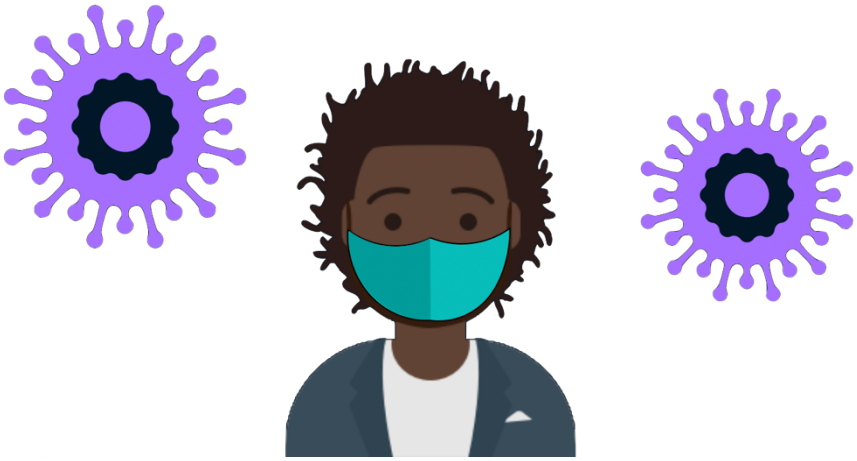
We were able to extract a few repeating insights from our research

- "I'm feeling very annoyed during error handling process"
- "Finding errors takes lots of time"

Persona

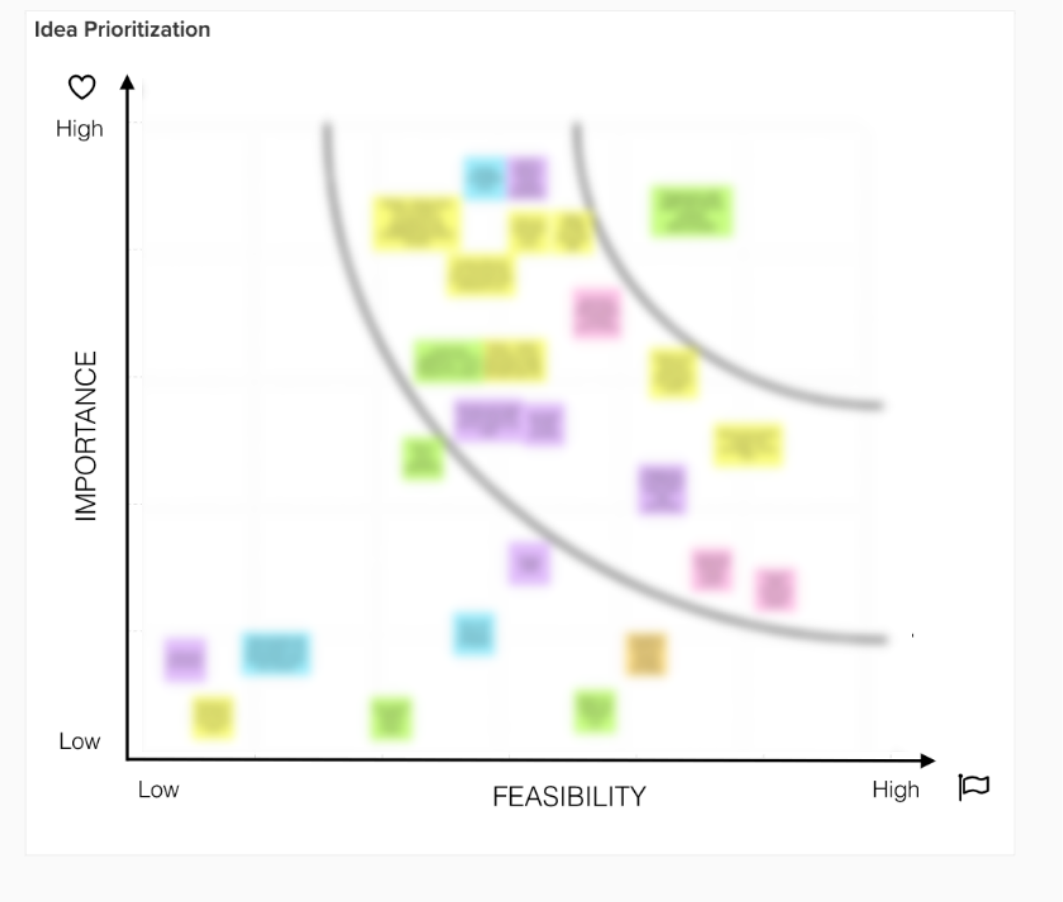
So we created our user Dan, who's a senior data scientist that works at XYZ research institute for almost 23 years now! His institute has been currently working on trying to combat COVID-19.

Every time Dan runs into a nasty error, he faces the misfortune of having to sift through dozens of log files which is extremely annoying and overwhelming for him.



Prioritizing

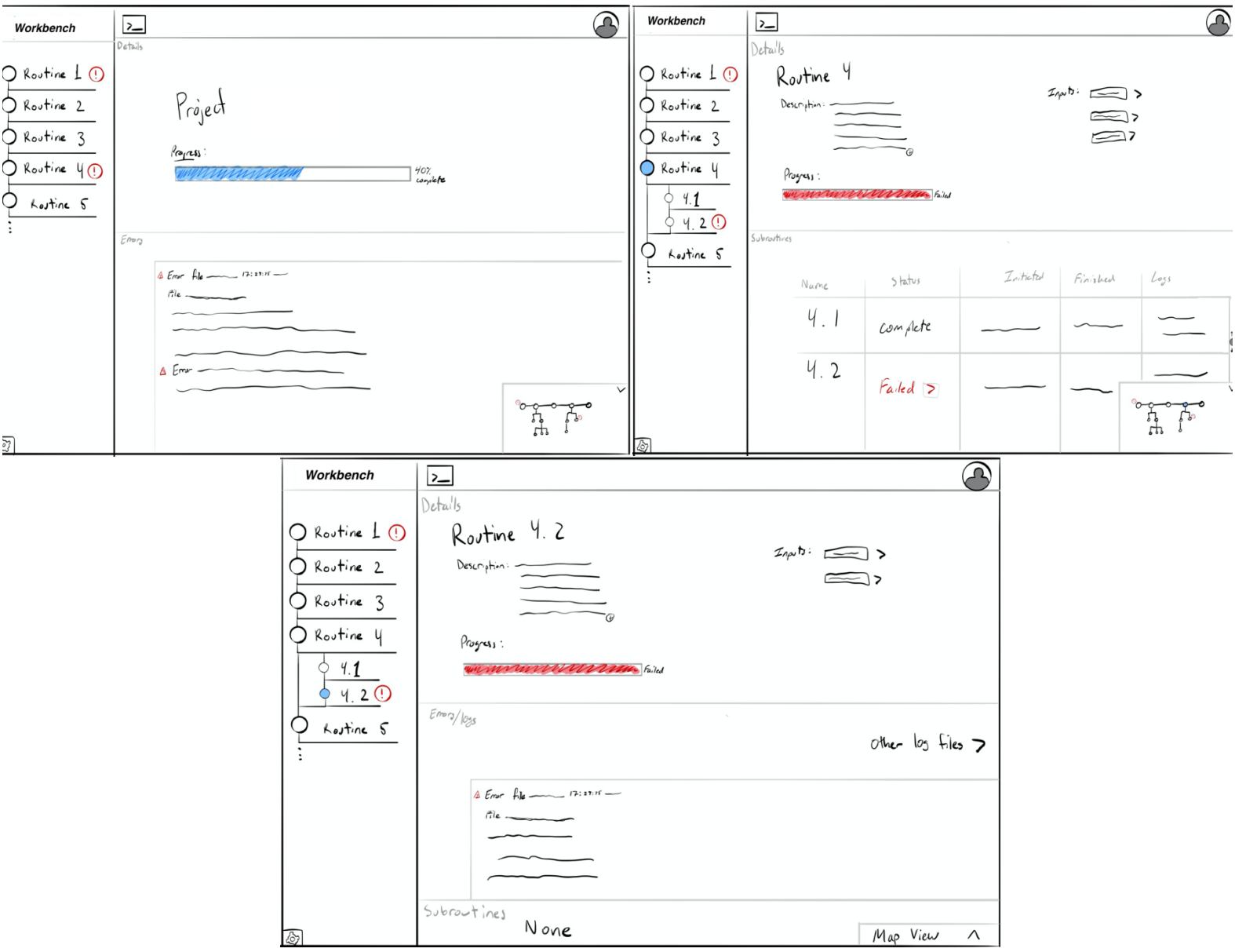
As a team, we took our findings from user interviews and understood that our users face numerous issues, but we had to really prioritize what we wanted to achieve in our 5 weeks working on this project. So, the team participated in many ideating sessions and completed a prioritization activity with our stakeholders who are also users to understand what aspects we should put more emphasis on – finding a quick way to locate errors and the ability to view different sets of input/output at the same time to compare.



The Loop of Iterating

So after finalizing our users' needs and settling on a focus, the team began prototyping!

Phase 1: Paper prototyping

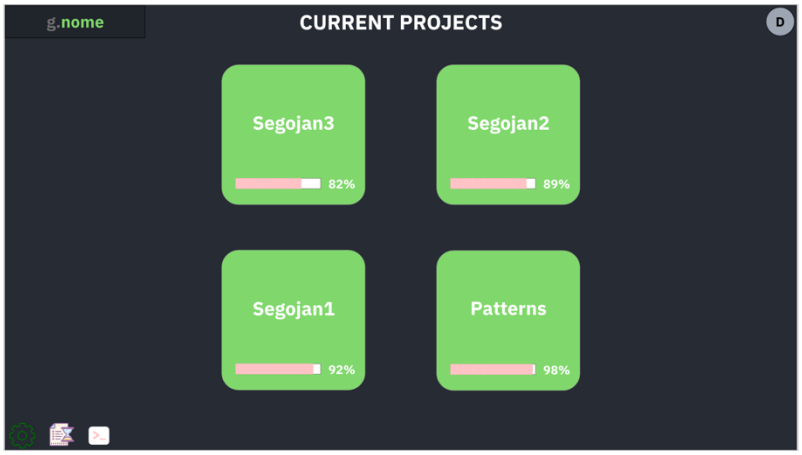


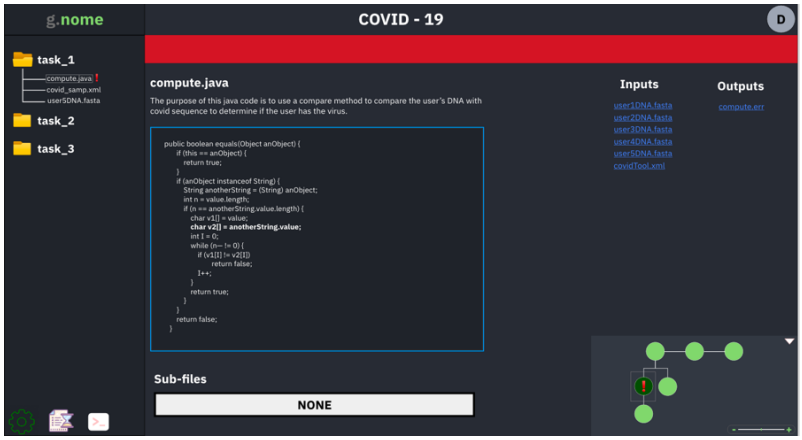
What are the main features?

1. Tree directory structure – this was a must. All of our users are familiar with this structure so why not include it? It provides users with an easy access to navigate between different folders – tools and scripts
2. Alert system – in the current platform users have no clear indication of where errors are located which results in them sifting through a lot of unnecessary log files. With these alerts, it provides the users a quick and clear indication of where to navigate to – cutting down the error locating time by a lot
3. Mini map – this is also another way to view an overview of the pipelines and tools you are working with. It is another way to view error locations in a graphical view

Phase 2: User testing + Digitizing!

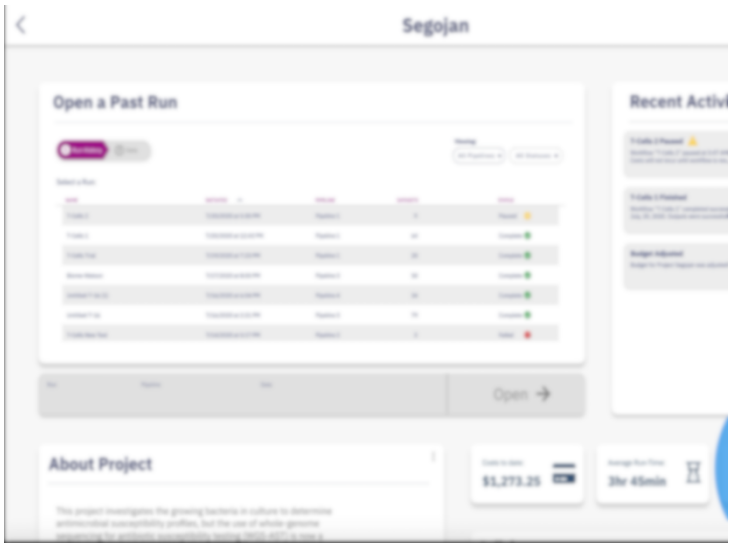
At this point, the team was beginning to get comfortable and understand the core basics of what was needed in our end product. We conducted a few user testing sessions with our paper prototype to ensure we were addressing the user's needs. With the received feedback and suggestions, the team diverged and created quick prototypes of our latest ideas and presented what we came up with





Phase 3: Reiterating once again

At this point, the team has converged and worked on one prototype which was presented to the incubator team. With much feedback and clarification, the team incorporated new ideas and tweaked ideas that were already in the prototype.



What has changed?

1. Ability to **edit/view parameters** – common issues arise in this area where the user just needs to change a parameter quickly but the current platform doesn't allow this so the user is forced to do it on their local machine and re-upload
2. **Open new tab** and view different runs/data sets there in order to compare results or debug errors

The future of Workbench

As this project is in further development – I am ecstatic to see the end result and how my work has contributed to the core design of this product!