PATHSTREAM

Pathstream Test Task - Data Analytics

Instructions:

As previously shared, the take-home is designed to provide a better sense of your **strategy and approach** to the role while giving you some visibility into the work ahead. To reiterate from the job description, the role is to work alongside the learning experience team, executive team, and engineering team to co-lead the design and creation of Pathstream's Data Analytics online instructional content. The primary responsibility of the role is to create engaging and informative curriculum which will be delivered online through the Pathstream platform.

We recommend spending no more than 2 - 4 hours on this and encourage you to ask questions before you start to make sure you understand the task and our expectations. There are 3 tasks you need to complete, focusing on SQL, A/B Testing, and Technical Writing. We expect to receive your submission in 2-5 days, as a Google Docs link to your task once it is complete (make sure the sharing setting are set to "Anyone with the link").

Task 1: SQL - Recommend time per task - max 1 hr.

This is open-book so feel free to use stackoverflow, etc. as you would do in a work environment. Use any SQL implementation you are most comfortable with (MySQL, PostgreSQL, etc.)

user_actions			
userA_id	**userB_id**	**timestamp**	**action**
1037392	3437315	2015-03-15 00:01:05	Requested
2138102	5438443	2015-03-15 00:01:07	Accepted
2331234	1231232	2015-03-15 00:01:08	Rejected
...	...	...	...

Table Name: *user_actions*

userA_id: *Id of user who took action*
userB_id: *Id of user who had action taken on*
timestamp: *Timestamp of user A action*
action: *Type of action user took (Requested, Accepted, Rejected)*

1) Write a query that lists all users who have been both rejected and accepted. (relevant time period: all time)

2) Write a query that determines the % of requests per day that resulted in a friendship. A friendship occurs when user A requests user B and user B accepts user A. (relevant time period: all time)

Task 2: A/B Testing - Recommend time per task - max 1 hr.

The table below shows results from an A/B/C test of a product feature on a continuous metric.

	Mean	Standard Deviation	% Lift (relative to control)	N
Control	7	4	---	12,000
Variant 1	6.7	3	- 4.2%	12,000
Variant 2	7.1	6	1.4%	12,000

In 2-3 sentences, describe the results of this test and the recommendation you would make to the product manager. Make any necessary assumptions but please state those assumptions.

Task 3: Technical Writing- Recommend time per task - max 2 hr.

Prompt: You are building a data analytics curriculum that provides the most efficient and effective pathway to an entry level data analytics role. With a 'big-picture' mindset of curating a curriculum that helps our students gain relevant industry skills that will ultimately lead to employment. One of the most overlooked topics within statistics, yet pivotal to know as a data analyst is *linear regression*. Create a sample of course content around this topic. This should be a **mini-lesson** in the medium of your choice (google docs, google slides etc.). You're encouraged to be creative and integrate different forms of media to curate the content.

Evaluation Criteria

- Quality of content
    - Your ability to take a new content area, fully grasp it, and thoughtfully convey this information to a learner who is unfamiliar with the concept
    - Clear, logical structuring of information

    - Balance of foundational/conceptual information with practical/tactical instruction of how to “do”
    - Prudent use of visuals (acceptable to draw and insert a photo for a visual concept)
    - Quality and relevance of references/analogies
- Learning experience
    - Clarity of learning objectives and extent to which content maps to these objectives
    - Extent to which the content is engaging and uses inquiry based, project based learning
    - Effectiveness of instruction
        - Use of an appropriately friendly yet professional tone
- We are <u>not</u> evaluating on:
    - Length of responses