Operations Analyst, Case Study

Introduction to the exercise

Firstly: Thank you for your continued interest in a Operations Analyst role at Bench, and the time you've taken so far in the application and interview process. The next step is a "take-home" assignment, which we expect to take 2-4 hours to complete (more time spent isn't better!).
There isn't a single "right" or "complete" answer to this exercise. In the next interview stage, please be prepared to discuss what you did in this case study (and potential alternatives that you considered, but didn't choose).

Background Context

Accounting Associate's within the Operations department require a set of individual performance metrics to track how effectively they are providing bookkeeping services to their clients. Use the data in the tables provided to create a set of metrics to measure the performance of Accounting Associate's for the date given (April 13, 2022). A set of baseline metrics is set out in the section below; you may also create additional metrics that could be used to draw insights into associate performance.

Provided materials

This SQLite DB. This is the dataset for this exercise. It contains the tables documented in the Apendix below:
Ops Analyst Case.db

Please download a SQLite database client to open the .db file, some free and open source examples can be found below:
https://dbeaver.io/
https://tableplus.com/
https://sqlitebrowser.org/

Notes on methodology

- Your reporting should be presented in a refined and organized manner, allowing for non-technical audiences to easily digest the information.
- You should present results quantitatively and qualitatively, suitable for communication to a wider audience.
- For your sql queries, please create views within the .db file that can be evaluated.
- All logic should be contained within SQL views, no Google Sheets formulas are to be utilized.

Key Deliverables

1. Create a summary view within the SQLite database which summarizes performance indicators at the individual associate level. Create as many intermediate views as necessary to support the final summary view.
2. Characterize trends amongst associate's / teams (if any).

Example of the summary view structure:

Associate Name	Accounting Team Lead	Operations Manager	Metric #1	Metric #2	...
Associate #1					
Associate #2					
Associate #3					
...					

Baseline Metrics (Assume all metrics are pulled for the date '2022-04-13')

Associate & Portfolio

- Report the current team lead that the associate reports to.
- Report the current operations manager that the associate reports to.
- Report the associate's current tenure at Bench (number of days).
- Create a field which displays the associate's current job title.
- Create a boolean field which represents if the associate is currently ramping.
- Create a boolean field which displays if the associate is currently on hold from receiving new clients.
- Display the current number of clients in the associate's portfolio.
- Report the current maximum complexity points for the associate using data from the aa_capacity_objects table.

Responsiveness

- Responsiveness calculation: What percentage of incoming client communications are responded to within 24 hours?
- Use the client_responsiveness_30d table as a data source

Client Communications
- Use the data in the communications_summary_14d table to calculate the number of clients that the associate has messaged within the previous 14 days.
- Clients with an merstatus_at_reportdate of "COMPLETE" should be included in the total of clients messaged within the previous 14 days.
- Clients with an inboxstate_at_reportdate of "CATCH_UP" should be excluded from these calculations.
- Calculate the percentage of clients messaged by the associate within the previous 14 days.

Escalation & Churn
- How many escalations were raised for the associate over the previous 90 days?
- Count the number of churns attributed to an associate within the previous 90 days.

Client Health Score
- Client Health Score (Exclude clients with a CATCH_UP inbox state from the following calculations:
  - What is the average client health score per associate?
  - How many clients have a health score of zero?

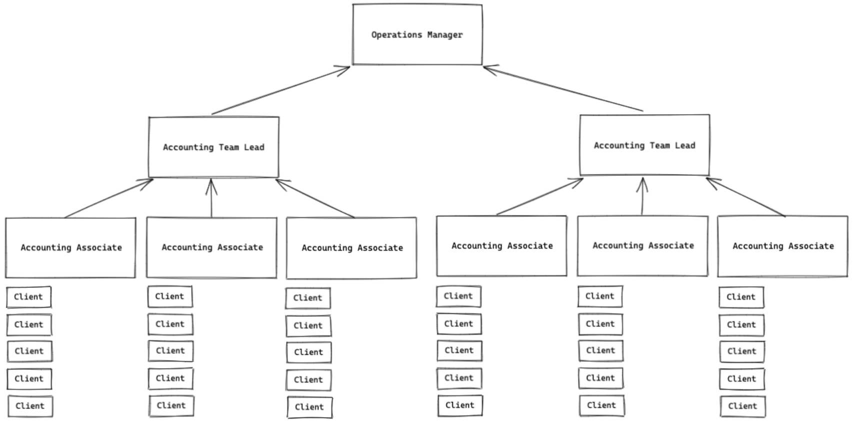
Work in Progress
- Report the number of available vs blocked WIP tasks per associate (See the incomplete_work_tasks table)
- Only clients with an inbox state of KEEP_UP or CHURN should be included
- Report the average number of available WIP tasks per client in the associate's portfolio.

Questions?
Please e-mail robert.peterson@bench.co and he will ensure that you get answers.

Appendix - Terms

Term	Description
Bench ID / Client ID	A unique integer which represents a client's account with Bench. For example, 123455. This is interchangeably referred to as the Bench ID or Client ID.
Client	A paying customer of Bench.
Customer	Our client's are typically small businesses which have their own customers. For the sake of clarity, Bench has clients and our clients have customers.
Bookkeeper	The Accounting Associate that completes a client's books on a monthly basis. Internally we refer to these employees as Accounting Associate's, in client facing documents they are referred to as Bookkeepers.
Accounting Associate (AA)	An Accounting Associate is the client facing role which completes financial statements on a monthy basis for their portfolio of clients.
Accounting Team Lead (ATL)	An Accounting Team Lead manages a group of Accounting Associates. They do not directly have a portfolio of their own clients.
Operations Manager (OM)	An Operations Manager oversees a set of Accounting Team Leads. They do not directly have a portfolio of their own clients.
Team	Different teams service different types of accounting clients. For the purposes of this exercise we will look at the KEEP_UP and PRO teams.
Portfolio	A group of approximately 65 clients is referred to as a "portfolio" and is managed by an individual Accounting Associate.

Appendix - Org Chart



Ramping	When an Accounting Associate first starts in their role they being to build up their portfolio of clients over a number of weeks. This is referred to as the ramping period and is the timespan over which the client count of the portfolio increases to approximately 65 clients.
Complexity Points	Each client is given an associated number of "complexity points" which represents the difficulty of the accounting work required to complete their books. An "average" client should be rated as 100 complexity points.
Inbox State	This field is associated with each client and represents various stages the client can be in. KEEP_UP: A healthy client that requires regular monthly bookkeeping. CATCH_UP: A client who has a backlog of work, which will be completed by a specialized team. ON_HOLD: A client who has temporarily paused their subscription. CHURN: A client who has requested their subscription be cancelled.
Work Tasks	Work Tasks are individual pieces of accounting work which must be completed each month to produce a complete set of financial statements for the client.
Hold Clients	Clients who have temporarily paused their subscription
Delinquent Clients	Clients who are behind on paying for their Bench subscription.
Escalation	A concern or complaint that the client has raised about their Bookkeeper.
Churn	A client who has cancelled their subscription. They may still require work by their Accounting Associate before they leave Bench.
Client Health Score	A score between 0 - 1 which represents Bench's understanding of how "healthy" the client is. Healthier clients are less likely to Churn or raise Escalations about their account.
NPS	Net Promoter Score. This is a score surveyed from clients which represents how likely they would be to recommend Bench to others.

Appendix - Tables

<u>aa_capacity_objects</u>

The data in this table is extracted from a Salesforce reports and tracks the schedule for accounting associates onboarding new clients.

Attribute	Description
id	The primary key for the record.
name	A text identifier starting with "KUC" that can be used to refer to the record.
associate_name	The name of the accounting associate for which the record applies.
team__c	A field to record the bookkeeping team for the associate.
cp_client_change__c	The increase or decrease in the number of complexity points that should be in the Associate's portfolio.
max_complexity_points_clients__c	The maximum number of complexity points within an Associate's portfolio.
type_of_clients__c	Indicates if their is any preference for the type of clients that will be received (I.e new clients or transition clients from a departing Associate)
effective_date__c	The date from which the changes indicated by the capacity object are effective.
createddate	The date upon which the Salesforce Capacity Object Record was created.

active_points

Represents the state an Associate's portfolio. Assume the data is pulled for '2022-04-13'

Attribute	Description
aa_fullname	The fullname of the accounting associate.
hold_points	The number of complexity points associated with clients who are on hold (Have paused their billing)
churn_points	The number of complexity points associated with clients who have cancelled their Bench subscription, but have not yet been offboarded from the Associate's portfolio.
active_points	The number of complexity points associated with clients that have regular ongoing bookkeeping.
active_client_count	The number of clients within the portfolio that have regular ongoing bookkeeping.
delinquent_client_count	The number of clients within the portfolio that are behind on their billing.
on_hold_client_count	The number of clients within the portfolio that have paused their subscription.
churn_client_count	The number of clients within the portfolio that who have cancelled their Bench subscription, but have not yet been offboarded from the Associate's portfolio.
count_reviewed_90_days	The number clients within the portfolio that have been reviewed by the Quality team within the previous 90 days.

churn_reasons

This table records clients that have cancelled their subscription.

Attribute	Description
clientid	The Bench ID for the client that has churned.
churn_date_pstpdt	The date upon which the client cancelled their subscription.
aa_fullname	The name of the associate portfolio that the client has churned from.

client_hold_requests

This table records requests from Associate's to be put temporarily put on hold from receiving additional clients to their portfolio.

Attribute	Description
aa	The fullname of the Associate requesting the hold.
request_type	The reason for the hold.
request_start	The start date from which new clients should not be assigned.
request_end	The end date, after which new clients can be assigned again.

client_responsiveness_30d

This table reports how quickly an Associate responds to incoming messages from their clients over the previous 30 days.

Attribute	Description
aa_fullname	This records the full name of the Associate.
client_id	The Bench ID of the client sending the message.
variance	The absolute number of seconds taken for the Associate to reply to the message.
holiday_seconds	The number of seconds to reply to a message that occured during a statutory holiday.
adjusted_delta_holidays	The number of seconds taken to reply to a message, excluding time elapsed during a statutory holiday.

response_success_24_hour	A boolean field which records if the message was replied to within 24 hours. This should be TRUE if the adjusted_delta_holidays is less than 86400 seconds.

clientescalations

This tables record when a client raises a concern / complaint (Known as an Escalation) about their Bookkeeper (Accounting Associate).

Attribute	Description
associate__c	The full name of the accounting associate that the client is raising the issue about.
bench_id__c	The Bench ID of the client.
createddate	The date when the escalation occured.
escalation_level__c	The severity level of the escalation level. A higher number indicates a more serious escalation.
isdeleted	This field records if the escalation was created in error and has now been deleted.

clienthealth_scoring

A table which reports a health score for each client in a portfolio.

Attribute	Description
clientid	An integer representing the Client ID
inboxstate	The inbox state of the client
aa_fullname	The full name of the associate for this client
client_health_score	The health score for the client. This is a number between 0 - 1.

communications_summary_14d

This table reports how frequently an Associate communciates with their Clients. A row is added daily to the table recording when we last contacted the client.

Attribute	Description
reportdate_pstpdt	The date when the information in the row was pulled.
clientid	The Client ID of the account.
inboxstate_at_reportdate	The inbox state of the client at the report date.
lastcontactdate_at_reportdate_pstpdt	The date when we last messaged the client as of the report date.
merstatus_at_reportdate	The MER status of the client at the report date.
aa_fullname_at_reportdate	The full name of the Associate at the report date.
atl_fullname_at_reportdate	The full name of the Accounting Team Lead at the report date.
carestate_at_reportdate	The care state of the client at the report date.

incomplete_work_tasks

This table represents the number of work tasks that have not currently been completed.

Attribute	Description
count	The number of work tasks in this category.
report_date	The date when the report was generated.
status_type	The category of work task status, this is either "Available" or "Blocked".
inbox_state	The inbox state of the client at the report date.
client_id	The Client ID.
aa_fullname	The fullname of the Associate.

nps

Records Net Promoter Score ratings from clients.

Attribute	Description

nps_date	The date on which the client provided the NPS rating.
aa	The fullname of the Accounting Associate that was given the rating.
delighted_nps	A score between -100 and 100 which represents the Net Promoter Rating.

operations_team_history

A table of Salesforce Records which is the source of truth for reporting relationships within the organization.

Attribute	**Description**
tm_id	The Salesforce Record ID. This is the primary key for the table.
tm_name	The fullname of the employee refered to by the record.
start_date	The start date marking when this reporting relationship first applies.
end_date	The end date marking the last day for the reporting relationship.
ramp_start_date__c	The start date for the Associate's ramp. This is when the client starts receiving their initial set of clients.
ramp_end_date__c	The end date for the Associate's ramp. By this date the associate will have fully received their initial set of clients.
baseline_points__c	The baseline number of complexity points that the client should have in their portfolio.
job_title__c	The Job title of the employee.
team__c	The reporting team for the employee.
supervisor_team	The reporting team of the employee's supervisor.
supervisor_id	The tm_id of the employee's supervisor.
supervisor	The full name of the employee's supervisor.