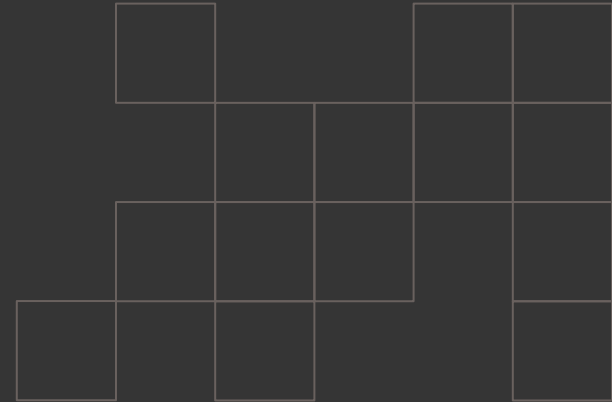


Reporting pipelines modernization

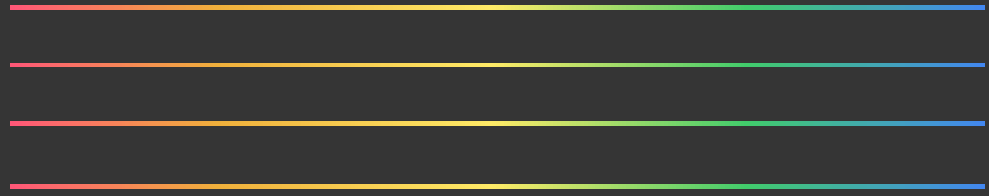
This has been created solely for the CSC 375 course project.
All content is intended for educational purposes only.



Manage Data

375

MD375



data platform
375



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Client and Project Review
Committee



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Client Representative
Quality Assurance



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Project Manager and System
Analysis



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Client and Business Analyst



Wenchu Kan

System analysis and
Documentation & Training
Coordinator



Xiangyu Yang

System analysis and Project
Documentation Specialist

Funding Directed

Health Authority

- Admins lack real-time visibility
- Current reporting relies on email + Excel
- Leads to missing data, formatting errors, and duplicate submissions
- Manual warehouse upload causes delays and higher operational risks

Solution Overview

- SSO login
- Submission tracking dashboard
- One-click upload to the Data Warehouse
- Structured web forms with automatic validation

Before

| Email |
↓
| Excel |
↓
| Manual Review |
↓
| Manual Upload |
↓
| Data Warehouse |

After

| Web Form |
↓
| Auto Validation |
↓
| Dashboard |
↓
| One-click Upload |
↓
| Data Warehouse |

Benefits & Market Value

Value to the Market

- Modernizes reporting processes
- Reduces operational risk
- Scalable for future needs
- Enables better decision-making

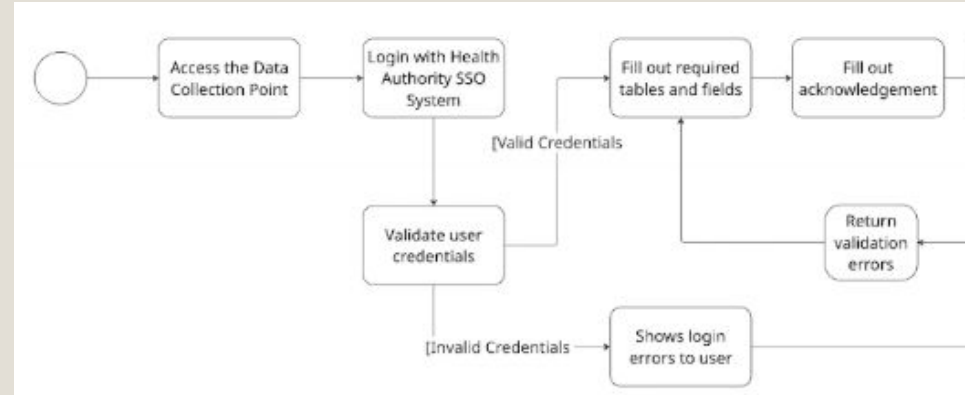
Benefits to the Health Authority

- Reduces data errors
- Saves admin time
- Speeds up reporting
- Improves compliance
- Creates a traceable workflow

Use Cases

Primary Use Case: Data submission

1. User signs in with SSO
2. User is now prompted with a structured form containing tables and number fields representing the data
3. User fills data submission form and hits submit
4. User exits the submission system, and data is validated before being stored in a data warehouse



Other Use Cases

As an admin:

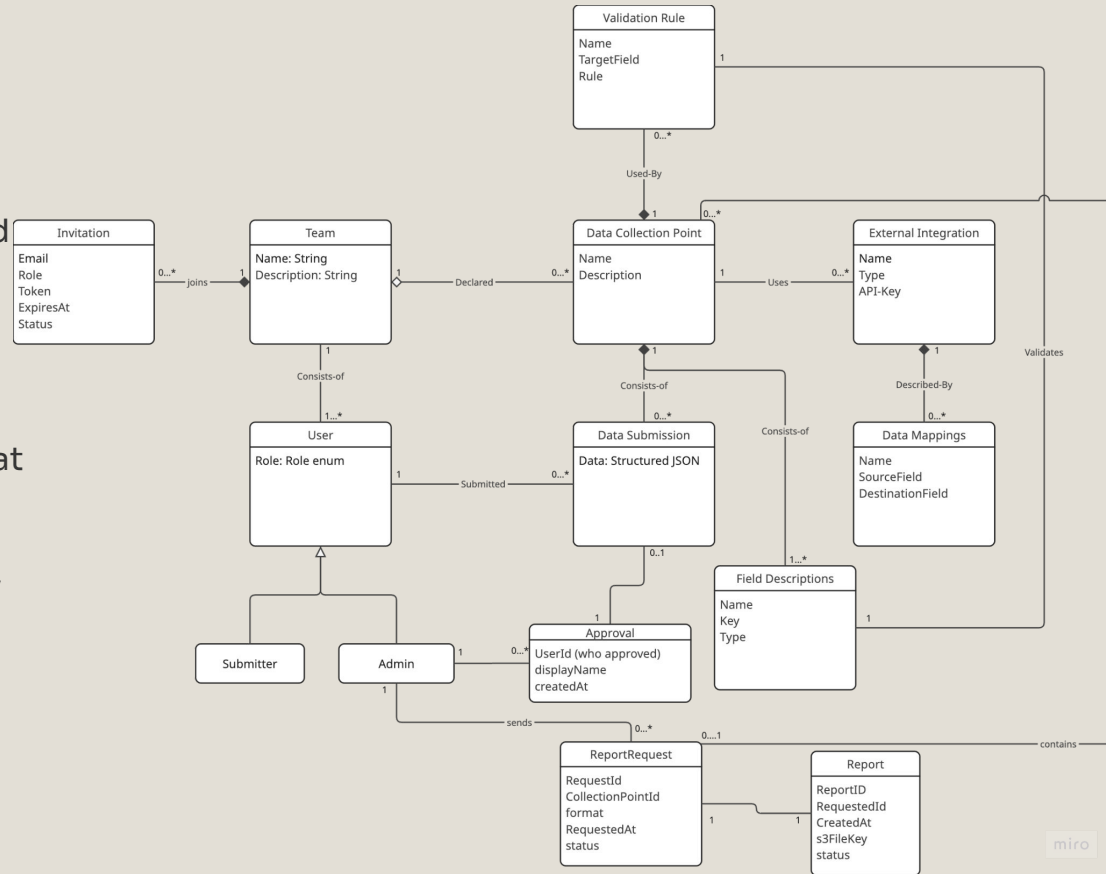
- Create new data collection points
- Approve collection point data and send to warehouse
- Create team
- Generate and download reports

Domain model

- Designed in Miro
- Relationships and unique properties
- Based on use case, each classes would showcase their components, and variances
- Many-to-many one-to-many many-to-one

Core design: If use case does something that needs data, it is a class

Focused around: User Management classes, Submission classes, Data Connection classes



Data Dictionary

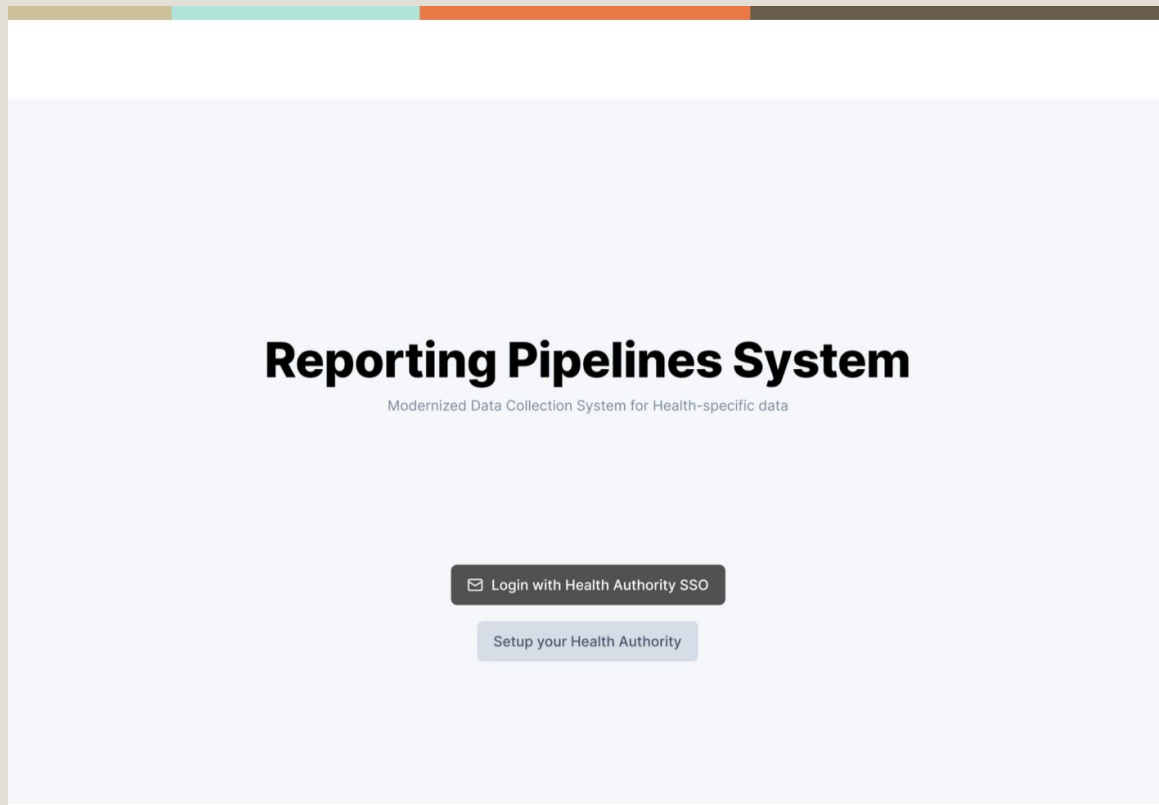
- Each table has a corresponding data dictionary
- Relationships are shown through the id as an element of the table and referred to in the Relationship
- Data type based on Oracle Database's data types
- FK are used for referral relationships

Column	Data Type	Description
user_id	int	Unique ID number identifying each user
user_first_name	char(50)	First name of user
user_last_name	char(50)	Last name of user
email	char(50)	User's email
team_id	int	Reference ID to Team table
role	enum	2 possible values: "Admin", "Submitter"
created_at	datetime	Creation timestamp
updated_at	datetime(500)	Update timestamps

Relation Name	Column Name	Data Type	Description
belongsToTeam	team_id	int	Foreign Key to Team table, referencing team_id value

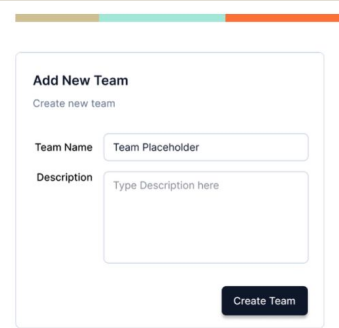
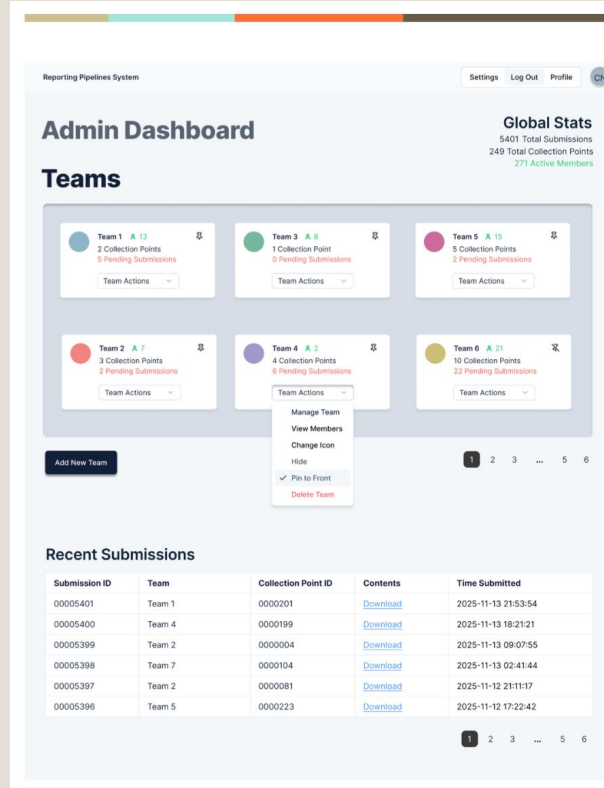
UI Models-Login Screen (SSO)

- Minimal layout with a **single primary SSO button** to reduce choice and enforce secure login.
- After login, the system uses the user's role to route them either to the **Admin Dashboard** or the **Submission Form**.



UI Models-Admin Dashboard

- Card-based overview of teams plus a **recent submissions table**, designed as the admin's main “hub”.
- Buttons and menus are consistent: a top-level “**Add New Team**” button and per-team action menus link to **Team Management** and **Collection pages**.



3. Team Management Screen

UI Models-Submission Form

- Table layout intentionally mirrors existing Excel sheets, so users recognise the structure immediately.
- Top-right “**Import from Excel file**” and bottom “**Submit**” button follow the natural “fill → check → submit” flow; submit triggers validation banners and a **Submission ID**.

Reporting Pipelines System

SettingsLog OutProfileCN

Finance Team

2025 Q1 Financial Dep

Import from Excel file

Data submission for financial data for each departments collected during Q1 of 2025

Validation errors

Email: Email not valid
Budgetary data: Data error
[I acknowledge the data submitted is accurate: Acknowledgement required](#)

Successful Submission: ID-313121

Submission in progress...

Email *

Email

Provide a primary contact email for this submission

Budgetary data *

Name	Department Head	Budget	Actual	Comments
Emergency Department	John Emer	\$100000	\$140000	Extra money was used for handling an emergency
Accounting Department	John Acc	\$160000	\$140000	Under Budget
Accounting Department	John Acc	\$160000	\$140000	Under Budget
Accounting Department	John Acc	\$160000	\$140000	
Accounting Department	John Acc	\$160000	\$140000	

Add Row

Comments

Provide any additional comments about the data

Additional comments outside of the Comments column

☐ I acknowledge the data submitted is accurate *

☐ I have reviewed all input data for correctness *

Validate and Submit data

Import From CSV Dialog

UI Models-Collection Review & Data Mapping Flow

Collection Review shows all submissions with status tags and a top action bar; the **“Send to Warehouse”** button starts the export flow.

Reporting Pipelines System

SettingsLog OutProfileCN

Finance Team

Collection Stats

54 Total Submissions

2025 Q1 Financial Dep

Actions

Edit Data Collection Point

Configure Data Connectors

Send Data to Data Warehouses

Generate Report

Recent Submissions

Submission ID	Contents	Time Submitted
00005401	Download	2025-11-13 21:53:54
00005400	Download	2025-11-13 18:21:21
00005399	Download	2025-11-13 09:07:55
00005398	Download	2025-11-13 02:41:44
00005397	Download	2025-11-12 21:11:17
00005396	Download	2025-11-12 17:22:42

1

2

3

...

5

6

UI Models-Collection Review & Data Mapping Flow

That button opens the **Data Mapping** screen: a two-column mapping table with “**Auto-map**” and “**Save Mapping**” buttons at the top-right, then returns to the Collection screen to confirm transfer.

Data Mapping

Save Mappings

Align incoming source fields to system destination fields

Source Data Connection

Source Name
2025 Q1 Financial Dep

Total Fields
12

Missing Mappings
2

Mapped Fields
4

Destination

Destination Name
Production Snowflake

Field Mappings

Auto-map Fields

Source Field	Source Type	→	Destination Field	Destination Type	Status
amount	number	→	amount	number	Mapped
department	string	→	department	string	Mapped
submitted_at	datetime	→	submission	datetime	Mapped
manager_name	string	→	Enter Field		Missing
review_status	string	→	Enter Field		Missing
notes	string	→	notes	string	Mapped

Auto-map Fields

Automatically matched fields. Review before applying.

Source Field	Suggested Mapping	Status
amount	Amount	Auto-mapped
department	Department	Auto-mapped
submitted_at	Submission	Auto-mapped
notes	Notes	Auto-mapped
manager_name	—	No match found
review_status	—	Needs review

Cancel

Apply Auto-mapping

UI Models-gallery

Team management

Reporting Pipelines System

SettingsLog OutProfile

CN

Back to Dashboard

Finance Team

Edit Team

Total Collection Points

15

Data Submissions













401

Active Members

32

Members













Add New Team Member

Name	Email	Role	Active	Actions
John A Placeholder	john@place.co	Admin	Active	 
John B Placeholder	johnB@place.co	Member	Active	 
John C Placeholder	johnC@place.co	Admin	Inactive	 
John D Placeholder	johnD@place.co	Member	Active	 
John E Placeholder	johnE@place.co	Member	Inactive	 
John F Placeholder	johnF@place.co	Member	Active	 

123...56

Data Collection Points

Add New Data Collection Point

Name	Description	Submissions	Due Date	Actions
2025 Q1 Financial Dep	Financial summaries for Q1 of...	13	June 30th, 2025	 
2025 Q1 Financial Dep	Financial summaries for Q1 of...	13	June 30th, 2025	 
2025 Q1 Financial Dep	Financial summaries for Q1 of...	13	June 30th, 2025	 
2025 Q1 Financial Dep	Financial summaries for Q1 of...	13	June 30th, 2025	 
2025 Q1 Financial Dep	Financial summaries for Q1 of...	13	June 30th, 2025	 
2025 Q1 Financial Dep	Financial summaries for Q1 of...	13	June 30th, 2025	 

123...56

Edit Team Information dialog

Edit Team Information

Edit your team's information

Name

Finance Team

Email

finance@place.co

Delete Team

Save

Add team member dialog

Add Member

Add a new member to your team

Name

John Z Placeholder

Email

johnZ@place.co

Role

Admin

☒ Member

Add Member

UI Models-gallery

Create Collection Point

Create Collection Point

Set up a new data collection with team assignment and validation rules



Team Association

Assign to team

Finance

Selected Team: Finance

Only members of this team can access and manage this collection



Collection Metadata

Define basic information about the collection

Collection Name

e.g., Q4 Customer Feedback

Description

Describe the purpose of this collection...

Deadline

yyyy-mm-dd



Collection Fields Definition

Define basic information about this collection



Field Definition

Define field information

Field Name

Email

Description

Provide a primary contact email for this submission

Type

String

Checkbox

☒ String

Data Table



Field Definition

Define field information

Field Name

Budgetary data

Description

Describe the purpose of this collection...

Type

Data Table

Checkbox

☒ Data Table

String

Columns

5

Headers

Name

Department Head

Budget

Actual

Comment

+ Add Field



Validation Rules

Define data validation logic for this collection

Field Key

Email

Rule Type

Required

Value rules (Regex)

Value (if applicable)

Field Key

e.g., email

Rule Type

Required

Value rules (Regex)

Value (if applicable)

+ Add Rule

UI Models-gallery

Warehouse Connectors

Warehouse Connectors

Warehouse Connectors

Manage and configure your warehouse connections

Team-level Settings

Global Settings

Configured Connectors

Add Connector

Connector Name	Type	Scope	Status	Actions
Production Snowflake	Snowflake	Team	Connected	<div><div></div><div></div><div></div></div>
BigQuery Analytics	BigQuery	Global	Connected	<div><div></div><div></div><div></div></div>
Redshift Staging	Redshift	Team	Error	<div><div></div><div></div><div></div></div>

Add Connector

Configure a new warehouse connection

Connector Type

Snowflake

Host

warehouse.snowflakecomputing.com

Port

5432

Database

analytics

Username

admin

Password

Enter

TeamGlobal

Test Connection

Cancel

Save Connector

8. Data Mapping Screen

UI Models-gallery

Reports

Dashboard

Reports

Generate and manage your data reports

Generate New Report

From Date

01/01/2024

To Date

31/12/2024

Data Collection

All Collections

Export Format

☒ CSV

☐ PDF

Generate Report

Email Report

Report History

3 reports

Report Name	Collection	Format	Date	Size	Actions
Q4 2024 Report	All Collections	PDF	2024-12-20	2.4 MB	<div></div> <div></div>
November Analytics	User Data	CSV	2024-11-30	1.8 MB	<div></div> <div></div>
October Summary	Sales Data	PDF	2024-10-31	3.2 MB	<div></div> <div></div>

Configure Report

Report Summary

Date Range:

2024-01-01 to 2024-12-31

Collections:

All Collections

Format:

CSV

Report Options

☒ Executive Summary

High-level overview of key metrics

☒ Charts & Graphs

Visual representations of data trends

☒ Detailed Data Tables

Complete row-level data records

☐ Send via Email

Cancel

Generate Report

Email Report

Report Details

Date Range:

2024-01-01 to 2024-12-31

Collections:

All Collections

Format:

CSV

Recipients *

Enter email addresses separated by commas e.g., user1@example.com, user2@example.com

Email Subject *

Report 2025-11-14

Options

☒ Include Raw Data

Attach data file to email

☐ Schedule Email

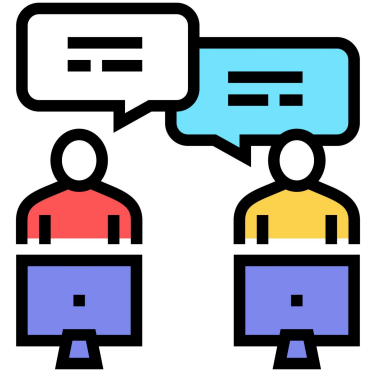
Send at a specific time

Cancel

Send Email

Group Coordination & Communication

- Used **Discord + Google Sheets** for contacting, task delegation and weekly alignment.
- Divided work by major deliverables (Requirements, Use Cases, Domain Model, UI, etc.)
- Shared files so everyone could track updates and avoid duplication
- Communicated frequently to clarify tasks and sync progress.
- Reviewed drafts together and corrected inconsistencies early.



Group Cooperation

- Work split by deliverable (Use Cases, Process Models, UI screens).
- Everyone contributed to merging and aligning the Domain Model.
- Used a consistent **draft -> review -> improve** loop for all artifacts.
- Provided peer feedback to maintain consistency across diagrams and text.
- Helped each other fix mismatches between Use Cases, Processes and UI Models.



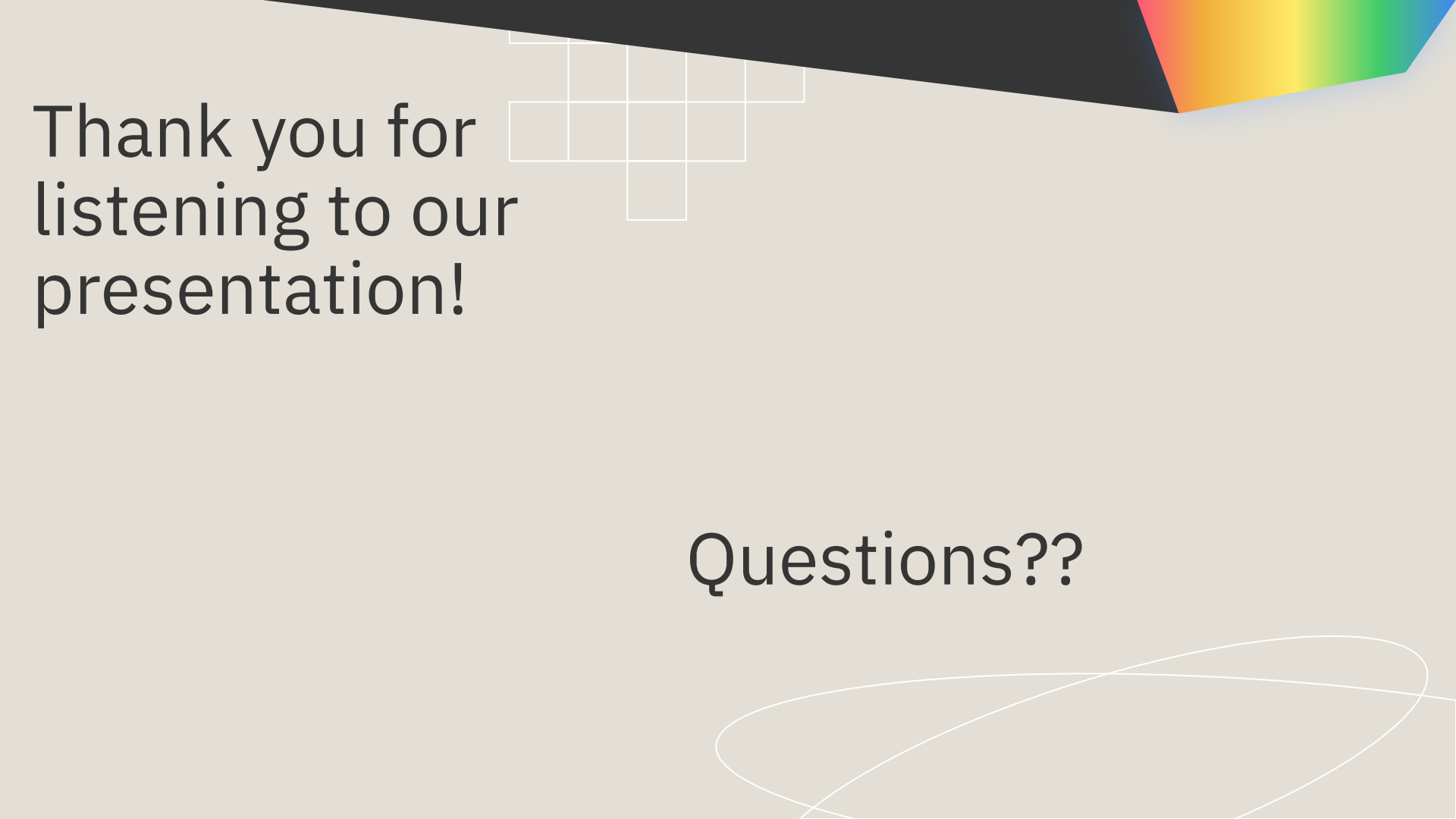
Lessons Learned

Positives

- Learned how interconnected artifacts fit together.
- Improved at communicating design decisions clearly
- Peer reviews significantly improved accuracy and consistency

Negatives

- Some tasks were dependent on others, causing re-work.
- Definitions and naming conventions needed several adjustments
- Aligning diagrams from multiple authors took more time than expected



Thank you for
listening to our
presentation!

Questions??