



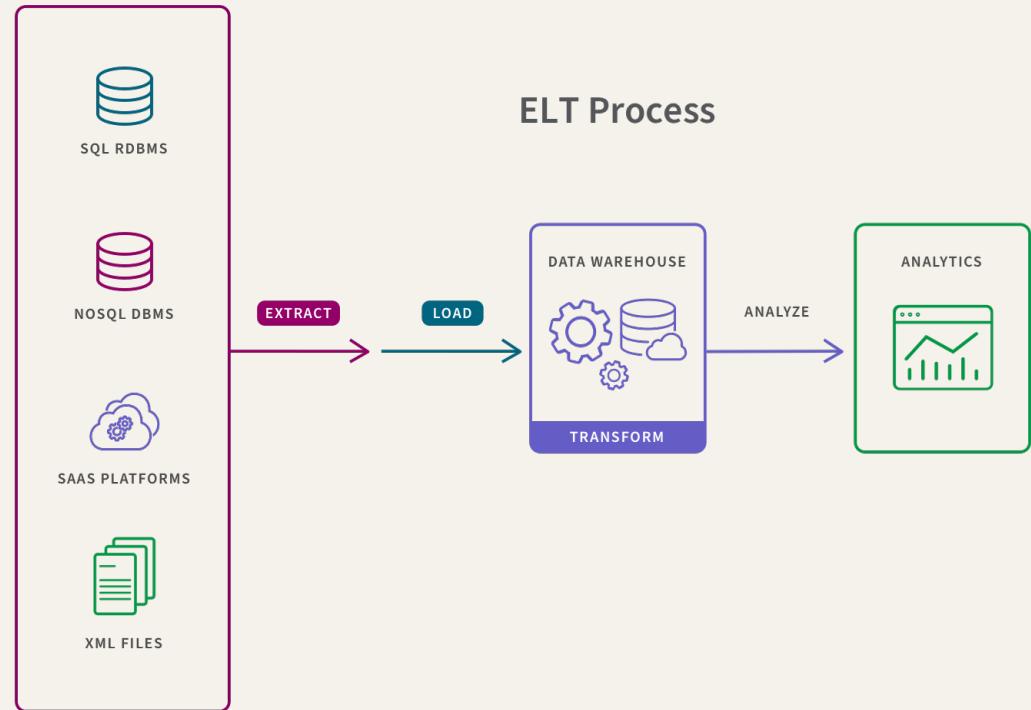
DataPlex

Product Overview

Mission Statement

Create a DaaS platform that

- Get raw data
- Store in a secure and accessible database
- Sell transformed data as insightful findings



Project Overview

Dataplex

Objective:

- Allows customers to store and access data, a centralised database
- Sell data in the form of insightful visualisations, provide valuable insights for the customers
- Create a Data as a Service (DaaS) platform, a frontend

Customers:

- Data Provider
- Data Consumers

Business Model:

- Consumers will pay a subscription to have access to transformed as well as raw data from the data providers
- Data providers will earn royalties as their data is being sold to users



Who are our Customers?

Data Providers

- Hospitals (public/private) and Government (MOH)
 - Make use of data analytics
 - Less worries about the cloud infrastructure

Data Consumers

- Hospitals Administrators (public/private)
 - Get a clearer view on the entire country's available resources
 - Track trends and gain insights on resource management
- Health insurance/Pharmaceutical
 - Track trends and changing probabilities of health risks
 - Design products to serve potential customers best
 - Maximise profits based on past health risk trends
- Policymakers
 - Evaluate existing healthcare-related policies
 - Address public health issues or improve access to healthcare services with the help of hard numbers

Project Overview

Technical Solution

Extract

Getting the raw data

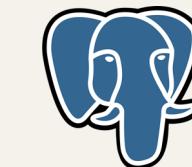
- Data Sources
 - data.gov.sg
 - singstat.sg
- Extract data via API to local Postgres database
- Periodically ping data source using Airbyte running in docker



Load

Storing/Moving the data

- Collate and store data from various sources in one database
- Hosted with Azure Cloud Services to make data secure and always available



Transform

Gathering Insights

- Connect the data from production database
- Transform data through PowerBI
- Create dashboards to gather insights on trends
- Website to display dashboards created



Sprint Backlog Stuff we did do and why

The image shows a digital whiteboard interface with a background of a snowy mountain range. The board is organized into columns: Planning Poker, Estimates totals, and Calendar Power-L. There are six main sections representing completed sprints:

- Sprint 5 (Completed Cards)**:
 - Goal: As a customer, I want a website to see the data so that I can access the data easily from any device.
 - Card: As a customer, I want to be able to download the original datasets, raw data, as it would give me flexibility to transform the data in my own way and to gain deeper insights while performing my own analysis. (Due Jan 25, Points 5, Team: KC, KD, LC, PL, RS)
 - Card: As a customer, I want to be able to interact with dashboards as it allows me to quickly and easily access and analyze the data that is most relevant to me. (Due Jan 25, Points 4/4, Team: KC, KD, LC, PL, RS)
 - Card: As developer I want to be able clear documentation of how the DaaS platform works from beginning to end so that it is possible to easily understand the processes in the pipeline for easy maintenance. (Due Jan 27, Points 2/2, Team: KC, KD, PL, RS)
 - Card: As the client, I want to be able to find and access on the latest research materials in my field so that I can stay up-to-date and provide the best care for my patients. (Due Jan 20, Points 3/3, Team: KC, KD, LC, PL, RS)
 - Card: 5.1 Find extra datasets to better suit stakeholders (Due Jan 19, Points 13, Team: KC, KD, LC, PL, RS)
 - Card: 5.2 Creation of a Wix Website (+ Add a card)
- Sprint 4 (Completed Cards)**:
 - Goal: Sprint Goal
 - Card: As a developer, I want to grant different users different permissions to access the centralized database for them to access it. (Due Jan 2, Points 7/7, Team: KC, KD, LC, PL, RS)
 - Card: As a data consumer, I want to have access to the most up-to-date data to make better decisions. (Due Jan 4, Points 6/6, Team: KC, KD, LC, PL, RS)
 - Card: As a developer, I want to easily share the data insights with stakeholders so they can make data-driven decision making. (Due Jan 7, Points 9/9, Team: KC, KD, LC, PL, RS)
- Sprint 3 (Completed Cards)**:
 - Goal: Sprint Goal
 - Card: As an Administrator, I want to be able to access all my data from a centralised database. (Due Dec 28, 2022, Points 8/8, Team: KC, KD, LC, PL, RS)
 - Card: 3.1 Set up Airbyte connection to upload local datasets into the PostgreSQL database to verify it will work when connected to Azure. (Due Dec 21, 2022, Points 6/6, Team: KC, KD, LC, PL, RS)
 - Card: 3.2 Create production PostgreSQL database (Due Dec 27, 2022, Points 4/4, Team: KC, KD, LC, PL, RS)
 - Card: 4.1 Add IPs. Create and Configure roles for Azure and the Production PostgreSQL so that it is ready for connection. (Due Jan 3, Points 4, Team: KC, KD, LC, PL, RS)
 - Card: 4.2 Set up Airbyte connection from local database to production database using Airbyte (Due Jan 4, Points 4, Team: KC, KD, LC, PL, RS)
 - Card: 4.3 Set up connection between PowerBI and Airbyte for visualisation. (Due Jan 7, Points 4, Team: KC, KD, LC, PL, RS)
 - Card: 4.4 Perform transformations on the datasets (Due Jan 19, Points 9, Team: KC, KD, LC, PL, RS)
- Sprint 2 (Completed Cards)**:
 - Goal: Sprint Goal
 - Card: As a developer I want to be able to have separate databases from the developer team and customers so that the service is not affected by work in progress updates. (Due Dec 13, 2022, Points 7/7, Team: KC, KD, LC, PL, RS)
 - Card: 2.1 Set up PostgreSQL Database and verify that all versions of PostgreSQL works on our environments. (Due Dec 6, 2022, Points 3/3, Team: KC, KD, LC, PL, RS)
 - Card: 2.2 Host Local PostgreSQL Database with Azure for each dev (Due Dec 13, 2022, Points 7/7, Team: KC, KD, LC, PL, RS)
 - Card: 2.3 Validate the datasets to ensure that content in the data will help us come up with visualisations that will give customers insights. (Due Nov 30, 2022, Points 3, Team: KC, KD, LC, PL, RS)
- Sprint 1 (Completed Cards)**:
 - Goal: Sprint Goal
 - Card: As a data analyst, I want to be able to easily find and download datasets on patient demographics and health outcomes so that I can analyze trends and patterns in datasets related to healthcare. (Due Dec 1, 2022, Points 5/5, Team: KC, KD, LC, PL, RS)
 - Card: 1.1 Look for potential healthcare Datasets that would be useful for answering a client's needs (Due Dec 6, 2022, Points 3, Team: KC, KD, LC, PL, RS)
 - Card: 1.2 Validate the datasets to ensure that content in the data will help us come up with visualisations that will give customers insights. (Due Nov 30, 2022, Points 3, Team: KC, KD, LC, PL, RS)

Burndown Chart

Sprint Burn Down Chart						
User Stories	Initial Estimate	Sprint 0	Sprint 1	Sprint 2	Sprint 3	Sprint 4
1.1 Look for potential healthcare Datasets that would be useful for answering a client's needs	3	3				
1.2 Validate the datasets to ensure that content in the data will help us come up with visualisations that will give customers insights	3	3				
2.1 Set up PostgreSQL Database and verify that all versions of postgresSQL works on our environments	4		4			
2.2 Host Local PostgreSQL Database with Azure for each dev	7		7			
3.1 Setup Airbyte connection to upload local datasets into the PostgreSQL database to verify it will work when connected to Azure	9			9		
3.2 Create production PostgreSQL database	4				4	
4.1 Add IPs, Create users and Configure roles for Azure and the Production PostgreSQL so that it is ready for connection and put in the production pipeline	4					4
4.2 Set up Airbyte connection from local database to production database using Airbyte	4				4	
4.3 Set up connection between PowerBI and Airbyte for visualisation.	4				4	
4.4 Perform transformations on the datasets	9					9
4.5 Create Exploratory Questions	7					7
4.6 Create Dashboards in PowerBI	15					15
5.1 Find extra datasets to better suit stakeholders	13					13
5.2 Creation of a Wix Website	8					8
5.3 Provide a function for exporting data	2					2
Remaining Work	96	90	79	70	54	0
Ideal Trend	96	76.8	57.6	38.4	19.2	0

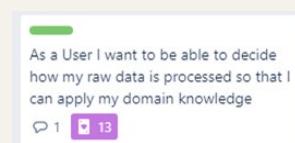


Product Backlog Stuff we didn't do and why



- Sensitive personal data may be leaked

- Data privacy
- Lack PowerBI Pro License
- Lack of web dev experience to build frontend auth system



- Give customers more customization
- Requires connection to airbyte via front end



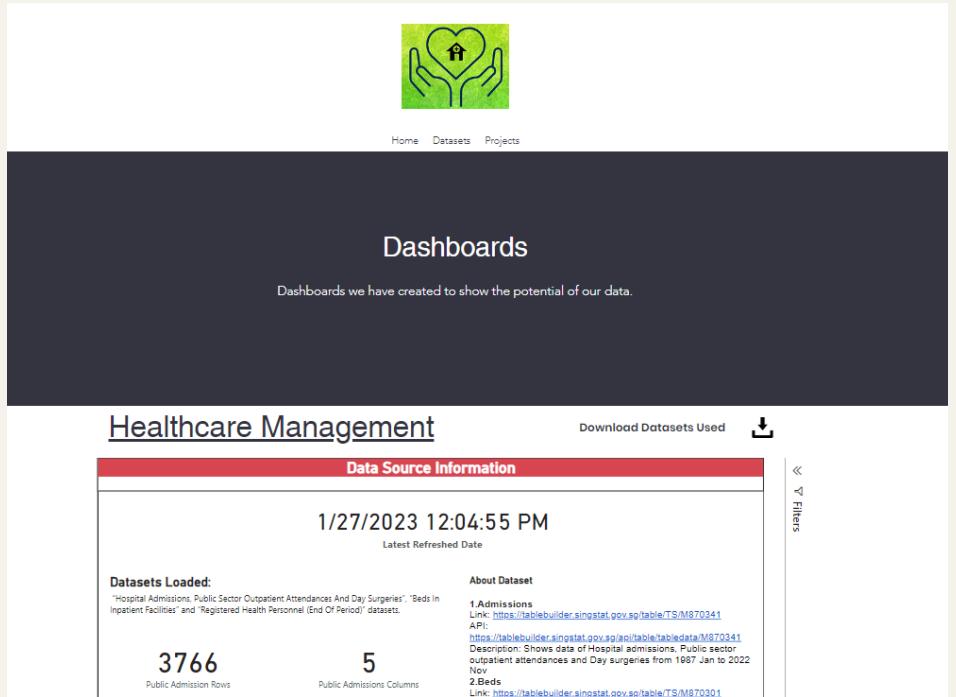
- Easier for customers to look for their desired dataset
- Lack of web dev experience

- Allow the adding and removal of datasets with a button
- Lack of knowledge on how to write batch files

Final Product

Frontend website

Our final product ended up as what we had envisioned, a centralised website that displays our relevant dashboards



The screenshot shows a web application interface for "Healthcare Management". At the top, there's a navigation bar with a green logo featuring hands holding a heart with a house inside, followed by links for "Home", "Datasets", and "Projects". Below this is a dark header section with the title "Dashboards" and a subtitle "Dashboards we have created to show the potential of our data.". The main content area is titled "Healthcare Management" and includes a "Data Source Information" section with a red header. It shows the date "1/27/2023 12:04:55 PM" and the "Latest Refreshed Date". Below this, there's a "Datasets Loaded:" section with two items: "3766 Public Admission Rows" and "5 Public Admissions Columns". To the right, there's an "About Dataset" section with a table containing two rows, each with a link and a brief description. On the far right, there are navigation icons for back, forward, and search.

Individual Presentation

Each presenter will talk about:

1. User Stories
2. Visualisation Dashboards
3. Reflections

User Stories (Darryl)

Sprint 5 (Completed Cards) ...

Sprint Goal

As a customer, I want a website to see the data so that I can access the data easily from any device

Jan 21 5/5 PL

As a customer, I want to be able to download the original datasets, raw data, as it would give me flexibility to transform the data in my own way and to gain deeper insights while performing my own analysis

Jan 25 5/5 KC KD LC PL RS

As a customer, I want to be able to interact with dashboards as it allows me to quickly and easily access and analyze the data that is most relevant to me

Jan 25 4/4 KC KD LC PL RS

As developer I want to be able clear documentation of how the DaaS platform works from beginning to end so that it is possible to easily understand the processes in the pipeline for easy maintenance

Jan 27 2/2 KC KD PL RS

As the client, I want to be able to find and use datasets on the latest research materials in my field so that I can stay up-to-date and provide the best care for my patients.

Jan 29 3/3 KC KD LC PL RS

Sprint 4 (Completed Cards) ...

Sprint Goal

As a developer, I want to grant different users different permissions to the centralized database for them to access it.

Jan 2 7/7 PL

As a data consumer, I want to have access to the most up-to-date data to make better decisions.

Jan 4 6/6 PL

As a developer, I want to easily share the data insights with stakeholders so they can make data-driven decision making.

Jan 7 9/9 KC KD LC PL RS

4.1 Add IPs, Create and Configure roles for Azure and the Production PostgreSQL so that it is ready for connection.

Jan 2 4 PL

4.2 Set up Airbyte connection from local database to production database using Airbyte

Jan 4 4 PL

4.3 Set up connection between PowerBI and Airbyte for visualisation.

Jan 7 4 KC KD LC PL RS

4.4 Perform transformations on the datasets

Jan 19 9 KC KD LC PL RS

Sprint 3 (Completed Cards) ...

Sprint Goal

As a developer, I want to be able to access all my data from a centralized database

Dec 28, 2022 8/8 KC KD LC PL RS

3.1 Set up Airbyte connection to upload local datasets into the PostgreSQL database to verify it will work when connected to Azure

Dec 21, 2022 6/6 KC KD LC PL RS

3.2 Create production PostgreSQL database

Dec 27, 2022 4/4 KC KD LC PL RS

Sprint 2 (Completed Cards) ...

Sprint Goal

As a Administrator, I want to be able to have to separate databases from the developer team and customers so that the service is not affected by work in progress updates

Dec 13, 2022 7/7 KC KD LC PL RS

2.1 Set up PostgreSQL Database and verify that all versions of PostgreSQL works on our environments

Dec 8, 2022 3/3 KC KD LC PL RS

2.2 Host Local PostgreSQL Database with Azure for each dev

Dec 13, 2022 3/3 KC KD LC PL RS

Sprint 1 (Completed Cards) ...

Sprint Goal

As a data analyst, I want to be able to easily find and download datasets on patient demographics and health outcomes so that I can analyze trends and patterns in datasets related to healthcare

Dec 1, 2022 5/5 KC KD LC PL RS

1.1 Look for potential healthcare Datasets that would be useful for answering a client's needs

Nov 28, 2022 3 KC KD LC PL RS

1.2 Validate the datasets to ensure that content in the data will help us come up with visualisations that will give customers insights

Nov 30, 2022 3 KC KD LC PL RS

Definition of Done ...

All bugs/issues fixed

Datasets correctly loaded into the local database

Production database is able to connect to our local database

Power BI is able to connect to our Production database

All developers and users have access to the centralized database with respective roles

Project document to be fully updated with implemented feature

+ Add a card

Sprint 1:

- Look for 3 useful healthcare datasets

Sprint 2:

- Host local postgres database with Azure

Sprint 3:

- Load datasets into local postgres database
- Airbyte troubleshooting

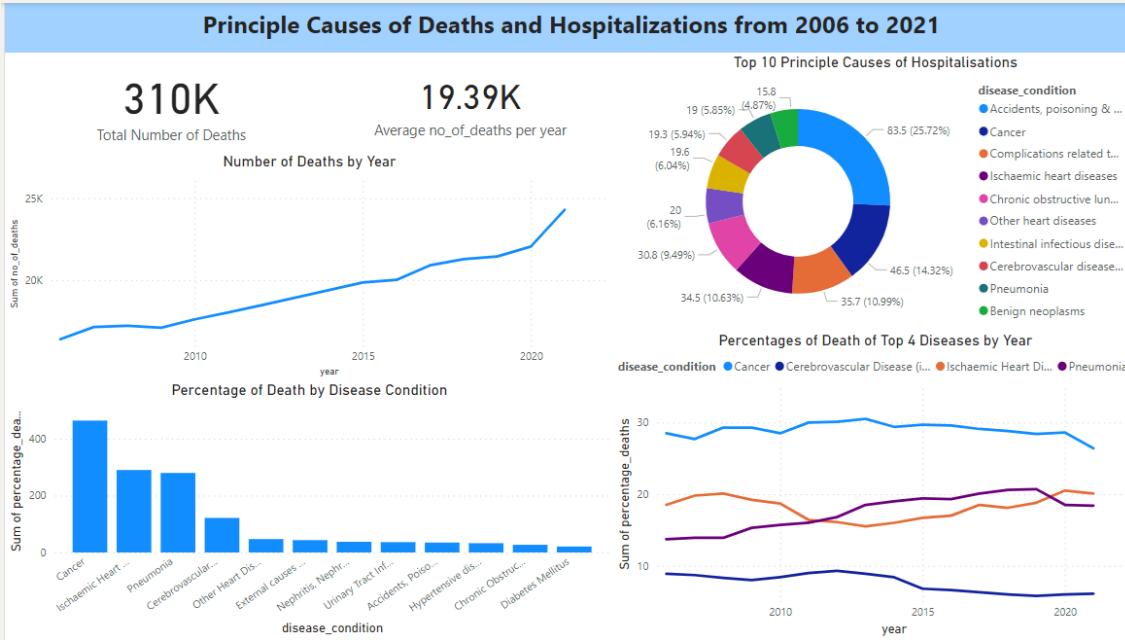
Sprint 4:

- Connected local to production database
- Loaded datasets on PowerBi
- Carried out transformations using power query editor

Sprint 5:

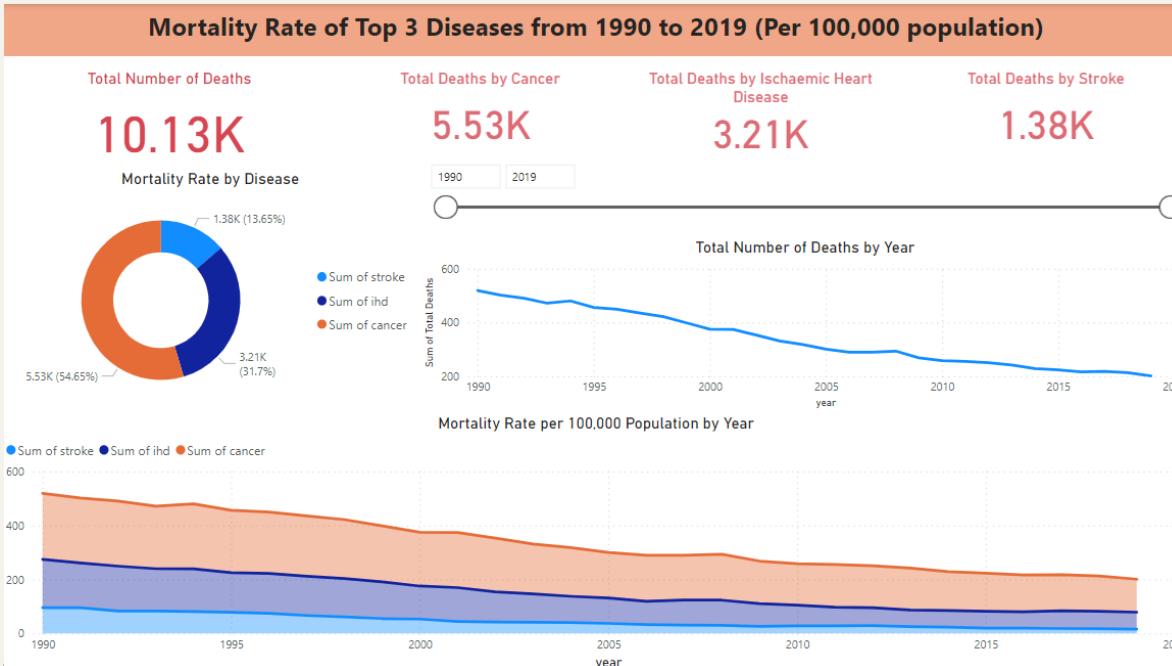
- Did dashboards on PowerBI
- Published dashboards to frontend website

Dashboard 1: Principle causes of deaths and hospitalizations [Darry]



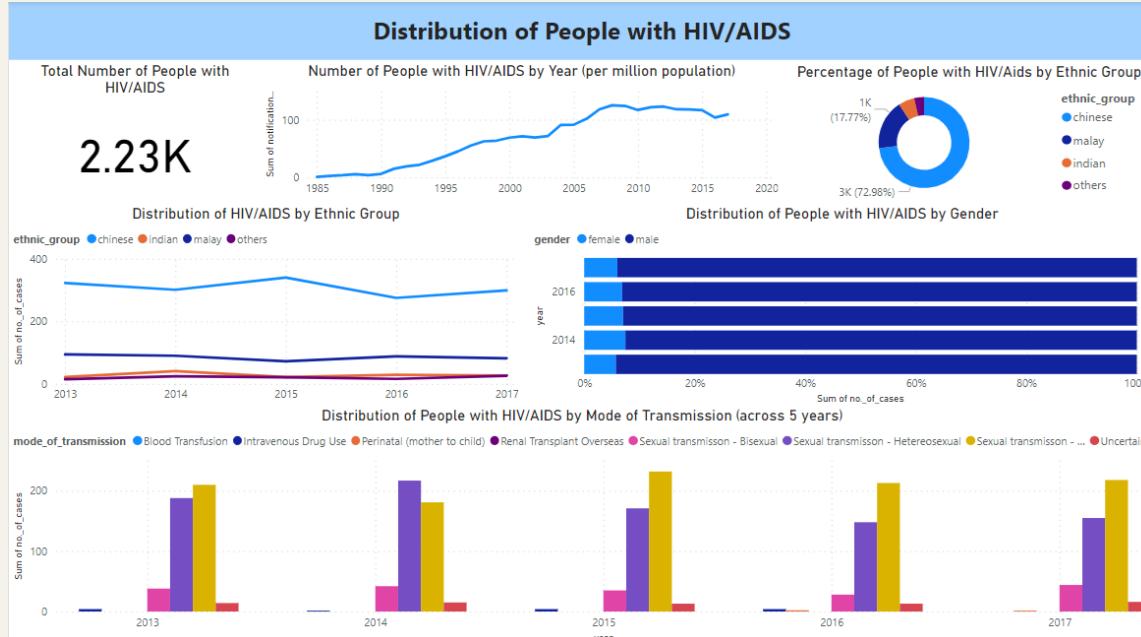
- provides an overview of the principal causes of deaths and hospitalizations from 2006 to 2021
- to better understand and address public health issues
- spot trends and patterns in common disease and illness
- develop and implement effective prevention and treatment strategies

Dashboard 2: Mortality rate of top 3 common diseases [Darryl]



- provides an overview of the mortality rate by top 3 common diseases from 1990 to 2019 per 100,000 population
- Identify the trends in the number of deaths caused by the top 3 common diseases
- perform further analysis and find out more insights on what are the main factors which lead to the decrease in the number of deaths

Dashboard 3: Mortality rate of top 3 common diseases [Darryl]



- provides an overview of the distribution of people with HIV/AIDS in Singapore
- allocate resources and target interventions to areas and populations with the highest burden of the disease
- identify and address underlying social determinants of health that may be contributing to the spread of the virus
- lead to a more effective and efficient use of resources and better health outcomes for the affected communities

Reflection (Darryl)

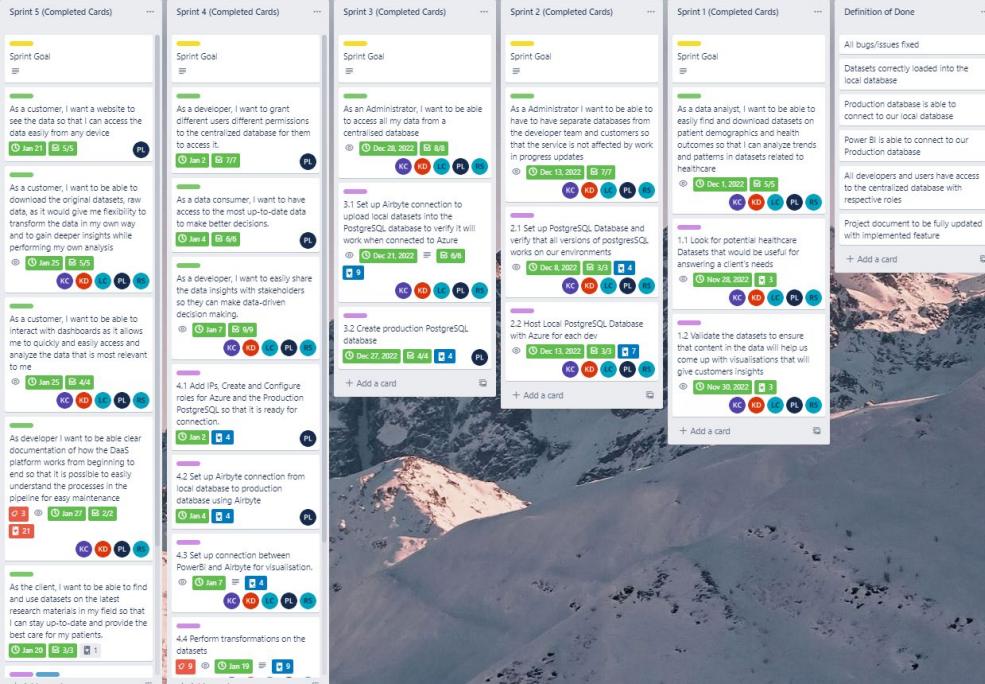
Benefits:

- Flexible and versatile approach to project management
 - Allow for changes and adjustments to be made throughout the project
 - For eg. adjust the user stories as requirements and goals change throughout sprints
- Improves Collaboration and Teamwork
 - achieved through regular meetings, such as daily stand-ups and sprint retrospectives, that encourages transparency and collaboration between team members
 - the stand-up meetings also ensure that everyone is on the same page and that any issues identified are addressed quickly

Challenges:

- Time Consuming
 - Sprint Planning, Daily Scrum, Sprint Review, and Sprint Retrospective is very time consuming as we have to meet regularly
 - The need for detailed documentation and record-keeping also adds to the time consumption
 - Ensure that everyone is free/available to conduct the daily scrum meeting

User Stories (Kai yi)



Sprint 1:

- Figure out Scrum
- Look for datasets

Sprint 2:

- Host local postgres database with Azure

Sprint 3:

- Attempt to load datasets into local postgres database
- Fail at fixing Airbyte

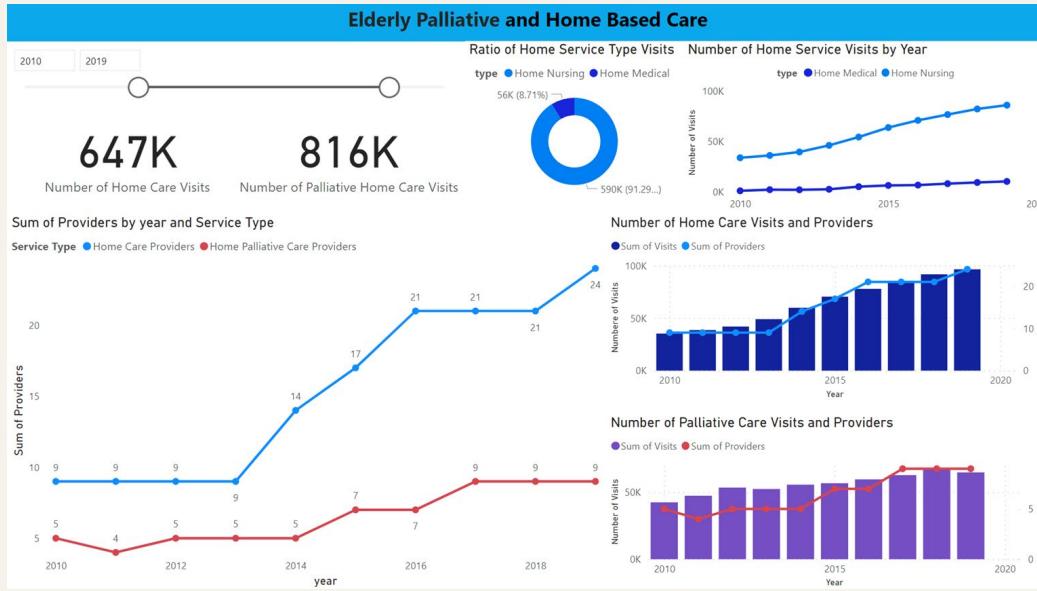
Sprint 4:

- Continue to fail at fixing Airbyte
- Load datasets from production database to PowerBi

Sprint 5:

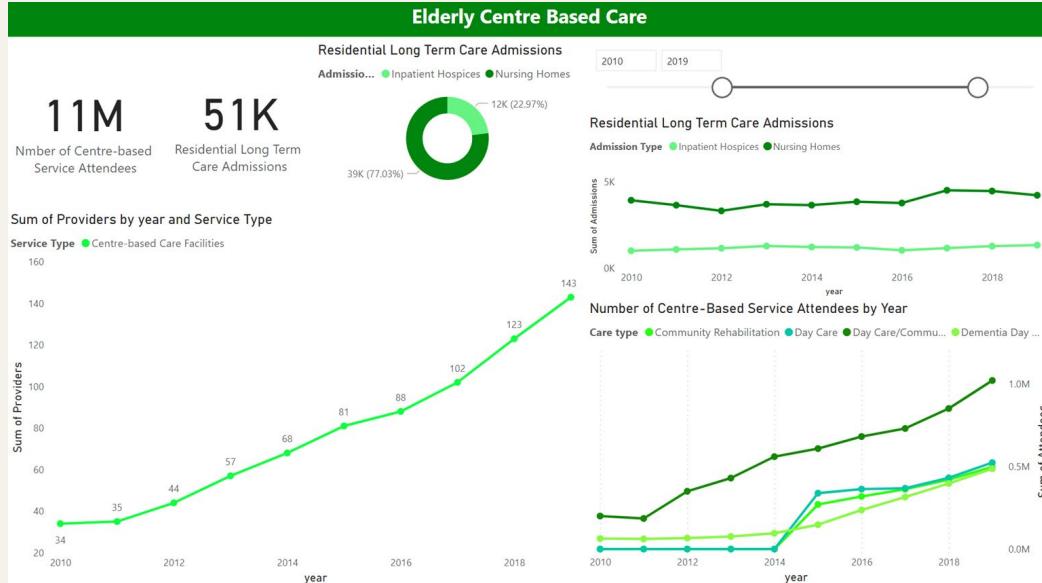
- Dashboards and data transformation
- Embedded dataset and dashboard into website

Dashboard 1: Elderly Palliative and Home Based Care [Kai Yi]



- This dashboard shows data on Elderly Home services
- Trends in:
 - General Home Care Providers
 - Capacity
 - Usage
 - Type
 - Home Palliative Care
 - Capacity
 - Usage
- This lets healthcare providers like hospitals and policy makers understand the demand and supply trend and allocate resources accordingly

Dashboard 2: Elderly Centre Based Care [Kai Yi]



- This dashboard shows data on Elderly Centre services
- Trends in:
 - Residential Long Term Care Providers
 - Capacity
 - Usage
 - Type
 - Centre-Based Service Usage
 - Capacity
 - Usage
 - Type
- This lets healthcare providers like hospitals and policy makers understand the demand and supply trend and allocate resources accordingly

Dashboard 3: Age Demographic (Kai Yi)



- This dashboard shows data on the changing age demographics
- Trends in:
 - Number of seniors
 - Ratio of age groups
- This lets healthcare providers like hospitals and policy makers understand
 - The ratio between working adults and elderly
 - The increase/decrease in certain age demographics that will happen

Reflection (Kai Yi)

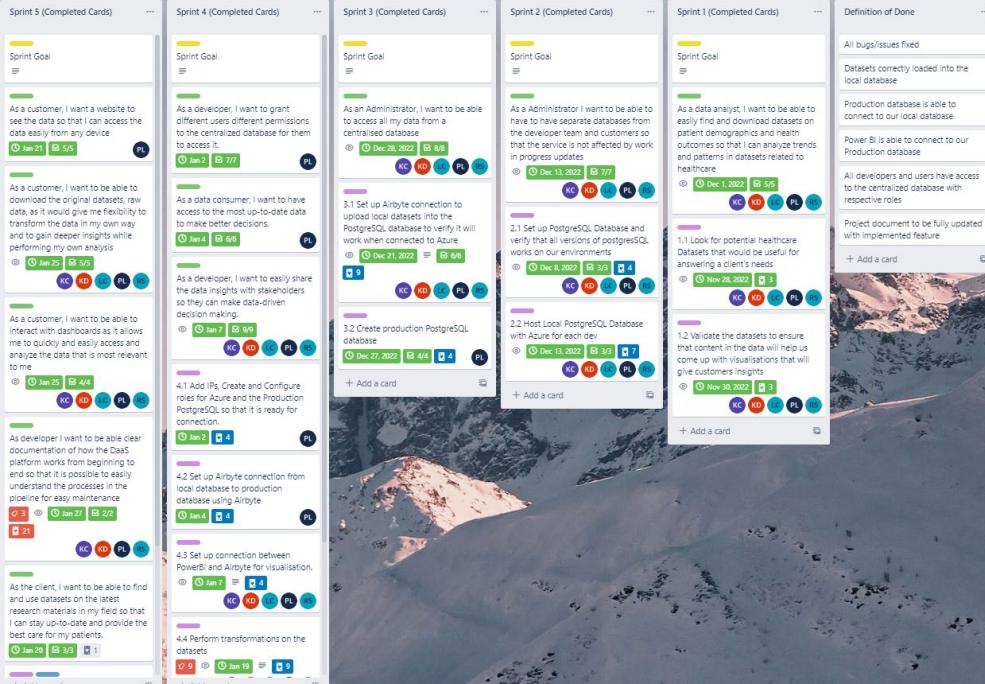
Benefits:

- Adjust and Adapt to changes
 - Allows for a great degree of freedom for all the parties
 - If a the product owner is unhappy with the direction of work, changes can be made early
 - If a certain technology is too complex and time consuming, scope can be changed accordingly to meet time frame

Challenges:

- Time Consuming
 - Sprint Planning, Daily Scrum, Sprint Review, and Sprint Retrospective
 - May often be unnecessary for small teams and small projects where everyone can keep track of what is happening
- Lack of predictability
 - Vague/ Board objectives lead to confusion in steps to end goal
 - Confusion
 - May result in a rapidly increasing scope

User Stories (Don)



Sprint 1:

- Look for 3 useful datasets

Sprint 2:

- Host local postgres database with Azure

Sprint 3:

- Load datasets into local postgres database

Sprint 4:

- Connect local postgres database to production database
- Load datasets from production database to PowerBi
- Fix Airbyte issue

Sprint 5:

- Data Transformation
- Created visualisations & dashboards
- Embedded dataset and dashboard into website

Dashboard 1: Dataset Information [Don]

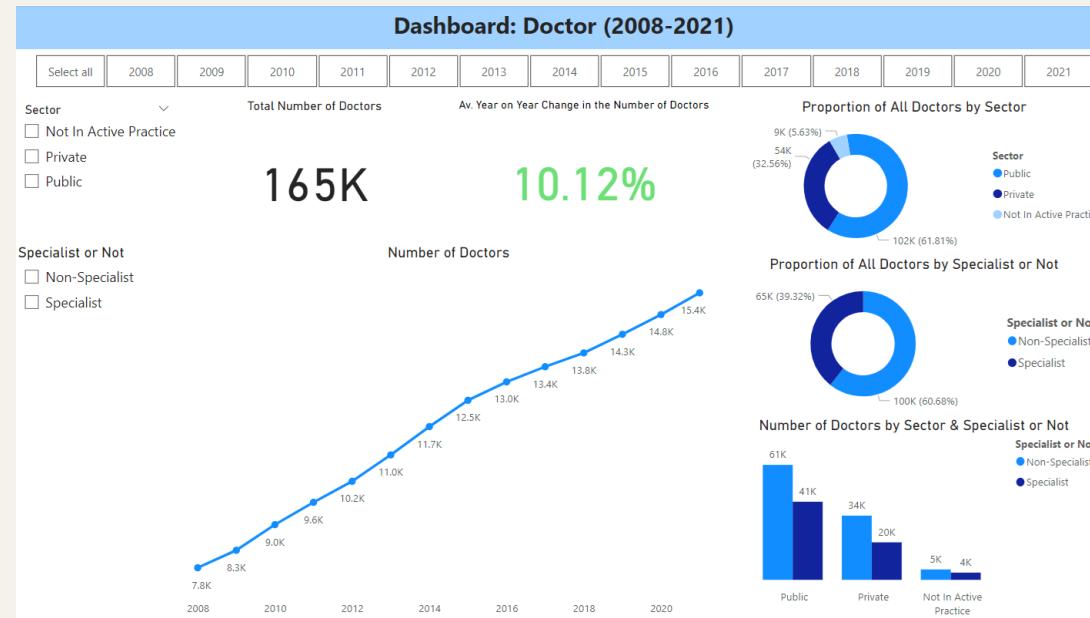
Dashboard: Dataset Information

Last Refreshed Date		Dataset Detailed Information:	
27/1/2023 2:06:38 PM		Dataset 1: Doctors Link: https://data.gov.sg/dataset/number-of-doctors API: https://data.gov.sg/api/action/dataset_search?resource_id=1ef74cbe-d975-4665-b874-56bc4b1c77ea&limit=100 Description: This dataset contains information about the number of doctors over time since 2006. Additional information such as sector and specialisation or not is also included, but only for the years after 2007.	
Total Number of Rows for All Datasets	344	Total Number of Columns for All Datasets	20
Number of Rows by Dataset	42	Number of Columns by Dataset	4
Advanced Practice Nurses Dataset	84	Advanced Practice Nurses Dataset	4
Doctors Dataset	66	Doctors Dataset	3
Graduates Dataset	70	Graduates Dataset	4
Health Professionals Dataset	82	Healthcare Professional Dataset	5
Nurses and Midwives Dataset		Nurses and Midwives Dataset	5

Purpose:

- Provide user with information about dataset
- Do not need to view dashboards to figure out whether the data will meet their needs
- Improve customer experience

Dashboard 2: Doctor (2008-2021) [Don]

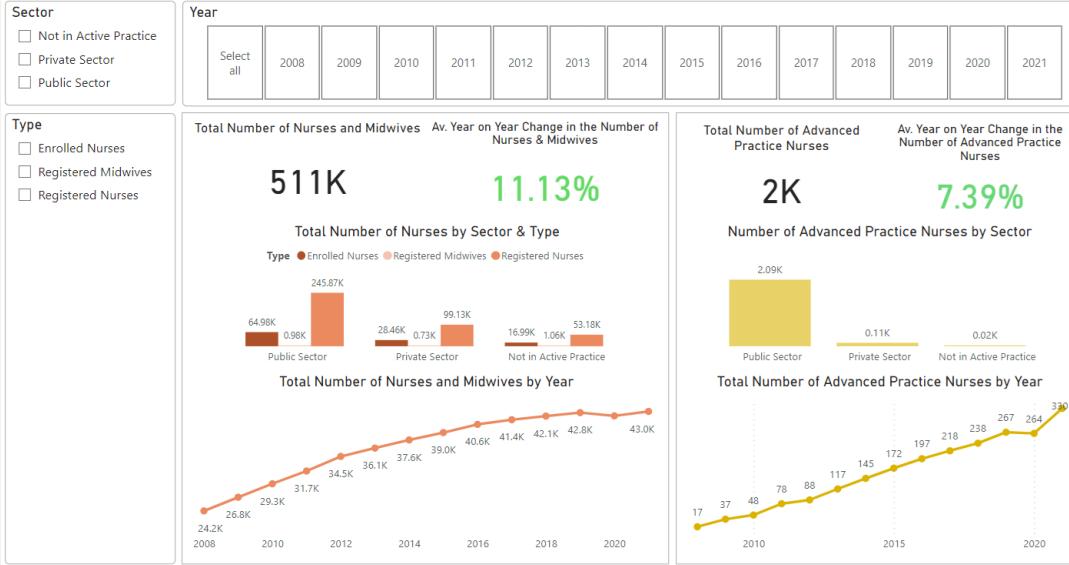


Purpose:

- Provide clear and concise up-to-date overview on the doctor workforce
- Enable them to make data-driven decisions about staffing and resource allocation
- Singapore population has access to quality and affordable healthcare

Dashboard 3: Nurses, Midwives and Advanced Practice Nurses (D)

Dashboard: Nurses, Midwives and Advanced Practice Nurses (2008-2021)



Purpose:

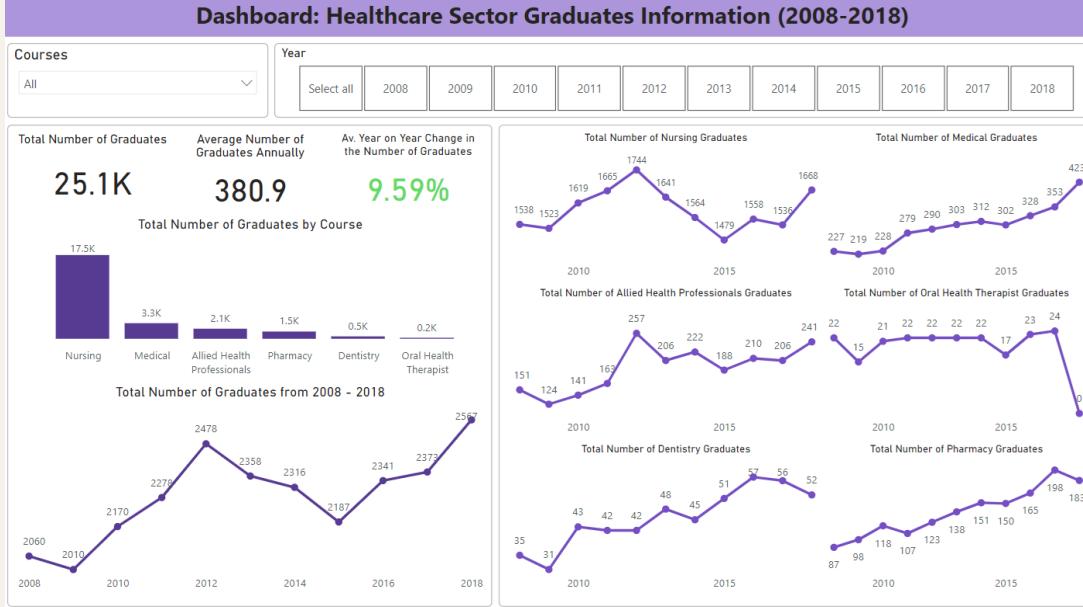
- Gives user a clear and concise view on nurses
- Make informed decisions about workforce management and planning
- Identify areas of shortage or surplus
- Forecast future workforce needs by planning for future workforce requirements

Key Insights:

- Drop in the number of nurses and midwives and advanced practice nurses from 2019 to 2020
 - Happened for the first time in all the years

Dashboard 4: Healthcare Sector Graduates Information (2008-2018) (Don)

Dashboard: Healthcare Sector Graduates Information (2008-2018)



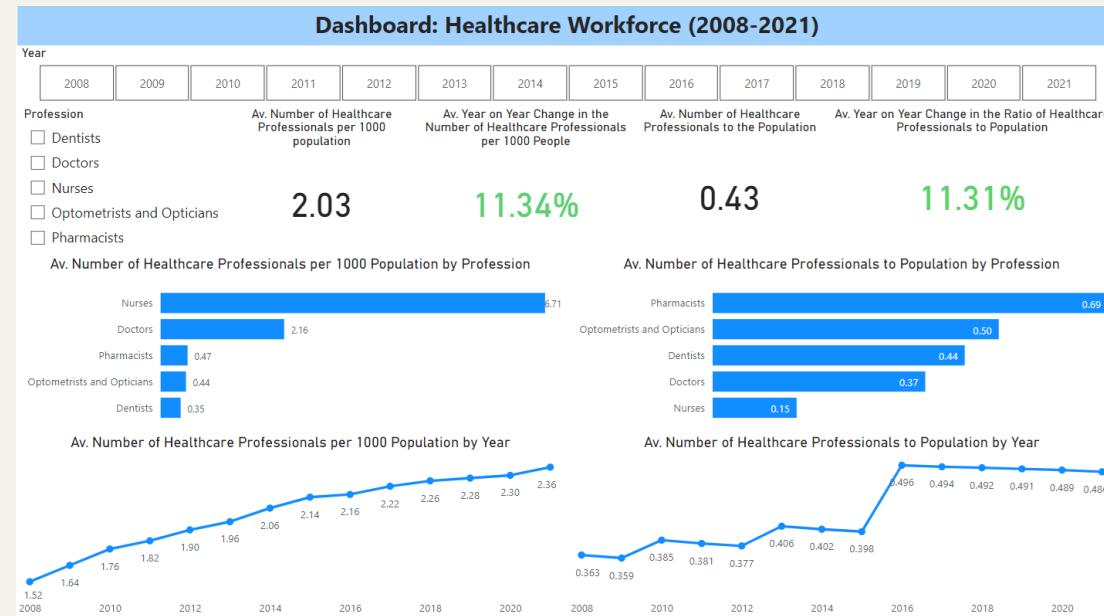
Purpose:

- Understand the ready pool of graduates in healthcare specialisation in Singapore
- Make better decisions regarding the supply of graduates
 - Early plans on future recruitment in the event of an anticipated shortage
 - Informed decisions about curriculum development, as well as, resource allocation and budgeting.

Key Insights:

- Total number of Oral Health Therapist Graduates decreased from 24 to 0 from 2017 - 2018
 - Look into what caused it
 - Make changes to prevent this from happening again

Dashboard 5: Healthcare Workforce (2008-2021) (Don)



Purpose:

- Understand the distribution of healthcare professionals across a population
- Understand overall availability of healthcare professionals in a population
- Make informed decisions about healthcare workforce planning and policy
- Improve quality, and accessibility of healthcare

Key Insights:

- Average number of doctors and nurses to the population is low.
 - Inadequate healthcare workforce distribution
 - Unequal access to healthcare
 - May lead to longer waiting times and lower quality of care
 - More doctors and nurses should be hired
 - Should be increased as the demand for primary healthcare is higher than the demand for secondary healthcare (specialist)

Reflection (Don)

Benefits:

- Flexibility
 - Allow for changes and adjustments to be made throughout the project
 - For eg. If difficulties faced, can put under backlog and find a solution while focusing on other tasks
 - Ensure the team is not stuck on a point for a long period of time
- Collaboration and Communication
 - Promotes regular meetings and status updates
 - Ensure members are on the same page with issues addressed promptly

Challenges:

- Time Consuming
 - Sprint Planning, Daily Scrum, Sprint Review, and Sprint Retrospective is very time consuming as we have to meet regularly
 - Had to plan my time wisely to ensure things get done even with Scrum meetings
- Culture Change
 - Used to the traditional waterfall methodology (sequential project management method)
 - Had to change working style to fit Scrum methodology
 - From usual complete a task in a day or two to splitting a task into bits and doing a little everyday
 - Change style of planning
 - From a general list of things to do, to specific tasks and documentation

User Stories (Ryan)

Sprint 5 (Completed Cards) ...

Sprint Goal

As a customer, I want a website to see the data so that I can access the data easily from any device

① Jan 21 ② 5/5 PL

As a customer, I want to be able to download the original datasets, raw data, as it would give me flexibility to transform the data in my own way and to gain deeper insights while performing my own analysis

① Jan 25 ② 5/5 KC KD LC PL RS

As a customer, I want to be able to interact with dashboards as it allows me to quickly and easily access and analyze the data that is most relevant to me

① Jan 25 ② 4/4 KC KD LC PL RS

As developer I want to be able clear documentation of how the DaaS platform works from beginning to end so that it is possible to easily understand the processes in the pipeline for easy maintenance

③ 21 KC KD PL RS

As the client, I want to be able to find and use datasets on the latest research materials in my field so that I can stay up-to-date and provide the best care for my patients.

① Jan 20 ② 3/2 1 KC KD PL RS

Sprint 4 (Completed Cards) ...

Sprint Goal

As a developer, I want to grant different users different permissions to the centralized database for them to access it.

① Jan 2 ② 7/7 PL

As a data consumer, I want to have access to the most up-to-date data to make better decisions.

① Jan 4 ② 6/6 PL

As a developer, I want to easily share the data insights with stakeholders so they can make data-driven decision making.

① Jan 7 ② 9/9 KC KD LC PL RS

4.1 Add IPs, Create and Configure rules for Azure and the Production PostgreSQL so that it is ready for connection.

① Jan 2 ② 4 PL

4.2 Set up Airbyte connection from local database to production database using Airbyte

① Jan 4 ② 4 PL

4.3 Set up connection between PowerBI and Airbyte for visualisation.

① Jan 7 ② 4 KC KD LC PL RS

4.4 Perform transformations on the datasets

② 9 ① Jan 19 ② 9 KC KD LC PL RS

Sprint 3 (Completed Cards) ...

Sprint Goal

As an Administrator, I want to be able to access all my data from a centralised database

① Dec 28, 2022 ② 8/8 KC KD LC PL RS

3.1 Set up Airbyte connection to upload local datasets into the PostgreSQL database to verify it will work when connected to Azure

① Dec 21, 2022 ② 6/6 KC KD LC PL RS

3.2 Create production PostgreSQL database

① Dec 27, 2022 ② 4/4 KC KD LC PL RS

+ Add a card

Sprint 2 (Completed Cards) ...

Sprint Goal

As a Adminstrator, I want to be able to have separate databases from the developer team and customers so that the service is not affected by work in progress updates

① Dec 13, 2022 ② 7/7 KC KD LC PL RS

2.1 Set up PostgreSQL Database and verify that all versions of PostgreSQL works on our environments

① Dec 8, 2022 ② 3/3 KC KD LC PL RS

2.2 Host Local PostgreSQL Database with Azure for each dev

① Dec 13, 2022 ② 3/3 KC KD LC PL RS

+ Add a card

Sprint 1 (Completed Cards) ...

Sprint Goal

As a data analyst, I want to be able to easily find and download datasets on patient demographics and health outcomes so that I can analyse trends and patterns in datasets related to healthcare

① Dec 1, 2022 ② 5/5 KC KD LC PL RS

1.1 Look for potential healthcare Datasets that would be useful for answering a client's needs

① Nov 28, 2022 ② 3 KC KD LC PL RS

1.2 Validate the datasets to ensure that content in the data will help us come up with visualisations that will give customers insights

① Nov 30, 2022 ② 3 KC KD LC PL RS

+ Add a card

Definition of Done

All bugs/issues fixed

Datasets correctly loaded into the local database

Production database is able to connect to our local database

Power BI is able to connect to our Production database

All developers and users have access to the centralized database with respective roles

Project document to be fully updated with implemented feature

+ Add a card

Sprint 1:

- Look for 3 useful datasets

Sprint 2:

- Host local postgres database with Azure

Sprint 3:

- Load datasets into local postgres database
- Created production database

Sprint 4:

- Set permissions
- Connected local to production database
- Power BI transformations and dashboards

Sprint 5:

- Created website with dashboards inside
- Created search feature

Dashboard 1: Data Source Information [Ryan Liam]

Purpose:

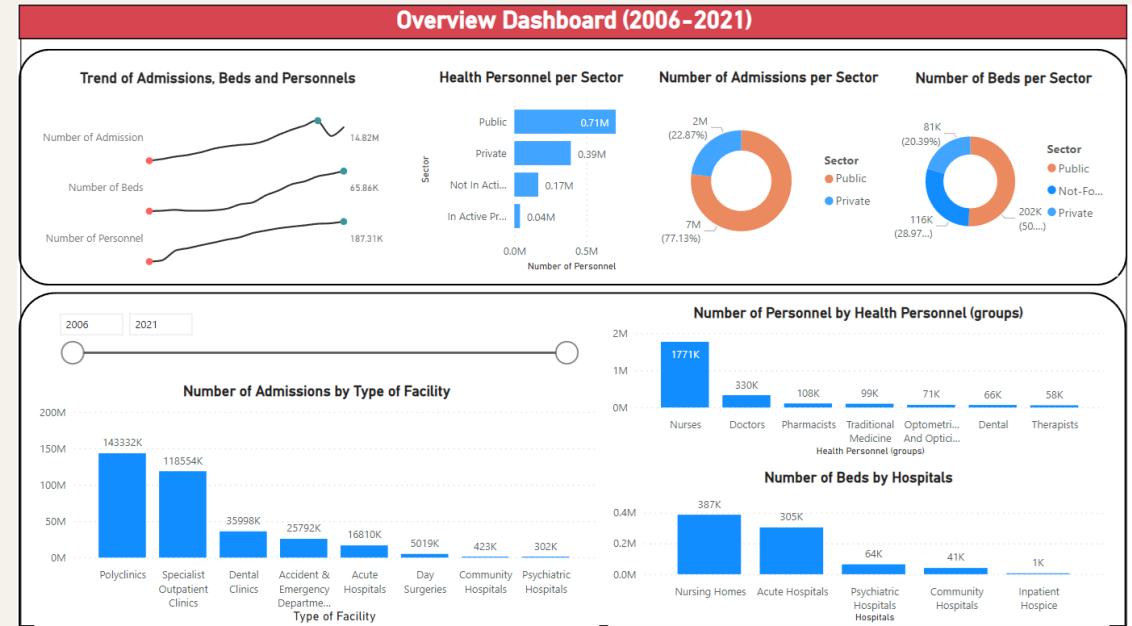
- Provide information on the datasets loaded
- Allow users to understand what the dashboards will cover
- Establish the credibility of the dashboards and its data

Data Source Information			
1/27/2023 12:04:55 PM			Latest Refreshed Date
Datasets Loaded: "Hospital Admissions, Public Sector Outpatient Attendances And Day Surgeries", "Beds In Inpatient Facilities" and "Registered Health Personnel (End Of Period)" datasets.			About Dataset
3766	5	Public Admission Rows	1. Admissions Link: https://tablebuilder.singstat.gov.sg/table/TS/M870341 API: https://tablebuilder.singstat.gov.sg/api/table/tabledata/M870341 Description: Shows data of Hospital admissions, Public sector outpatient attendances and Day surgeries from 1987 Jan to 2022 Nov
264	4	Public Beds Rows	2. Beds Link: https://tablebuilder.singstat.gov.sg/table/TS/M870301 API: https://tablebuilder.singstat.gov.sg/api/table/tabledata/M870301 Description: Shows data of beds in inpatient facilities from 2006 to 2021
1294	4	Public RegisteredHealthPersonnel Rows	3. Number of healthcare personnel Link: https://tablebuilder.singstat.gov.sg/table/TS/M870011 API: https://tablebuilder.singstat.gov.sg/api/table/tabledata/M870011 Description: Shows data of registered health personnel from 1960 to 2021
		Public RegisteredHealthPersonnel Columns	

Dashboard 2: Overview Dashboard [Ryan Liam]

Purpose:

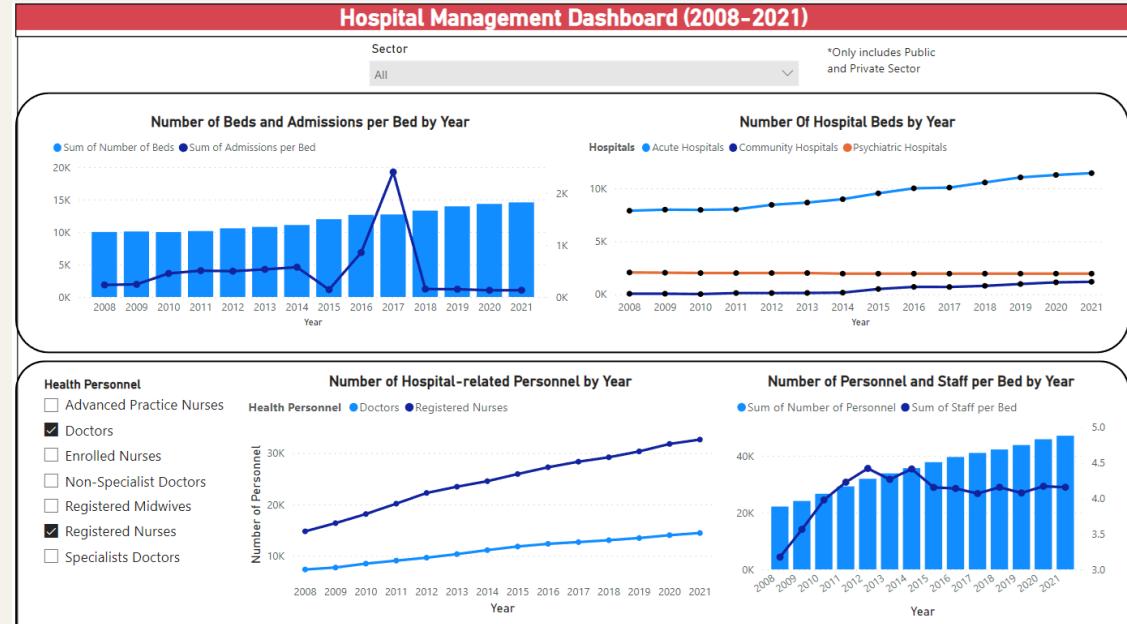
- Provide a quick summary of the datasets loaded
- Understand the number of admissions, beds and personnel
 - Trend
 - Distribution among sectors
 - Distribution among Type of facility or health personnel
- Allow users to detect shortages and make data-driven resource allocation decisions



Dashboard 3: Hospital Management Dashboard [Ryan Liam]

Purpose:

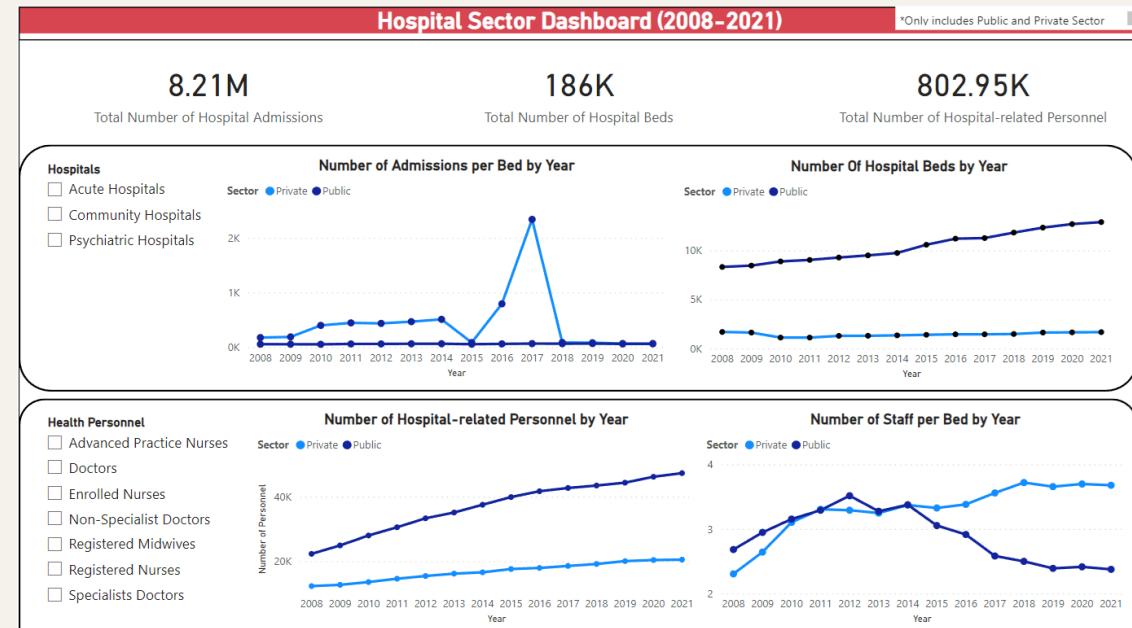
- Allow users to explore hospital-related information and understand their performance and capacity
- Detect shortages in hospitals and make data-driven resource allocation decisions
- Prevent hospitals from being overwhelmed



Dashboard 4: Hospital Sector Dashboard [Ryan Liam]

Purpose:

- Allow users to compare the hospital-related information of the Public and Private sectors
- Understand each sector's performance and capacity
- Help detect shortages in either sectors
- Prevent them from being overwhelmed



Reflection (Ryan Liam)

Benefits:

- Flexibility and adaptability
 - Ability to add/remove/modify tasks in response to changes in project requirements
- Collaboration and Teamwork
 - Scrum events to keep everyone in track on the goals for the sprint and have an understanding of what needs to be accomplished

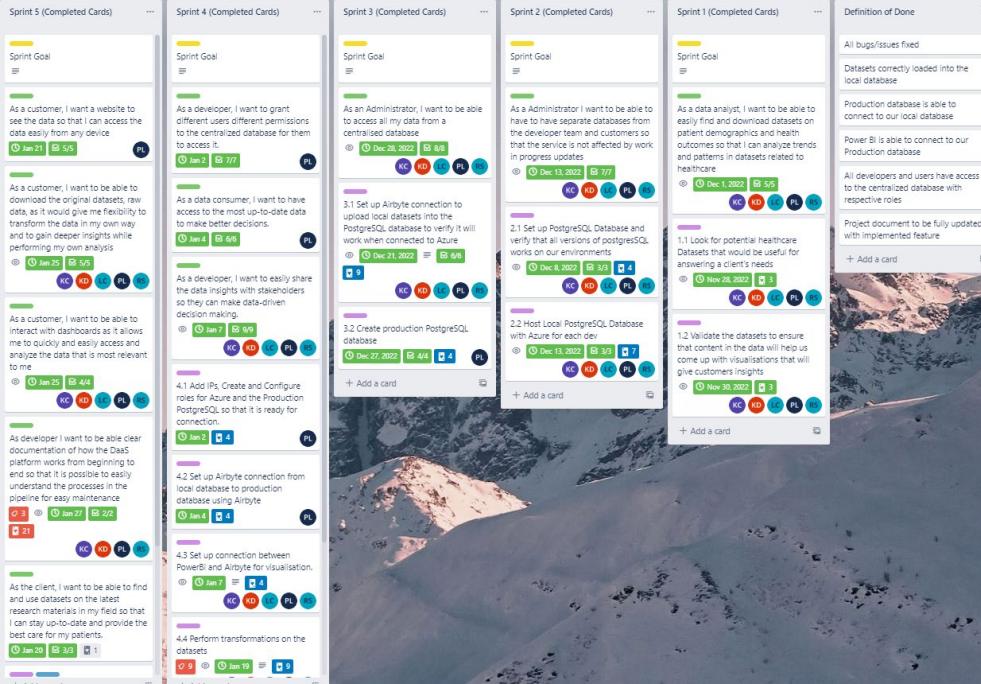
Challenges:

- Difficulty in planning
 - No idea what the end result should look like from day one
 - Difficult to predict timelines and effort required to complete the project
- Requires High degree of Discipline and Commitment
 - Time consuming
 - Have other commitments: Family reunions, jobs or projects

Changes Made:

- Have better time management
- Keep daily stand up short

User Stories (Kai Chuin)



Sprint 1:

- Look for 3 useful datasets

Sprint 2:

- Host local postgres database with Azure

Sprint 3:

- Load datasets into local postgres database

Sprint 4:

- Connect local postgres database to production database
- Load datasets from production database to PowerBi

Sprint 5:

- Data Transformation
- Created visualisations & dashboards
- Embedded dataset and dashboard into website

Overview Dashboard [Kai Chuin]

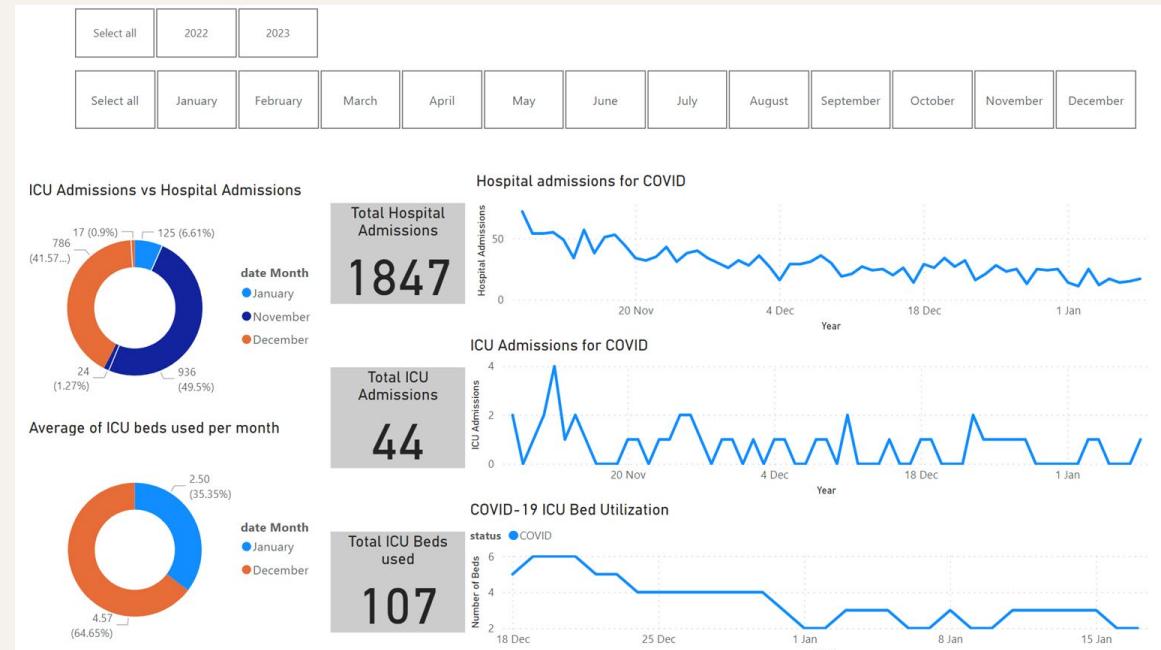
Purpose:

- Display the trendlines of COVID statistics
- Make it scalable and future-proof with date slicers

Key Insights:

Between Nov 2022 - Jan 2023:

- COVID hospital admissions has seen a decreasing trend
- ICU admissions has seen fluctuations but remained low in count
- ICU beds has seen consistently low utilization for COVID use cases



Reflection (Kai Chuin)

Benefits:

- Gives better product quality
- Faster Return on Investment
- Possess more control
- Reduced Risks
- Improved Customer Satisfaction

Challenges:

- Team members can be resistant to change
- Insufficient and Inefficient scrum meetings
- Urgent tasks faced between sprints
- Dependent on project nature

Demo

The End

PostgreSQL Database Access

Username: readaccess@np-asg2-dataops

Password: password

Website and Trello Board link

Website link:

<https://ryanliampy.wixsite.com/dataplex>

Trello board: <https://trello.com/b/MwzKX7tN/scrum-template>