Contents

EXCEL PROJECTS

1 Healthcare Enrolment Trend Dashboard

Project Objective:

To create a dynamic and insightful dashboard in **Excel** that tracks **enrollment activities** over time — categorized by **date**, **enrollment type** (e.g., new enrollment, termination, modification), and **status** (e.g., accepted, rejected, pending). The goal is to help stakeholders identify patterns, seasonality, and performance metrics for better decision-making and operational efficiency.

Project Background:

In healthcare business operations, enrollment data is crucial for monitoring member onboarding, eligibility verification, and service access. Manual tracking often leads to delayed insights, mismanagement of pending enrollments, and lack of clarity on discrepancy resolutions.

By designing an Excel dashboard, the operations or analytics team can:

- **Visualize daily/weekly/monthly enrollment trends**
- **Identify bottlenecks in the approval process**
- **Track the performance of enrollment teams**
- **Prepare client reports and internal updates quickly**

Data Requirements:

Date	Member ID	Enrollment Type	Status	Plan Type	Submitted By	Resolution Time (days)
2023-11-24	M10000	New	Accepted	Gold	Agent B	0.9
2023-05-06	M10001	New	Accepted	Gold	Agent A	2.3
2023-12-13	M10002	Modification	Accepted	Gold	Agent C	2.3
2023-08-05	M10003	New	Pending	Gold	Agent A	
2023-04-22	M10004	New	Accepted	Bronze	Agent C	3
2023-01-14	M10005	Modification	Rejected	Gold	Agent C	2.3

Filename: Healthcare_Enrollment_Trend_Dataset.xlsx

Download from: https://github.com/swapnilsaurav/projects

Excel Tools and Features to Use:

Tool/Feature	Purpose
Pivot Tables	Summarize enrollments by type, status, month, agent
Slicers	Add interactivity to filter by Plan Type, Status, Enrollment Type
Conditional Formatting	Highlight rejected or delayed entries (e.g., >5 days resolution time)
Line Chart	Show trends in total enrollments per week/month
Bar Chart	Compare status-wise or agent-wise enrollment volumes
Data Validation	Ensure dropdowns for clean data entry (e.g., Enrollment Type)
Named Ranges	For cleaner formulas and dynamic dashboard updates

Key Metrics to Calculate:

- Total enrollments by month
- Acceptance rate (% Accepted / Total)
- Rejection rate
- Pending count
- Average resolution time
- Top 3 agents by volume
- Enrollment spikes or drop trends

Build Dashboard:

1. **Header** – Title, logo (optional), report date
2. **Filters** – Slicers for:
    - Month
    - Enrollment Type
    - Status
    - Submitted By
3. **KPI Cards** – Show:
    - Total Enrollments
    - Acceptance Rate
    - Avg Resolution Time
4. **Charts** –
    - Line Chart: Monthly Enrollment Trend
    - Bar Chart: Status-wise count
    - Bar Chart: Agent performance
5. **Table View** –
    - Use pivot table with conditional formatting to show recent entries and highlight delayed or rejected enrollments.

Solution Steps:

1. Header Section: Title, Logo (Optional), Report Date)

Steps:

1. Go to a new sheet and rename it as Dashboard.
2. In the top-left cell (e.g., A1), type the title:
   Healthcare Enrollment Trend Dashboard
    - Increase font size, bold it, center across columns.
3. Insert a logo (optional):
    - Use Insert → Pictures.
    - Resize and place it on the top-right corner.
4. Add today's report date:
    - In a cell like G1: ="Report Date: "&TEXT(TODAY(),"dd-mmm-yyyy")

2. Filters – Add Slicers for Interactivity

You'll first need a pivot table as a base.

Steps:

1. Select the dataset (Insert → Pivot Table → Place in a new worksheet).
2. In the pivot table sheet:
    - Add “Member ID” in **Values** (to count enrollments).
    - Add "Date", "Enrollment Type", "Status", "Submitted By" to **Rows or Filters** as needed.
3. Click on the Pivot Table.
4. Go to PivotTable Analyze → Insert Slicer.
5. Choose:
    - Date (then later group by Month)
    - Enrollment Type
    - Status
    - Submitted By
6. Resize slicers and place them on the dashboard sheet.

3. KPI Cards

Steps:

Use the pivot table or formulas for KPIs:

KPI	Formula Example
Total Enrollments	=COUNTA('Data'!B2:B5001)
Acceptance Rate	=COUNTIFS('Data'!D2:D5001,"Accepted")/COUNTA('Data'!B2:B5001)
Avg Resolution Time	=AVERAGEIF('Data'!D2:D5001,"<>Pending",'Data'!G2:G5001)

- Format with bold text and large font.
- Color-code KPI cards with light fill colors.
- Use icons if desired (Insert → Icons).

4. Charts Section

a. Line Chart – Monthly Enrollment Trend

Steps:

1. In your pivot table:
    - Drag “Date” to **Rows**, then right-click → Group → by “Months”.
    - Drag “Member ID” into **Values** (Count).
2. Insert a Line Chart:
    - Select Pivot Table → Insert → Line Chart
3. Move chart to Dashboard and title it accordingly.

b. Bar Chart – Status-wise Count

Steps:

1. Create a pivot table with:
    - Status in Rows
    - Member ID in Values (Count)
2. Insert → Bar Chart → Clustered Bar
3. Move and format it on the Dashboard.

c. Bar Chart – Agent Performance

Steps:

1. New pivot table:
    - Submitted By in Rows
    - Member ID in Values (Count)
2. Insert → Bar Chart
3. Move it to the Dashboard

Optional: Add a second value for Avg Resolution Time for combo chart.

5. Table View – Detailed Records with Highlights

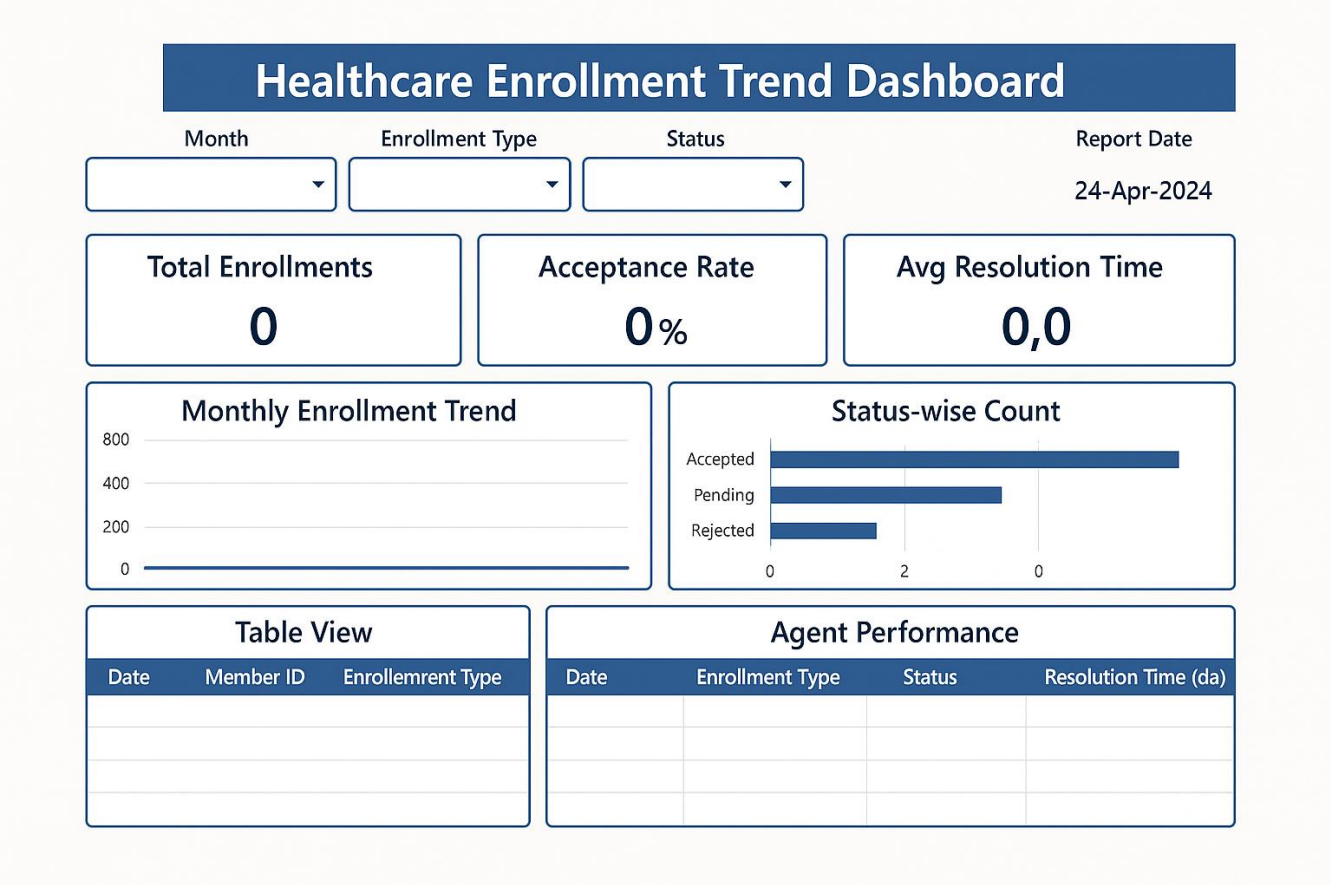
Steps:

1. Insert a new Pivot Table:
    - Rows: Date, Member ID
    - Columns: Enrollment Type, Status
    - Values: Resolution Time (days)
2. Apply **Conditional Formatting**:
    - Highlight Rejected rows in red.
    - Highlight rows where Resolution Time > 5 in yellow.
    - Use data bars for numeric columns.
3. Add filters to allow sorting by most recent dates.

Optional Enhancements

Feature	**Tip**
Timeline	Add a Timeline slicer on Date for easier month navigation
Dashboard Formatting	Use gridlines off, shapes, section headers
Export to PDF	Save dashboard as a printable PDF
Button to Refresh	Add a refresh button: Data → Refresh All

Sample Dashboard



2 Client Communication Dashboard

Project Objective:

To build a **dynamic Excel dashboard** that visualizes patterns in **email and call communication** with clients or internal stakeholders, analyzing by **time, sender/receiver, day, category**, and **communication volume**. This helps identify:

- Communication bottlenecks,
- Time-of-day trends,
- Load distribution among agents,
- Categories generating the most communication.

Background:

In any operations or service role (especially in healthcare, tech support, and consulting), communication is critical. Teams like Bismita's often handle high volumes of client emails, call scheduling, and query responses.

However, without structured data analysis, it’s difficult to:

- Identify when peak traffic occurs.
- Monitor agent response loads.
- Track unresolved or delayed communication.

A dashboard helps in:

- Spotting trends
- Improving resource allocation
- Enhancing client experience

Data Requirements:

You'll need a dataset (real or simulated) with the following columns:

Date	Time	Sender	Receiver	Medium	Category	Response Time (min)	Status
2023-07-22	10:54	Agent D	Client B	Call	Billing Error	52.5	Closed
2023-02-23	15:12	Agent C	Client D	Email	Eligibility Issue	28.3	Open
2023-09-13	19:03	Agent C	Client C	Call	Plan Inquiry	25.8	Closed
2023-09-30	08:37	Agent A	Client L	Email	Plan Inquiry	43.3	Open
2023-02-08	19:04	Agent D	Client K	Call	Policy Change	32.8	Open
2023-07-07	15:30	Agent B	Client O	Email	Plan Inquiry	35.5	Open

Filename: Client_Communication_Dashboard.xlsx

Download location:
https://github.com/swapnilsaurav/projects/blob/main/Client_Communication_Dashboard.xlsx

Excel Tools and Features to Use:

Pivot Tables Aggregate communication by day/week/sender/category

Slicers Add interactivity (filter by medium, agent, status)

Conditional Formatting Highlight long response times or unresolved cases

Heatmap (Matrix + CF) Visualize peak hours using day vs hour table

Line/Bar Charts Show trends in message volume

Data Validation Ensure clean inputs (Medium, Category, Status)

Dashboard Components

1. Header

- Title: Client Communication Dashboard
- Report date
- Filters: Slicers for:
  - Date
  - Medium (Email/Call)
  - Sender
  - Category
  - Status (Open/Closed)

2. KPI Cards

Metric	Calculation
Total Communications	COUNTA(Sender)
Avg Response Time	AVERAGE(Response Time)
% Open	COUNTIF(Status, "Open") / Total
Most Frequent Category	Use Pivot table to find max count

3. Visuals

a. Volume Trend by Date (Line Chart)

- Pivot table: Date vs Count of Medium

b. Sender-wise Communication (Bar Chart)

- Pivot table: Sender vs Count of Communications

c. Category-wise Distribution (Bar or Pie Chart)

- Pivot table: Category vs Count

4. Heatmap – Peak Hours

Steps:

1. Extract Hour from Time:
   =HOUR(Time)
2. Create a pivot table:
   - Rows: Hour (0–23)
   - Columns: Day of Week
   - Values: Count of Messages
3. Apply **Conditional Formatting**:
   - Use a 3-color scale to show intensity (low to high communication)

This gives a true **"call center-style" dashboard view** of hot zones!

Building Dashboard

1. HEADER

➤ Title and Report Date

1. Open a new worksheet and name it Dashboard.
2. In cell A1, enter:
   Client Communication Dashboard
   - Style it with large bold font, center-align across A1:E1, and increase the row height.
3. In cell G1, enter:
   ="Report Date: "&TEXT(TODAY(),"dd-mmm-yyyy")
   - This will show the current date.

➤ Filters using Slicers

First, create a pivot table from your main dataset in a new sheet named PivotData.

1. Go to Insert → PivotTable and select your dataset.
2. Place the pivot table in a new sheet.
3. Select the Pivot Table and go to:
   PivotTable Analyze → Insert Slicer
4. Choose these fields:
   - Date
   - Medium
   - Sender
   - Category
   - Status
5. Resize and position slicers on the Dashboard sheet for interactivity.

2. KPI CARDS

Create a separate area (e.g., rows 4–10 on the dashboard) to display key metrics.

➤ KPI 1: Total Communications

Formula (assuming data is in Sheet1):

=COUNTA(Sheet1!C2:C5001) // Column "Sender"

➤ KPI 2: Average Response Time

=AVERAGE(Sheet1!G2:G5001) // Column "Response Time (min)"

➤ KPI 3: % Open

=COUNTIF(Sheet1!H2:H5001,"Open")/COUNTA(Sheet1!H2:H5001)

Format as Percentage.

➤ KPI 4: Most Frequent Category

1. In Pivot Table:
    - Rows: Category
    - Values: Count of Category
2. Sort descending.
3. Pick the top value as your most frequent category.

Format all KPI cards with:

- Bold text
- Light background (e.g., light blue)
- Large fonts for numbers

3. VISUALS

a. Volume Trend by Date (Line Chart)

1. Create Pivot Table:
    - Rows: Date
    - Values: Count of Medium
2. Insert → Line Chart
3. Move it to the Dashboard and title it: "Daily Communication Volume"

b. Sender-wise Communication (Bar Chart)

1. Pivot Table:
    - Rows: Sender
    - Values: Count of Communications
2. Insert → Bar Chart (Clustered Bar)
3. Title: "Communications per Agent"

c. Category-wise Distribution (Bar or Pie Chart)

1. Pivot Table:
    - Rows: Category
    - Values: Count of Category
2. Insert → Pie Chart (or Bar Chart)
3. Title: "Support Issue Breakdown"

4. HEATMAP – PEAK HOURS

➤ Step 1: Extract Hour from Time

1. Insert a new column Hour in the original dataset:

```
=HOUR(B2)  // Assuming column B is "Time"
```

➤ Step 2: Extract Day of Week

1. Insert another column Day:

```
=TEXT(A2, "DDD")  // Assuming column A is "Date"
```

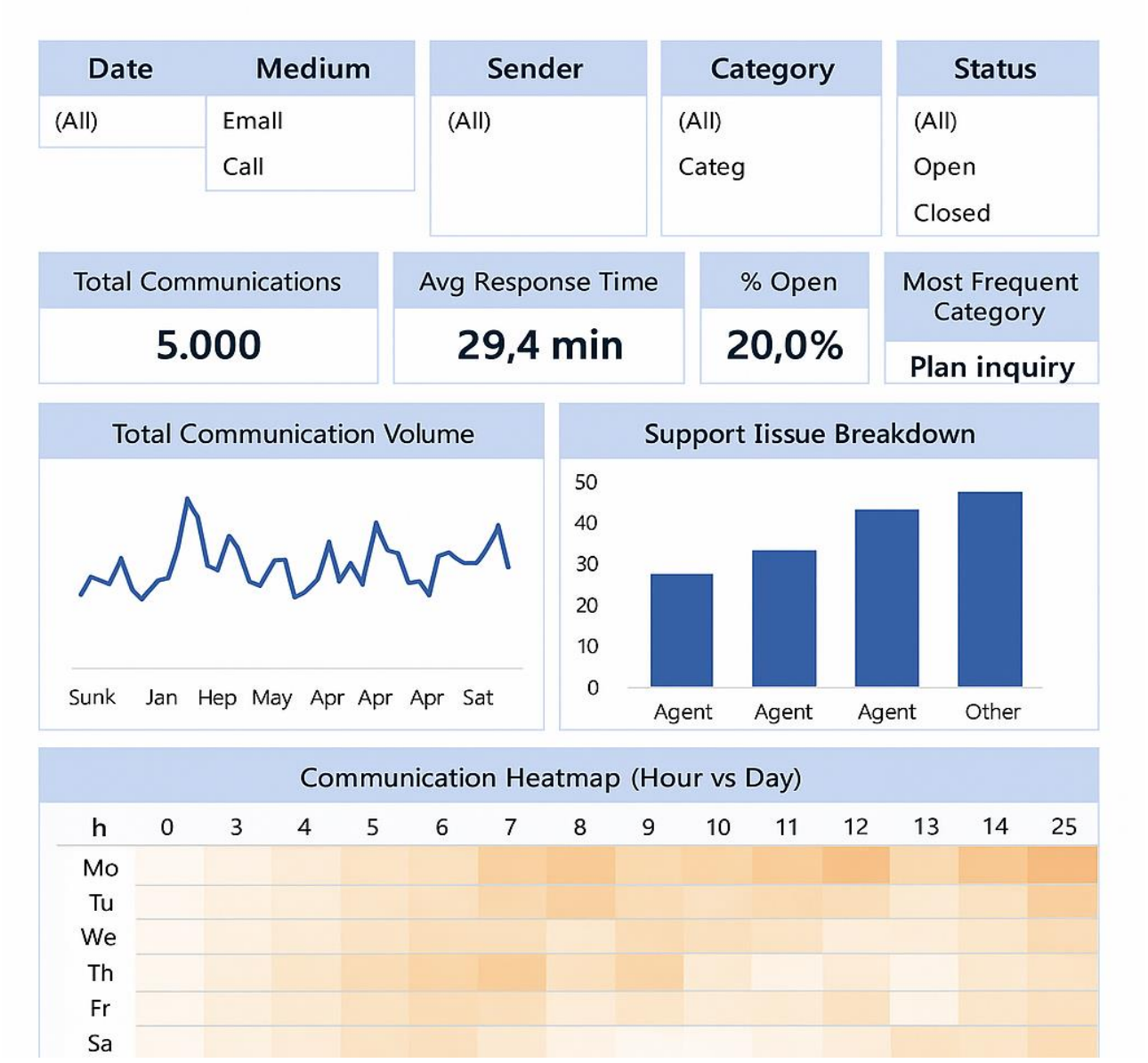
➤ Step 3: Create Pivot Table

- Rows: Hour
- Columns: Day
- Values: Count of Medium or Count of Time

➤ Step 4: Apply Conditional Formatting

1. Select the values area of the pivot table.
2. Go to Home → Conditional Formatting → Color Scales.
3. Choose a 3-color scale (e.g., green-yellow-red).
4. Add a title: "Communication Heatmap (Hour vs Day)"

SAMPLE DASHBOARD



3 Discrepancy Management Dashboard

Objective:

To build a dynamic Excel dashboard that tracks and analyzes discrepancies reported during business operations. The dashboard will help identify **root causes**, **high-frequency error types**, and **resolution effectiveness over time**. It will also provide visibility into associate-level performance in resolving these discrepancies.

Background:

In many organizations — particularly in **healthcare enrollment**, **claims processing**, **logistics**, and **retail** — teams report discrepancies when systems or business processes fail to meet expected outcomes.

Examples:

- Incorrect customer information
- Mismatched billing
- Data entry errors
- Shipment delivery mismatches

These discrepancies often cost time and money, making it critical for operations and quality teams to monitor them and take corrective action. Excel can be used as a lightweight yet powerful tool for visualizing such discrepancies and driving quality improvement.

Dataset Requirements:

Filename: Discrepancy_Management_Dataset.xlsx

Location: https://github.com/swapnilsaurav/projects

Column Name	Description
Discrepancy ID	Unique identifier
Date Reported	When discrepancy was logged
Resolved Date	When discrepancy was closed
Discrepancy Type	Category of error (Data Entry, Technical, Manual Process, etc.)
Reason Description	Text field explaining the issue
Reported By	Name/ID of associate who logged it
Status	Open, Resolved, Escalated
Resolution Time (days)	Calculated as Resolved Date - Reported Date

Key Metrics and KPIs

Metric	Description
Total Discrepancies	Count of all issues
Avg Resolution Time	Mean of all resolution durations
Most Common Type	Highest frequency discrepancy category
Monthly Trend	How discrepancy count and avg resolution changed over months

Metric	Description
Associate Drill-down	Per-agent performance and type-wise patterns

Excel Tools and Features to Use

Tool/Feature	Use
Pivot Tables	Summarize frequency, resolution time
Pivot Charts	Display monthly and type-wise trends
Slicers	Filter by associate, status, type
Conditional Formatting	Highlight long resolution times or escalated cases
Trend Lines	Add to charts to show improvements over time
Drillthrough	Use linked pivot tables to explore associate-level details

Dashboard Layout

1. Header Section

- Title: Discrepancy Management Dashboard
- Report Date (auto-generated)
- Filters: Slicers for
    - Discrepancy Type
    - Status
    - Reported By (associate)

2. KPI Cards

- Total Discrepancies
- Avg Resolution Time
- % Resolved vs % Escalated
- Most Frequent Discrepancy Type

3. Charts

a. Monthly Trend

- Pivot table grouped by Month(Date Reported)
- Values: Count of Discrepancies
- Add **Trendline** using Excel's chart options

b. Discrepancy Type Frequency

- Pivot: Type vs Count
- Bar/Column Chart

c. Resolution Time by Type

- Avg resolution time per type
- Combo chart: frequency + avg days

4. Drillthrough Table

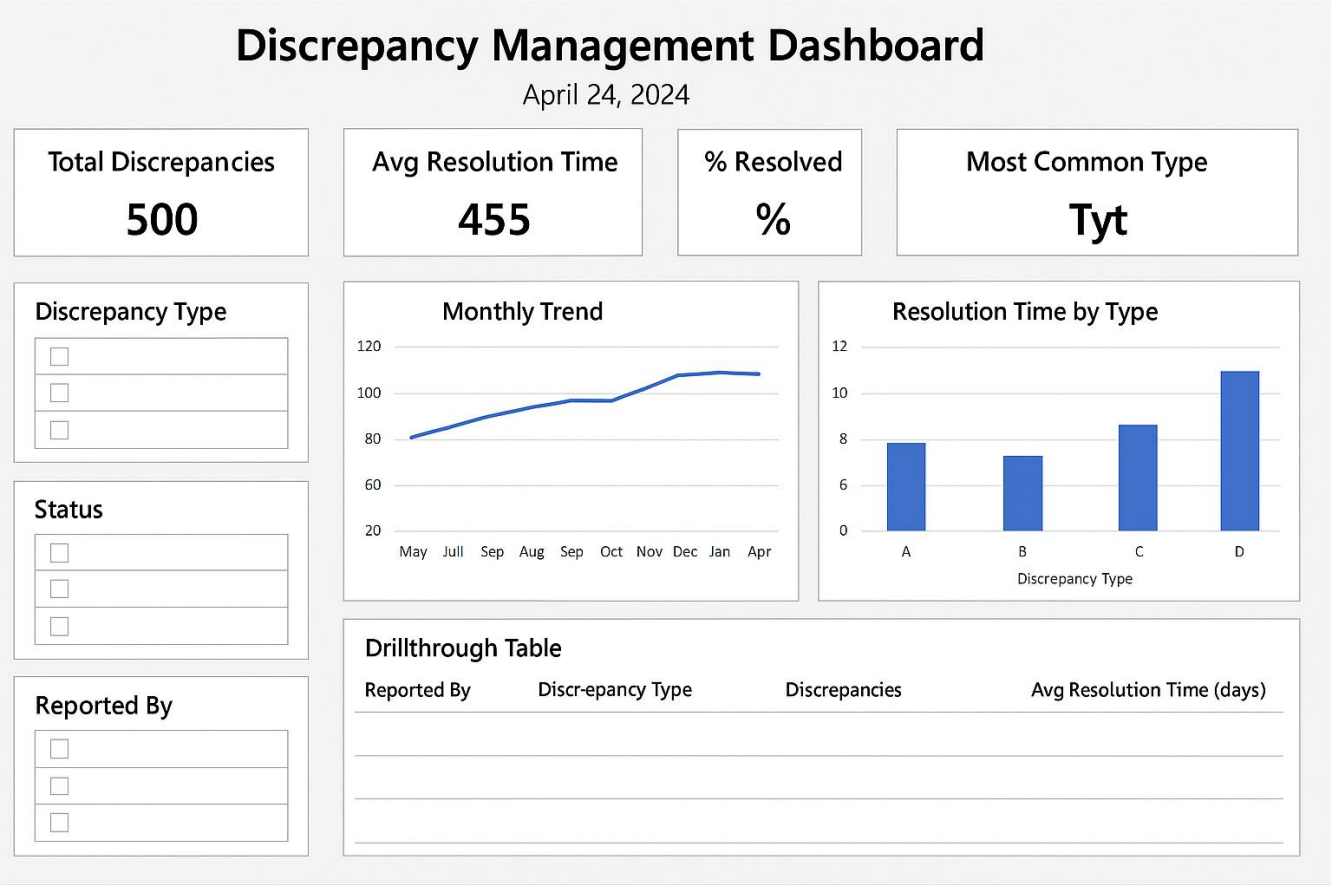
- Pivot table with:
    - Rows: Reported By, Discrepancy Type
    - Values: Count, Avg Resolution Time

- Add conditional formatting: highlight values > X days

Final Deliverables

- Excel file: Discrepancy_Management_Dashboard.xlsx
- ReadMe sheet describing:
  - Dataset structure
  - KPIs calculated
  - Slicers and filtering logic

SAMPLE DASHBOARD



SQL PROJECTS (MYSQL Database)

Project Title: Healthcare Enrollee Database & Discrepancy Analytics using SQL

Project Objective:

To build and query a simulated relational database representing a healthcare insurance enrollment system. The project will include tables for members, plans, enrollments, and discrepancies — along with an audit log to simulate system monitoring.

Through SQL, you'll derive operational KPIs such as:

- Enrollment success rate
- Plan-level rejection trends
- User-level update behavior
- Discrepancy patterns

This project strengthens your ability to design a schema, populate test data, write analytical queries, and detect anomalies — vital skills in healthtech and data auditing.

Background & Use Case:

Health insurance providers track member enrollments, plans chosen, and issues (discrepancies) that arise during enrollment. Accurate data is essential to compliance and operations.

This project mimics such a system and uses SQL to:

- Identify errors or delays in enrollment
- Measure associate performance
- Monitor security and update behaviors (audit trail)

Database Schema Design

1. Members Table

Column Name	Type	Description
member_id	INT (PK)	Unique identifier
first_name	TEXT	First name
last_name	TEXT	Last name
gender	TEXT	M/F/Other
dob	DATE	Date of birth
registered_on	DATE	Registration date

2. Plans Table

Column Name	Type	Description
plan_id	INT (PK)	Unique plan ID
plan_name	TEXT	Name of the plan
coverage_type	TEXT	E.g., Individual, Family
premium	DECIMAL	Monthly premium

3. Enrollments Table

Column Name	Type	Description
enrollment_id	INT (PK)	Unique ID
member_id	INT (FK)	Linked to Members
plan_id	INT (FK)	Linked to Plans
enrolled_on	DATE	Enrollment date
status	TEXT	Enrolled / Rejected / Pending
submitted_by	TEXT	Associate name or ID

4. Discrepancies Table

Column Name	Type	Description
discrepancy_id	INT (PK)	Unique ID
enrollment_id	INT (FK)	Linked to Enrollments
issue_type	TEXT	E.g., Data Mismatch, Incomplete
reported_on	DATE	Date of reporting
resolved_on	DATE	Resolution date (nullable)
resolution_notes	TEXT	Optional comment

5. Audit_Log Table

Column Name	Type	Description
audit_id	INT (PK)	Unique log ID
user_id	TEXT	Associate or system account
action_type	TEXT	INSERT, UPDATE, DELETE, LOGIN
table_affected	TEXT	Table name
action_timestamp	DATETIME	Time of action

DATA CREATION

For complete Create table and adding data to the table refer below SQL script file:

healthcare_enrollment_tables_script.sql

Location: https://github.com/swapnilsaurav/projects

Project Tasks & Queries

Discrepancy Analysis Queries

1. **Find members with multiple discrepancies:**

```
SELECT m.member_id, COUNT(d.discrepancy_id) AS total_issues
FROM Members m
JOIN Enrollments e ON m.member_id = e.member_id
JOIN Discrepancies d ON e.enrollment_id = d.enrollment_id
GROUP BY m.member_id
HAVING COUNT(d.discrepancy_id) > 1;
```

2. **Average resolution time:**

```
SELECT AVG(DATEDIFF(resolved_on, reported_on)) AS avg_resolution_days
FROM Discrepancies
WHERE resolved_on IS NOT NULL;
```

3. **Plans with high rejection rates:**

```
SELECT p.plan_name, COUNT(*) AS total_attempts,
    SUM(CASE WHEN e.status = 'Rejected' THEN 1 ELSE 0 END) AS rejections,
    ROUND(SUM(CASE WHEN e.status = 'Rejected' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS
rejection_rate
FROM Plans p
JOIN Enrollments e ON p.plan_id = e.plan_id
GROUP BY p.plan_name
ORDER BY rejection_rate DESC;
```

KPI Dashboard Queries

4. **Enrollment success rate:**

```
SELECT ROUND(SUM(CASE WHEN status = 'Enrolled' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2)
AS success_rate
FROM Enrollments;
```

5 Rejection rate per plan:
(Similar to query 3 above.)

6 Number of updates per associate:

```
SELECT user_id, COUNT(*) AS updates
FROM Audit_Log
WHERE action_type = 'UPDATE'
GROUP BY user_id
ORDER BY updates DESC;
```

Audit Trail Analysis

7. **Actions by user/date:**

```
SELECT user_id, DATE(action_timestamp) AS action_date, COUNT(*) AS action_count
FROM Audit_Log
GROUP BY user_id, DATE(action_timestamp)
ORDER BY action_count DESC;
```

8. **Update frequency:**

```
SELECT user_id, COUNT(*) AS total_updates
FROM Audit_Log
WHERE action_type = 'UPDATE'
GROUP BY user_id;
```

9. **Detect unusual activity:**

```
SELECT user_id, COUNT(*) AS actions, MIN(action_timestamp) AS first_action,
MAX(action_timestamp) AS last_action
FROM Audit_Log
GROUP BY user_id
HAVING actions > 50 OR last_action > NOW() - INTERVAL 1 DAY;
```

* * *

POWER BI PROJECTS

Project Title: Healthcare Operations Intelligence Suite using Power BI

Project Objective:

To design and develop an interactive and insightful Power BI dashboard suite using simulated healthcare data. The suite will provide data-driven insights across enrollment trends, discrepancies, associate performance, communications, and employee achievements to enable operational excellence and strategic decisions.

Business Background:

A healthcare services organization managing insurance enrollments, customer service, and backend processing is seeking to improve oversight into its operational efficiency. The goal is to leverage Power BI for:

- Transparent tracking of enrollments and errors
- Monitoring associate-level KPIs and communication efficiency
- Identifying gaps in process quality and recognition of top performers

Project Scope and Pages

1. Healthcare Enrollment Insights Dashboard

Pages:

- **Overview**
- **Discrepancies**
- **Associate Performance**

Dataset Requirements:

Filename: **Healthcare_Operations_Insights_Dataset.xlsx**

Location: https://github.com/swapnilsaurav/projects

Dataset with the following columns:

- Member ID, Plan Name, Enrollment Date, Enrollment Status
- Submitted By, Enrollment Channel
- Discrepancy Reason, Reported On, Resolved On

KPIs to Track:

- Total Enrollments
- % Errors (Discrepancy rate)
- Average Turnaround Time (TAT)

Visualizations:

- Enrollment trend line chart (by month/quarter)
- Error % by plan, type, or associate (bar/stacked column)
- Average resolution time (KPI card)
- Associate performance: Enrollments vs Errors vs Avg TAT

SOLUTION 1 STEPS:

Track enrollment performance, errors, and associate KPIs.

Dataset Fields Required:

- **Enrollment_Date**
- **Enrollment_Status**
- **Plan_Name**
- **Submitted_By**
- **Discrepancy_Type**
- **Discrepancy_Reported**
- **Discrepancy_Resolved**

1. **Load Excel into Power BI**
    - Load data from the Excel file.
    - Set Enrollment_Date and Discrepancy_Reported/Resolved as **Date** type.

Page 1: Overview

2. **KPI Cards**:
    - **Total Enrollments**:
      Total Enrollments = COUNT(Member_ID)
    - **% Errors (Discrepancies)**:
      Error Rate = DIVIDE(COUNTROWS(FILTER(Data,
      NOT(ISBLANK(Data[Discrepancy_Type])))), COUNT(Member_ID))
    - **Avg TAT (Turnaround Time)**:

DAX:

```
TAT = AVERAGEX(
 FILTER(Data, NOT(ISBLANK(Data[Discrepancy_Resolved]))),
 DATEDIFF(Data[Discrepancy_Reported], Data[Discrepancy_Resolved], DAY)
)
```

3. **Line Chart**:
    - X-axis: Enrollment_Date (Month hierarchy)
    - Y-axis: Count of Member_ID
4. **Bar Chart**:
    - Enrollment Status by Plan_Name
    - Add Data Labels

Page 2: Discrepancies

5. **Pie or Bar Chart**:
    - Count of Discrepancy_Type
    - Use filter for Enrollment_Status = Rejected
6. **Line Chart for TAT trend**
    - X: Discrepancy_Reported (Month)
    - Y: Avg TAT (DAX above)

Page 3: Associate Performance

7. **Table or Bar Chart**:
    - Submitted_By vs Count of Enrollments
    - Add filter: Enrollment_Status = "Enrolled"
8. **Conditional Formatting Table**:
    - Fields: Submitted_By, Enrollments, Errors, Avg TAT
    - Use color scales to highlight performers

2. Client Communication Dashboard

Dataset Requirements:

Upload **email/call log data** with:

- Date, Time, Medium (Call/Email), Sender, Receiver, Category, Status (Open/Closed), Response Time

Visualizations:

- Communication **volume by day/week** (line chart)
- **Sender/receiver** breakdown (bar chart)
- **Category-wise volume** (donut/pie chart)
- **Heatmap for peak hours**
  (X-axis: Hour of day, Y-axis: Weekday)

KPIs to Track:

- **Total Communications**
- **Avg Response Time**
- **% Open Tickets**
- **Most Frequent Category**

SOLUTION 2 STEPS:

Dataset Fields:

- Comm_Date
- Comm_Time
- Comm_Medium
- Comm_Sender
- Comm_Category
- Comm_Status
- Response_Time_Min

Extract Hour & Day from Comm_Time and Comm_Date

- Add columns in Power BI:

DAX:

Hour = HOUR(Data[Comm_Time])

DayName = FORMAT(Data[Comm_Date], "dddd")

KPI Cards:

- **Total Communications**: COUNT(Comm_Sender)
- **Avg Response Time**: AVERAGE(Response_Time_Min)
- **% Open**:
  Open Rate = DIVIDE(CALCULATE(COUNTROWS(Data), Data[Comm_Status] = "Open"), COUNTROWS(Data))
- **Most Frequent Category**:
  Use a measure with TOPN or create summary table.

Line Chart:

- Date vs Count of Communications

Bar Chart:

- Sender-wise or Category-wise breakdown

Heatmap for Peak Hours:

- X-axis: Hour, Y-axis: DayName
- Use Matrix visual + conditional formatting on Count of messages

3. Discrepancy Management Dashboard

Dataset Requirements:

Discrepancy logs with:

- Discrepancy ID, Date Reported, Resolved Date, Type, Reason, Reported By, Status

KPIs to Track:

- Total Discrepancies
- Avg Resolution Time
- % Resolved / Escalated

Visualizations:

- Monthly trend of discrepancies (line chart)
- Count by **discrepancy reason/type** (bar chart)
- Associate-wise discrepancy resolution (bar chart)
- Drill-through by associate or discrepancy type

SOLUTION 3 STEPS:

Required Fields:

- Discrepancy_Type
- Discrepancy_Reported
- Discrepancy_Resolved
- Submitted_By

Create KPI Cards:

- **Total Discrepancies**: COUNT(Discrepancy_Type)
- **Avg Resolution Time** (Same TAT measure from above)

- **% Resolved**:

DAX:

```
% Resolved = DIVIDE(
 COUNTROWS(FILTER(Data, NOT(ISBLANK(Data[Discrepancy_Resolved])))),
 COUNTROWS(Data)
)
```

Bar Chart:

- Count by Discrepancy_Type

Line Chart:

- Monthly improvement in count
- X: Discrepancy_Reported (Month), Y: Count

Drill-through setup:

- Target Page: Discrepancy Detail
- Enable Drillthrough on Submitted_By or Discrepancy_Type

4. Employee Performance & Awards Tracker

Dataset Requirements:

Achievement and performance tracking data:

- Employee Name, Department, Month, Quality Score, Awards (Spot, Star, Bravo, etc.)

Visualizations:

- Trends of performance scores (line chart)
- Awards count by employee (clustered bar)
- Correlation chart: **Performance Score vs Awards Received**
- Filters: Month, Department, Award Type

KPIs:

- Total Awards Given
- Avg Quality Score
- Employees with highest award-to-performance ratio

Tools and Techniques to Use

- **Power BI Desktop** for development
- **DAX Measures** for KPIs
- **Slicers and Bookmarks** for interactivity
- **Drillthrough and Tooltip Pages** for detailed insights
- **Custom visuals** (e.g., heatmaps, decomposition trees)

SOLUTION 4 STEPS:

Required Fields:

- Employee
- Department

- Quality_Score
- Award
- Award_Month

1. **KPI Cards**:
    - **Total Awards Given**:
      COUNTROWS(FILTER(Data, Data[Award] <> "None"))
    - **Avg Quality Score**: AVERAGE(Quality_Score)
    - **Top Performer Ratio**:

DAX:

```
Ratio = DIVIDE(
 COUNTROWS(FILTER(Data, Data[Award] <> "None")),
 COUNTROWS(Data)
)
```

2. **Line Chart**:
    - X: Award_Month
    - Y: Avg Quality Score
3. **Bar Chart**:
    - Employee vs Count of Awards
    - Filter: Award ≠ None
4. **Scatter Plot**:
    - X: Quality_Score, Y: Awards Count
    - Use to highlight correlations

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