Fenix Technical Exercise
Data Analyst

The Exercise:

Fenix is looking for a data analyst who can retrieve data from our database and work with the raw data to gain meaningful insights that they can then share with the team.

To this end, we've provided you with a subset of data from our call center, contained in the fenix_call_records.csv file. This data represents about 30,000 calls that have gone through our call center (called Cloud 9) in the past 2 weeks as we engaged with our wonderful customers on everything from how to make mobile money payments to how the customer can become eligible for one of our many ReadyPay upgrades.

Your task in this exercise is to gain an understanding of the call records and answer the questions in the "Questions for Analysis" section below using the provided data set. Clean it, chop it, run stats on it, visualize it! There is a lot to be learned and we're excited to see what you can do!

We expect this exercise to take anywhere from 4-5 hours and will keep our expectations to that time range. As such, please return the deliverables (listed below) to eboehmer@fenixintl.com no later than 5 hours after receiving this exercise.

Data Background:

Fenix ReadyPay customers have all purchased one of our home solar kits and enjoy customer support through the Fenix toll free line, which connects them to our 100+ person call center in Kampala. Within the call center, our call center representatives (CSRs) serve on one of three possible teams: sales, support, and success.

Sales CSRs take calls from customers who are in remote villages, usually standing with a sales associate, and ready to purchase a kit from the sales associate. As a result, we see many calls coming from members of our sales team lending their phones to customers who have traveled without a charged phone. Before any customer can take a Fenix product, they must go through vetting with a CSR to ensure they are a good candidate for solar. If they are approved, the CSR will work with the sales representative to associate the kit to the customer's new account in our internal tracking software - thus we have a new customer!

Our Success CSRs focus on customer outreach to ensure a smooth customer experience and to encourage steady repayment. These CSRs often make calls like the 10 day call, whereby we attempt to speak to all customers after having the kit for 10 days to answer any questions that might have arisen. These CSRs also target calls for overdue customers (Overdue Account Calls) and for customers who are near completion (Completion Calls).

Finally, our Support team takes calls from customers experiencing technical challenges or needing support more generally (how to make payments, for example). They work closely

with our Service Centers, spread across Uganda, that handle all hardware repairs in the field.

The "fenix_call_records.csv" file contains a subset of call records, taken during a two week period from the Fenix call center, that you will use to answer the questions below. The data fields are:

Column	Description
call_id	Unique ID for the call
destination_person_id	The unique ID of the customer if the call is outgoing and of the CSR if the call is incoming
source_person_id	The unique ID of the customer if the call is incoming and of the CSR if the call is outgoing
account_age	Time between when the customer's account was created and when the call was made (in days)
account_state	The customer's account status as of the time of the data pull **Complete:** The customer has successfully paid off their solar kit in full. **Cancelled:** The customer failed to pay off their kit and we assume the remainder of the loan will be written off. Kits are automatically cancelled after 180 days of nonpayment. **Suspended:** The customer has not made a payment for 90 days **In Repayment:** The customer is making payments towards their loan, but has not yet completed
occupation	The customer's self-reported primary occupation
language	The customer's primary language
call_direction	Whether the call is coming in to the call center ("Incoming") or a CSR is making a call to the customer ("Outgoing")
call_duration	Length of the call (in minutes)
call_outcome	The outcome of the call, typically indicating whether the customer picked up or did not (though other outcomes are possible). Of note, a Voluntary Return refers to a customer voluntarily returning their kit to a service center to reclaim their deposit (if eligible).
call_start_date	Datetime (GMT) of when the call was first picked by a CSR
call_date_ended	Datetime (GMT) call was ended
call_topics	A list of tags the CSR can choose from a dropdown to inform the team what the call was related to. Multiple tags are possible per call. If individual topics are unclear, please email Erin to clarify. Note that dropped calls are frequent due to poor connections.
call_topic_group	A grouping to organize the call topics into logical categories

Questions for Analysis:

Part I
Choose **at least** 2 of the 4 questions below for analysis. Please use visualizations, statistics, and data manipulation tools as appropriate.

1. When do we experience the most incoming call traffic? How does this vary over the course of the day? How does this compare to the number of outgoing calls being made over the course of the day?
2. How many customers do we talk to each day? How many customers called Fenix multiple times in the 2 week period? What were we discussing with the customers who contacted us multiple times?
3. Do 10 Day Call surveys take longer for our call center representatives to complete than Completions Call surveys?
4. Should we be looking at a customer's occupation when we decide when to call them?

Part II
Please define one other question of your choice to answer using the data set and provide your analysis. How is this analysis impactful to Fenix's call center operations?

Deliverables:

Once you've completed the task, please send us any code you wrote to complete the exercise as well as some sort of accompaniment: a Jupyter notebook, markdown file, memo, PowerPoint, etc. to present your findings.

Feel free to clean up your code, but please do not remove visualizations or steps you took to understand the data, as that helps us follow your thought process through the analysis.

Questions?

Feel free to clarify any details with Erin (eboehmer@fenixintl.com, based in Kampala) or Brianna (bschuyler@fenixintl.com, based in San Francisco). We're excited to see what you come up with!