Overview

The Babylist store offers ~5,000 SKUs that are sold by Babylist to consumers. When an item is not in-stock (e.g., the unit is not on hand at the warehouse to be shipped to the consumer), Babylist refers the user to other retailers where they can purchase the good. Key information around orders of goods from our e-commerce store is contained in 3 tables:

1. Bl_fulfillment_order_items table: Orders at the item level. Orders can contain 1 or more items. Orders can contain goods that are stocked and shipped directly from the Babylist warehouse facility as well as items that are stocked by vendors and shipped directly from vendor locations.

bl_fulfillment_order_items

	ID	ORDER ID	NAME	PRICE	PRODUCT ID	CREATED AT
1	245160	174549	Babylist Hello Baby Box - January	0.00	23177	2018-01-01 00:00:33
2	245165	174553	Brown Bear, Brown Bear, What Do You See?	5.99	1309	2018-01-01 00:02:16
3	245170	174557	Babylist Store Gift Card	50.00	19106	2018-01-01 00:15:48
4	245175	174562	Babylist Hello Baby Box - January	0.00	23177	2018-01-01 00:20:26
5	245179	174565	Spasilk Soft Terry Washcloths (10 Pack) - White	6.99	11682	2018-01-01 00:28:26

2. Bl_fulfillment_orders table

bl_fulfillment_orders

	ID	PURCHASER ID	USER ID	STATE	TOTAL	SUBTOTAL	TAX	SHIPPING	CREATED AT	ORDER TYPE
1	174552	170815	1676892	shipped	0.00	0.00	0.00	0.00	2018-01-01 00:00:39	hello_baby_box
2	174557	170820		completed	50.00	50.00	0.00	0.00	2018-01-01 00:15:48	electronic_gift_card
3	174562	170825	1676638	shipped	0.00	0.00	0.00	0.00	2018-01-01 00:20:26	hello_baby_box
4	174566	170829		shipped	43.94	39.95	3.99	0.00	2018-01-01 00:28:52	inventory
5	174571	170834	1676889	shipped	0.00	0.00	0.00	0.00	2018-01-01 00:30:29	hello_baby_box

3. Bl_fulfillment_order_state table: This table records any changes to the order state including creation, cancellation, shipped.

bl_fulfillment_order_states

	ID	ORDER ID	STATE	CREATED AT
1	506408	174552	open_order	2018-01-01 00:00:39
2	506412	174557	completed	2018-01-01 00:15:51
3	506416	174560	open_order	2018-01-01 00:20:09
4	506420	174565	open_order	2018-01-01 00:28:26
5	506424	174570	open_order	2018-01-01 00:30:27

Data Access

Here are links to download the CSV files

1. Bl_fulfillment_orders table https://drive.google.com/file/d/16ZGGtdXmeMdXaQmphNqnigMdGfxZ7T-3/view?usp=sharing
2. Bl_fulfillment_order_items table https://drive.google.com/file/d/1PMAl0cPYuV8jBVsUvOFu1PA0A1ktZkU7/view?usp=sharing
3. Bl_fulfillment_order_state table https://drive.google.com/file/d/189Y1cinzgookYxdsO9ZsLDUloShZT6e1/view?usp=sharing

Nota Bene: In the bl_fulfillment_orders table orders of type “inventory” and type “shopify” are the same thing.

Project Criteria

We care about our e-commerce revenue growth and supporting that growth with the right amount of operational investment. Poor operational execution - carrying the wrong items, the wrong level of inventory, and the timeliness in which we fulfill orders - negatively impacts the customer experience. Please address the following in your presentation:

- How healthy are our sales?
    - What’s our average daily order volume and how has it changed over time?
    - Are there any patterns that emerge from the order volatility?
    - What types of patterns do you notice about types or quantities of items ordered?
    - Analyze orders containing bottles. Are there any patterns/trends that you notice?
    - What is the breakdown of purchases from users vs non-users and how has this changed over time?
- How are we doing from an order fulfillment perspective?
    - How many orders are we shipping out on average?
    - For orders created within the last 30 days what’s the % of orders that shipped (state = ‘shipped’) within 12hrs, 12-24hrs, 24-48hrs, greater than 48hrs? And how does that change over time?
    - Is there a pattern on what is shipping out faster or slower than other items?

Once you have had a chance to analyze our data and answer the above questions, come up with 1-3 questions of your own about the health/sustainability of our e-commerce business. Try to answer your own questions using the provided data set. Include your questions, hypotheses, and results in your project presentation

Remember, this is real data and there is no “right” answer, just like there is rarely one “right” answer in the real world. We want to see how you approach a data set like this, and help us come up with ideas and hypotheses based on the data.

Presentation Requirements

You may use any tools, programming languages, etc that you would like to answer these questions. You will be presenting your findings to a panel of 4-5 people. You should be prepared to explain your findings and back them up with visualizations, charts, tables, etc.

Please save all of your work in either a git repo, a jupyter notebook, or in some format that will allow it to be reviewed by the hiring committee. Feel free to reach out with questions to august@babylist.com.