

# Reporting pipelines modernization

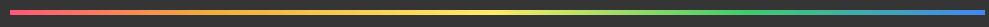
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This has been created solely for the CSC 375 course project.  
All content is intended for educational purposes only.

# Manage Data

## 375

## MD375





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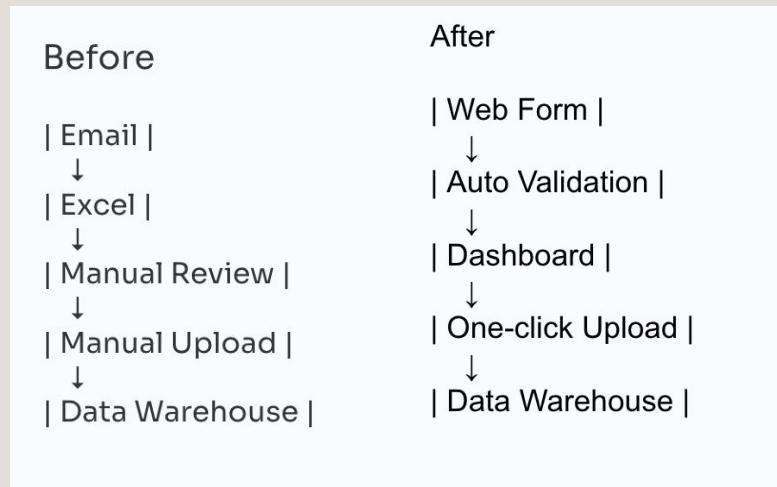
# Funding Directed

## 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



# Benefits & Market Value

## **Value to the Market**

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

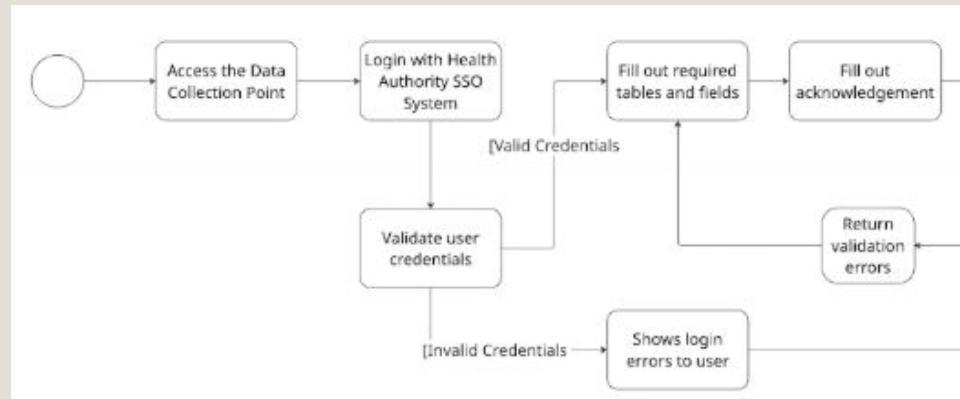
## **Benefits to the Health Authority**

- 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:**

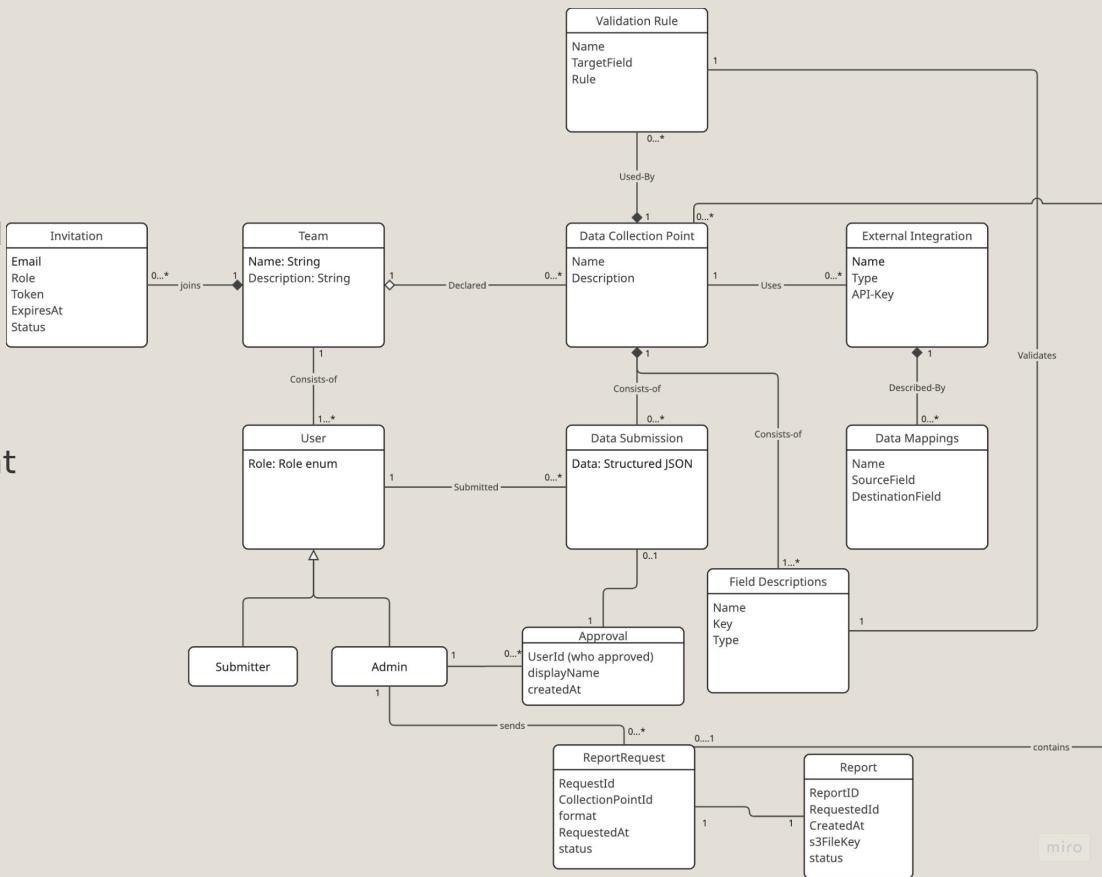
- Create new data collection points
- Approve collection point data and send to warehouse
- Create team
- Generate and download reports

# 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

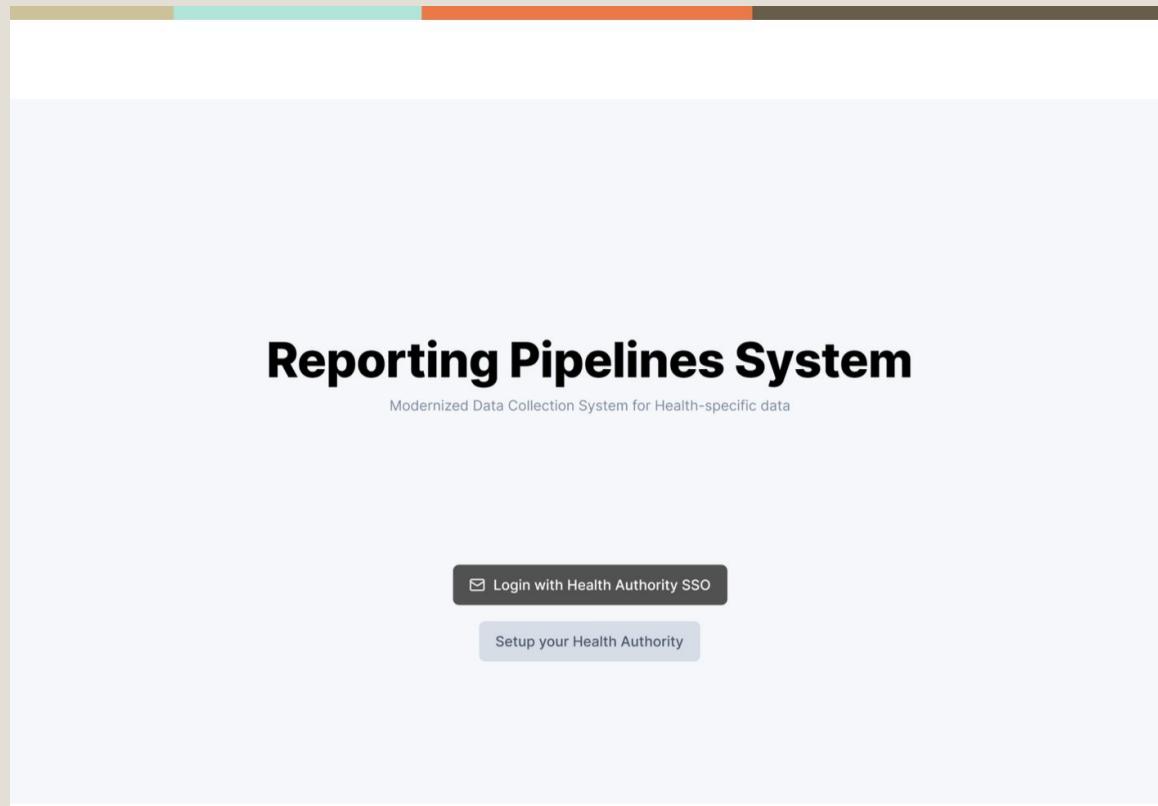
- Each table has a corresponding data dictionary
- Relationships are shown through the id as an element of the table and referred to in the Relationship
- Data type based on Oracle Database's data types
- FK are used for referral relationships

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

Relation Name	Column Name	Data Type	Description
<b>belongsToMany</b>	<b>team_id</b>	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.

The screenshot shows the Admin Dashboard interface. At the top right are links for 'Settings', 'Log Out', and 'Profile'. Below that is a 'Global Stats' summary: 5401 Total Submissions, 249 Total Collection Points, and 271 Active Members. The main area is titled 'Admin Dashboard' and features a 'Teams' section. It displays six team cards with icons, names, collection points, and pending submissions. Each card has a 'Team Actions' dropdown menu. A 'Manage Team' option is highlighted in one of the menus. Below the teams is a 'Recent Submissions' table with columns for Submission ID, Team, Collection Point ID, Contents, and Time Submitted. The table lists six recent submissions from Team 1, Team 4, Team 2, Team 7, Team 2, and Team 5. At the bottom are navigation links for page 1 through 6. To the right of the dashboard is a separate 'Add New Team' form with fields for 'Team Name' (placeholder) and 'Description' (placeholder), and a 'Create Team' button.

**3. Team Management Screen**

Submission ID	Team	Collection Point ID	Contents	Time Submitted
00005401	Team 1	0000201	<a href="#">Download</a>	2025-11-13 21:53:54
00005400	Team 4	0000199	<a href="#">Download</a>	2025-11-13 18:21:21
00005399	Team 2	0000004	<a href="#">Download</a>	2025-11-13 09:07:55
00005398	Team 7	0000104	<a href="#">Download</a>	2025-11-13 02:41:44
00005397	Team 2	0000081	<a href="#">Download</a>	2025-11-12 21:11:17
00005396	Team 5	0000223	<a href="#">Download</a>	2025-11-12 17:22:42

# 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 Settings Log Out Profile CN

Finance Team Import from Excel file

## 2025 Q1 Financial Dep

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

Settings Log Out Profile CN

Finance Team

## 2025 Q1 Financial Dep

Collection Stats  
54 Total Submissions

Actions

Edit Data Collection Point Configure Data Connectors Send Data to Data Warehouses Generate Report

### Recent Submissions

Submission ID	Contents	Time Submitted
00005401	<a href="#">Download</a>	2025-11-13 21:53:54
00005400	<a href="#">Download</a>	2025-11-13 18:21:21
00005399	<a href="#">Download</a>	2025-11-13 09:07:55
00005398	<a href="#">Download</a>	2025-11-13 02:41:44
00005397	<a href="#">Download</a>	2025-11-12 21:11:27
00005396	<a href="#">Download</a>	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

## Data Mapping

Align incoming source fields to system destination fields

Save Mappings

### Source Data Connection

Source Name  
2025 Q1 Financial Dep

Total Fields Missing Mappings Mapped Fields  
12 2 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

Settings Log Out Profile CN

← Back to Dashboard

### Finance Team

Total Collection Points Data Submissions Active Members

15	401	32
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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	

1 2 3 ... 5 6

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	

1 2 3 ... 5 6

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

Role 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: HRIS108  
Only members of this team can access and manage this collection

**Collection Metadata**

Collection Name  
e.g.: Q4 Customer Feedback

Description  
Describe the purpose of this collection...

Deadline  
yyyy-mm-dd

**Collection Fields Definition**

**Field Definition**

Define field information

Field Name  
Email

Description  
Provide a primary contact email for this submission

Type  
String  
Checkbox  
 String  
Data Table

**Validation Rules**

Define data validation logic for this collection

Field Key	Rule Type	Value rules (RegEx)
Email	Required	Value if applicable

Field Key	Rule Type	Value rules (RegEx)
e.g.: email	Required	Value if applicable

+ Add Rule

# UI Models-gallery

## Warehouse Connectors

Warehouse Connectors

Manage and configure your warehouse connections

Team-level Settings Global Settings

Configured Connectors

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

Add Connector

Add Connector

Configure a new warehouse connection

Connector Type: Snowflake

Host: warehouse.snowflakecomputing.com

Port: 5432

Database: analytics

Username: admin

Password: [REDACTED]

Scope: Team (selected)

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 (selected)

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	
November Analytics	User Data	CSV	2024-11-30	1.8 MB	
October Summary	Sales Data	PDF	2024-10-31	3.2 MB	

#### Configure Report

Report Summary

Date Range: 2024-01-01 to 2024-12-31  
Collection: 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  
Collection: All Collections  
Format: CSV

Recipients \*

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

Email Subject \*

Report 2024-11-14

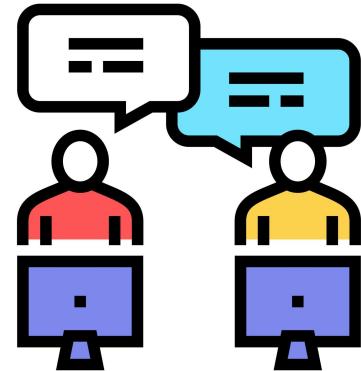
Options

- 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

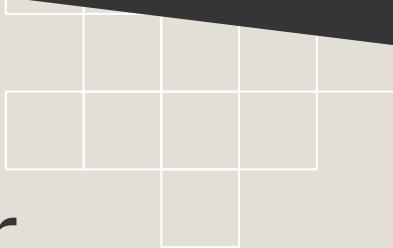
## Positives

- 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??