blueground

Data Analyst Assignment

This assignment is a chance for you to showcase your skills and will hopefully form a good base for our discussions further down the process. We believe that it's for the mutual benefit of both the team and the candidate to get a good taste of one another's way of working and thinking and we have designed the assignment with that in mind.

Description

> Imagine customer pipeline that consists of many stages. We calculate conversion and transition time between each pair of consequent stages which is quite simple, and for some stages we calculate an additional metric which is called the average backlog. It is a weekly average of daily count of customers that are still waiting to transit to the next stage. High number means there is a bottleneck that should be improved.

Some helpful points:

1) We consider the customer being in a backlog if he doesn't reach stage #2 between 1 and 14 days after reaching stage #1

2) If customer reaches stage #2 on the same day or the next day he never appears in the backlog

3) If customer doesn't reach stage #2 at all he's in the backlog until day 14, then we forget about this customer

4) If customer reaches stage #2 later than 14 days after stage #1 he's appearing in backlog only until day 14

Example: if a customer reached stage 1 on 2017-01-01 and stage 2 on 2017-01-08, he appears in daily backlog on 2017-01-02,2017-01-03,2017-01-04,2017-01-05,2017-01-06 and 2017-01-07

Deliverable

We provide you a dataset of dummy customer records that have ID and 2 timestamps for entering into 2 stages.
Your goal is to write a PostgreSQL query that calculates weekly average backlog and returns result looking like this (not these numbers, just the structure):

week, backlog
2016-02-01, 5.5
2016-02-08, 9.2

FAQ

How much time should I spend on this?
We know that you're probably super busy and time may be quite hard to find. There is no actual limit as to the amount of time someone can spend on it. However, we'd like you to spend **no more than 3 hours** for this task.

When is the deadline?
You get **5 days** from the time you get this assignment.

What tools should I use?
Any IDE of your choice but please provide the solution in SQL (Postgres dialect).

Need any other clarification?
If you have any other questions either just hit reply to the latest email thread you got open with us or send a direct email to Yannis, Director of Business Operations, at yanniss@theblueground.com