

Lifesprk Technical Evaluation

For Data Science Candidates

Introduction

Congrats on making it to this step in the interview process! We are looking forward to seeing what you can do.

This evaluation is designed to see how you'd handle situations that you might encounter on the job at Lifesprk. Since this is a remote team, a lot of the actual work will be taking requests like the ones below and seeing them through to completion. Since real work doesn't have too many true/false or multiple-choice questions, we've avoided them on this test too. Instead you'll find that you could solve these things in a variety of ways, and we hope to see your creativity shine through in the decisions you make.

Good Luck! We look forward to seeing what you create and learning more about how you work.

Tips

1. While we'd normally love for you to clarify requirements, in the spirit of fairness we hope that you try and complete the evaluation with the information we've given you. But if you get completely stuck, let us know.
2. This test is designed to take 2-4 hours to complete. Keep this in mind as you think about your solution – try not to get too carried away.
3. With limited information, do your best to turn this scenario into a real world one.

Pre-Requisites

Since Lifesprk is a Health Care company we have created some fake data to support this exercise. Don't worry this data is completely made up, they aren't real people it is not real PHI. You can find these data sets here:

[admissions](#)

[members](#)

[scores](#)

Please submit your code via a git. It can be a public repo or you can be prepared share it with one of our teammates as part of submission.

You can complete this exercise using any approach that you like. We have some teammates that have experience with Python, R and Jupyter Notebooks, but please use what you are most comfortable with. This is as much about story telling as it is about analysis.

Scenario

We regularly get data from our partners for each population we are serving. We are currently processing these data dumps (these files come as excel, csv, pipe delimited, etc) into our data warehouse to support various forms of analysis. We have many questions that we ask on a daily, monthly or quarterly basis and our data pipeline is being built to support these analytical questions.

We would like you to do an analysis of some of our datasets.

Our **member data** comes not only with some demographic information but also a set of scores that are produced by our partners. The algorithms for these **scores** are proprietary in nature and while they are likely leveraging claims data, they may incorporate many other data sets in their model.

Our **admissions data** comes daily and helps to inform us if any of our members have had an incident that we can support them through to a quick recovery.

This analysis is often at the request of our CFO, our VP of Population Health or our VP of Life Management. And we are committed to finding ways to operationalize the insights that you will discover on the job.

User Stories

Here's what we've gathered from conversations with our CFO and VP of Pop Health. We've taken a stab at ranking them in order of importance, so if you don't have time to get to all of them, just start at the top.

1. As the CFO I would like to be able to predict which members are likely to be admitted into the hospital, this would allow us to prioritize outreach to those members and support them in the home in order to avoid future hospital stays.
2. As the VP of Life Management I to understand what factors contribute to hospital admissions, this would help our life managers understand our members more deeply and provide personal care plans for each member.
3. As the VP of Life Management I would like to understand the members that have the most hospital admissions.
4. As the VP of Population Health, I'd like to understand which of the care facilities that our members regularly are admitted to have better performance than the others.

Submission

Your analysis will be evaluated by Dave Clements, the VP of Engineering at Lifesprk and other members of the product and engineering team.

To submit your analysis:

1. Produce a report and share it with Dave via email to dclements@lifesprk.com.

2. Along with it use this link [One Hour Zoom Call](#) to schedule some time to review it with Dave. He will add other teammates. This will be a video call and we would like to record it to share with other stakeholders.
3. Share your git repo with David via email, dclements@lifesprk.com - Or if this is on Github you can share it to <https://github.com/digidigo>