



Innovation & Entrepreneurship Hub for Educated Rural Youth (SURE Trust – IERY)

Automation of Forms to MySQL DB & Bank Customer's Analysis and CineMetrics: A Movie Analytics Dashboard through Power BI

The domain of the Project:

SQL AND POWER BI

Under the guidance of

Ms. Siddhika Shah - Software Engineer at HCL Technologies

Prof. Radha Kumari - Executive Director & Founder SURE Trust

BY

MUSKE AKSHITHRAM (B.Tech 4th year)

Period of the project

May 2025 to August 2025



SURE TRUST

PUTTAPARTHI, ANDHRA PRADESH



Innovation & Entrepreneurship Hub for Educated Rural Youth (SURE Trust – IERY)

Declaration

The project titled “**Automation of Forms to MySQL DB & Bank Customer’s Analysis and CineMetrics: A Movie Analytics Dashboard through Power BI**” has been mentored by **Ms. Siddhika Shah**, organised by SURE Trust, from May 2025 to August 2025, for the benefit of the educated unemployed rural youth for gaining hands-on experience in working on industry relevant projects that would take them closer to the prospective employer. I declare that to the best of my knowledge the members of the team mentioned below, have worked on it successfully and enhanced their practical knowledge in the domain.

Submitted By :

Mr. MUSKE AKSHITHRAM
(Pursuing B.Tech 4th year)

Signature :

MUSKE AKSHITHRAM

Mentor :

Ms. Siddhika Shah
Software Engineer At HCL Technologies

Signature :

Seal & Signature:

Prof. Radha Kumari
Executive Director & Founder
SURE Trust



TABLE OF CONTENTS

1. Executive summary -----	4-6
2. Introduction	
2.1 Background -----	7
2.2 CineMetrics Dashboard -----	7-8
2.3 Bank Customer's Analysis -----	8-9
2.4 Google Forms to MYSQL Automation-----	9-10
2.5 Innovation Component -----	10
3. Project Objectives	
3.1 CineMetrics's Goals, Approach, Outcomes -----	11
3.2 Bank Customer Analysis's Goals, Outcomes -----	11-12
3.3 SQL Automation's Goals, Outcomes -----	12
4. Methodology & Results	
4.1 Methods / Tools used -----	13
4.2 Data Collection Approach -----	14
4.3 Project Architecture -----	15-16
4.4 Final Project Working along with Supporting Explanation -----	17-23
4.5 Project GitHub Link -----	23
5. Learning & Reflection	
5.1 Insights gained -----	24
5.2 Key Takeaways -----	25
6. Conclusion & Future Scope	
6.1 Recap Objectives and achievements -----	26
6.2 Future Scope of this project -----	27



Executive Summary

CineMetrics: A Movie Analytics Dashboard (Major Project – Power BI)

The “CineMetrics” project was designed to evaluate the global movie industry’s performance and generate actionable insights using data-driven methods. Leveraging Power BI dashboards, the study uncovered patterns in box office revenue, critical reviews, awards and production performance. The approach combined financial performance tracking with audience and critic sentiment to highlight growth opportunities, genre trends, and studio-level competitiveness.

Key Performance Indicators

1. Global box office performance and profitability across movies.
2. Awards, ratings and critic reviews as measures of quality and recognition.
3. Market distribution by genre, language and production companies.
4. Audience engagement indicators such as votes, ratings and content-rating categories.

Key Findings

1. “Horror” emerged as the most profitable and top-performing genre overall.
2. “Yash Raj Films” stood out as the most prolific studio, while Netflix, Pixar, and Warner Bros. also contributed significantly.
3. Movies were evenly distributed across major languages (English, Hindi, Korean, French, Spanish, etc.), reflecting global industry inclusivity.
4. Global box office collections reached ~26 trillion with strong profitability (ROI ~5.7).
5. Movies like “Winds of Fate 9” achieved high recognition, winning the highest number of awards.

Recommendations

1. Focus investment and marketing strategies on high-performing genres (Horror, Drama) while improving underperforming ones.
2. Collaborate with high-performing studios and streaming platforms to maximize returns.
3. Target growth in emerging language markets (Korean, Mandarin, Hindi) where audience engagement is rising.
4. Blend financial success with critical recognition by supporting creative storytelling alongside commercial hits.



Bank Customer’s Analysis Dashboard (Mini Project – Power BI)

The “Bank Customer’s Analysis Dashboard” project was designed to analyze customer demographics, financial balances, and behavioral patterns in the banking sector. Using Power BI, the dashboard provided stakeholders with insights into customer distribution, balance levels, and trends in customer acquisition. The approach combined demographic segmentation with financial performance tracking to highlight customer value tiers and growth opportunities.

Key Performance Indicators

1. Total balance and customer base segmented by gender, age, and region.
2. Customer distribution by job classification (white collar, blue collar, other).
3. Balance levels categorized into high, medium, and low-value segments.
4. Customer acquisition trends monitored monthly and quarterly.

Key Findings

1. England accounts for the highest share of customers, followed by Scotland and Wales.
2. Customer base is evenly split across genders, with slightly more male customers (2165 vs. 1849).
3. A majority of the total balance (~60%) is concentrated within high-value customers.
4. New customer acquisition peaked in mid-year months, with steady growth across the year.
5. Customers aged 25–45 contribute the largest share of balances across both genders.

Recommendations

1. Design premium services and loyalty programs to retain and expand this profitable segment.
2. Focus marketing strategies on underrepresented regions such as Northern Ireland.
3. Create tailored financial products for younger customers (20–30) to build long-term loyalty.
4. Reinforce campaigns during peak acquisition months to maximize growth momentum.
5. Encourage medium and low-value customers to upgrade through savings incentives and bundled offerings.



Google Forms to MySQL Automation (SQL Project)

This project aimed to develop an end-to-end automated workflow that transfers responses collected via Google Forms into a structured MySQL database in real-time. By designing an automated integration, the solution eliminates manual intervention, ensures instant data availability, and provides a reliable foundation for analytics and reporting.

The system is designed to capture, validate, and store responses with minimal latency, significantly improving data quality, productivity, and decision-making capabilities for stakeholders. Once stored in MySQL, responses can be queried, aggregated, and analyzed to uncover trends, track engagement, and monitor key performance indicators.

Key Performance Indicators (KPIs)

1. Tracking the total number of responses ingested into the database.
2. Percentage of valid, error-free responses successfully stored.
3. Time required for Google Form submissions to reflect in MySQL.
4. Execution time for retrieving and aggregating insights.
5. Categorization and distribution of responses across demographic, categorical, or behavioral attributes.

Key Outcomes

- Eliminated repetitive manual data entry and improved turnaround speed for reporting.
- Reduced risk of data corruption or human error, ensuring clean and structured datasets.
- Built a direct pipeline connecting Google Forms with MySQL, creating a ready-to-use dataset for downstream applications such as BI dashboards and automated alerts.
- Enabled near real-time analysis of response trends, enhancing agility in operational and strategic planning.

Recommendations

1. Integrate additional input channels such as Excel uploads, APIs, or other survey tools to unify data collection.
2. Develop an interactive dashboard (e.g., Power BI or Tableau) to dynamically monitor KPIs and response distributions.
3. Implement automated backup routines and monitoring systems to ensure database reliability and prevent data loss.
4. Create workflow rules or alerts to flag anomalies (e.g., unusually high responses, errors, or critical feedback).
5. Optimize the pipeline for handling larger datasets as response volume grows over time.



Introduction

Background

In today's digital era, organizations generate vast amounts of operational and customer data. To stay competitive, it is essential to transform this raw data into actionable insights through automation, analysis, and visualization. Business domains such as banking, entertainment, and data-driven services increasingly rely on BI dashboards and automated pipelines to improve efficiency, optimize strategies, and enhance decision-making.

The projects were designed to address these requirements.

1. CineMetrics Dashboard (Major Project – Power BI)

Problem Statement

The entertainment industry lacked a consolidated view of cinema performance, making it difficult to track revenue trends, customer engagement, and operational efficiency across quarters.

Goal: Develop an interactive Power BI dashboard to analyze cinema revenue, customer distribution, and seasonal trends, supporting growth strategies and operational improvements.

Data Sources

Cinema Performance Data:

- Historical data on ticket sales, occupancy rates, and show timings.
- Customer engagement metrics across different quarters and regions.
- Performance logs highlighting variations in audience behavior during weekends, weekdays, and seasonal periods.

General Data Handling:

- Data imported into Power BI for preprocessing, cleaning, and integration.
- Transformation applied to ensure consistency in KPIs such as revenue, utilization, and customer distribution.
- DAX measures created for trend identification and quarterly comparisons.



Innovation & Entrepreneurship Hub for Educated Rural Youth (SURE Trust – IERY)

Scope:

- Development of an interactive Power BI dashboard to analyze revenue, customer engagement, and regional performance.
- Visualization of quarterly performance, customer behavior patterns, and operational bottlenecks.
- Identification of seasonal demand trends for strategic planning.
- Insights to support pricing, scheduling, and marketing strategies.

Limitations:

- Insights are restricted to the available dataset; external market factors are not captured.
- Requires periodic data refresh for real-time accuracy.
- Advanced predictive modeling is not included.

2. Bank Customer Analysis Dashboard (Mini Project – Power BI)

Problem Statement

Banks often face challenges in understanding customer demographics, account balances and behavioral patterns, which are crucial for retention and targeted marketing.

Goal: Create a Power BI dashboard that visualizes customer distribution by region, gender, job classification, and balance levels, enabling data-driven customer insights and financial decision-making.

Data Sources

Bank Customer Data:

- Customer demographic details including gender, age, and job classification.
- Account-level information such as balance amounts, balance tiers (high, medium, low), and distribution by region.
- Records of new customer acquisition by month to analyze growth trends.



Innovation & Entrepreneurship Hub for Educated Rural Youth (SURE Trust – IERY)

General Data Handling:

- Raw data modeled and cleaned within Power BI for consistency.
- Creation of calculated columns and measures to derive insights such as balance by gender, customer count by region, and classification-wise segmentation.
- Interactive slicers (e.g., by quarter) applied for flexible analysis.

Scope:

- Creation of a Power BI dashboard to evaluate customer demographics and financial behavior.
- Analysis of customers by region, gender, age, job classification, and account balance levels.
- Identification of trends in new customer acquisition and balance distribution.
- Support for targeted banking strategies and customer engagement initiatives.

Limitations:

- Focused only on customer data; loan, credit risk, or service satisfaction are excluded.
- Predictive analytics and advanced segmentation not included.
- Dependent on accuracy and completeness of customer records provided.

3. Google Forms to MySQL Automation (SQL Project)

Problem Statement

Manual transfer of survey or form responses into databases caused inefficiencies, errors, and delays in reporting.

Goal: Implement an automated pipeline to capture and store Google Form responses directly into a MySQL database, ensuring real-time accuracy, reduced manual work, and instant data availability.

Data Sources

Google Forms Responses:

- Raw responses collected from participants through structured fields (e.g., names, categories, dates, preferences).
- Form inputs included both quantitative and categorical data suitable for analysis.



Innovation & Entrepreneurship Hub for Educated Rural Youth (SURE Trust – IERY)

MySQL Database:

- Served as the central repository where Google Form responses were automatically captured.
- Data stored in structured tables to ensure reliability and accuracy for reporting.
- SQL queries applied to extract, aggregate, and validate data for downstream analytics.

General Data Handling:

- Automated pipeline eliminated manual data entry and reduced human error.
- MySQL database integrated as the foundation for potential visualization tools (e.g., Power BI).

Scope:

- Automation of Google Form responses directly into a MySQL database.
- Elimination of manual errors and delays in form data processing.
- Real-time availability of data for analytics and reporting.
- Foundation for integration with BI dashboards for dynamic visualization.

Limitations:

- Designed specifically for Google Forms; other data sources need extra integration.
- Dependent on internet and database server stability.
- Limited to basic validation; no advanced transformation or enrichment applied.

Innovation Component

- **Automated Data Integration:** Seamless pipeline from Google Forms to MySQL ensures real-time data capture, minimizing manual effort and errors.
- **Insightful Visualization:** Interactive dashboards in Power BI transform raw customer and cinema data into intuitive visuals, helping stakeholders identify trends and KPIs effortlessly.
- **Strategy-Oriented Reporting:** The dashboards go beyond raw numbers, emphasizing insights into customer behavior, revenue trends, and operational performance that directly support business objectives.
- **Scalability and Adaptability:** The frameworks developed can be easily scaled across other domains — such as finance, HR, supply chain, or education — ensuring long-term usability and flexibility.



Project Objectives

Cinema Analytics Dashboard

Objectives & Goals:

1. Develop an interactive Power BI dashboard to analyze cinema performance across genres, languages, production houses, and regions.
2. Track box office revenue, critic ratings, and award counts to evaluate industry trends.
3. Provide insights into audience preferences and studio-level performance for strategic planning in film production and marketing.

Approach:

1. Collected and cleaned cinema datasets (revenue, ratings, awards) and structured them into a relational model.
2. Designed an interactive Power BI dashboard with genre, language, and production house insights.
3. Analyzed trends to identify top performers, audience preferences, and regional variations.

Expected Outcomes & Deliverables:

1. A comprehensive Power BI dashboard presenting KPIs such as revenue, ratings, award wins, and regional performance.
2. Analytical reports highlighting top-performing genres, successful production houses, and seasonal demand patterns.
3. Recommendations for optimizing production strategies, marketing focus, and investment decisions.

Bank Customer Analysis Dashboard

Objectives & Goals:

1. Design a Power BI dashboard to evaluate customer demographics, account balances, and job classifications.
2. Identify customer segments based on age, balance distribution, and acquisition patterns.
3. Provide insights to help banks improve customer retention, acquisition strategies, and profitability tracking.



Approach:

1. Imported and cleaned customer demographic and balance data for consistency.
2. Built a Power BI dashboard with visuals on age, gender, job classification, and balance distribution.
3. Derived insights to identify profitable segments and support customer retention strategies.

Expected Outcomes & Deliverables:

1. An interactive Power BI dashboard showcasing KPIs such as customer count, balance ranges, gender-wise distribution, and job segmentation.
2. Reports detailing high-value customer groups, regional balance patterns, and demographic insights.
3. Recommendations to strengthen customer engagement strategies and financial product targeting.

Google Forms to MySQL Automation

Objectives & Goals:

1. Automate the transfer of Google Form responses into a MySQL database for structured storage.
2. Eliminate delays and inaccuracies caused by manual data entry.
3. Ensure reliable, real-time data availability for analytics and reporting.

Approach:

1. Created a MySQL schema to store structured Google Form responses.
2. Automated the transfer of data from Google Forms (via Sheets) into MySQL in real time.
3. Validated entries and ensured scalability for analytics and integration with BI tools.

Expected Outcomes & Deliverables:

1. An automated pipeline linking Google Forms to MySQL for seamless response capture.
2. A centralized and up-to-date database ready for integration with BI tools.
3. Documentation of the workflow for scalability, monitoring, and future enhancements.



Methodology and Results

Methods/Tools used

Power BI – Dashboard Development (Cinema & Bank Projects)

- **Power BI (Dashboard Development):**
Main platform for creating interactive dashboards that transform raw data into business insights.
- **Power Query (Data Cleaning & Transformation):**
Applied to clean, format, and standardize datasets, ensuring accuracy and consistency.
- **DAX – Data Analysis Expressions:**
Used for custom measures, calculated columns, and KPIs tailored to cinema and banking data.
- **Data Modeling :**
Established logical relationships among tables for smooth drill-down analysis from summary to detail.
- **Visualization Techniques :**
Designed dynamic charts, slicers, and drill-through reports to highlight patterns, comparisons, and actionable insights.
- **ETL Process (Extract, Transform, Load):**
Implemented to extract raw data, refine it, and load it into structured models for analysis.

SQL Automation

- **Google Forms:**
Served as the primary platform for collecting structured and unstructured responses.
- **Pabbly Connect:**
Automated the data transfer pipeline between Google Forms (via Sheets) and MySQL.
- **MySQL Database :**
Central repository for storing responses in relational tables with consistent formatting.
- **phpMyAdmin:**
Web-based interface for managing, querying, and monitoring the MySQL database.
- **SQL Queries:**
Applied for validation (duplicates, missing values), aggregation, filtering, and trend analysis.
- **Data Structuring & Validation:**
Designed normalized tables in MySQL and enforced integrity checks for reliable analytics.



Data Collection Approach

For the Cinema Analytics Dashboard, structured datasets covering cinema performance were used, including box office revenue, ratings, award counts, genres, languages, and production houses. The raw data, sourced primarily from Excel and CSV files, was imported into Power BI, where it underwent cleaning and transformation using Power Query to resolve missing values, duplicates, and formatting inconsistencies. A relational model was then designed, connecting fact tables e.g., revenue, ratings with dimension tables e.g., genres, regions, production houses. DAX measures were applied to create KPIs such as total revenue and average ratings, while the dashboard provided interactive features like slicers and drill-throughs to explore trends in audience preferences and regional performance. This ensured both analytical depth and data accuracy.

For the Bank Customer Analysis Dashboard, customer-level data containing attributes such as ID, gender, age, job category, and balance served as the primary input. Data was sourced from Excel/CSV files and processed in Power Query to clean, standardize, and remove inconsistencies. Once prepared, the dataset was structured into a relational model, enabling segmentation and detailed drill-down analysis. DAX was used to calculate KPIs such as customer counts, average balances, and demographic distributions. The final dashboard delivered interactive insights into customer segmentation, highlighting high-value groups, spending trends, and balance variations across demographics. This structured approach ensured reliable outputs and actionable findings for decision-making in the banking context.

For the Google Forms to MySQL Automation, data collection began with form submissions, where participants entered structured responses like text, multiple-choice, dates, etc. through Google Forms. Using Pabbly Connect as middleware, responses were automatically transferred in real time to a MySQL database, removing manual intervention. A relational schema was designed in MySQL to store responses efficiently, after which SQL queries were applied for data cleaning, validation, and analysis. This included handling duplicates, correcting inconsistencies, and applying aggregation and filtering to uncover patterns. The pipeline ensured real-time data availability, minimized errors, and maintained a scalable structure for future reporting and analytics, making the process both efficient and reliable.



Project Architecture

Power BI Dashboard On CineMetrics and Bank Customer's Analysis :

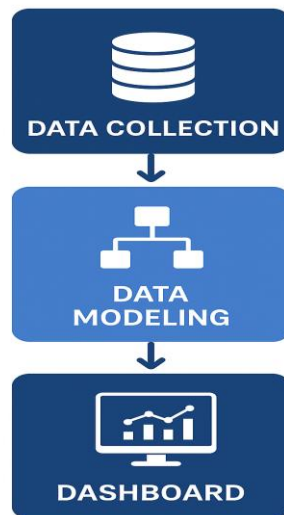


Figure -1 Power BI System Architecture

1) Data Collection

- Bank Customer's AnalysisDashboard: Data was collected from customer demographic records, account details, transaction histories, loan/credit information, and churn indicators.
- CineMetrics Dashboard: Data was sourced from cinema ticketing logs, showtime schedules, seat occupancy rates, and customer feedback/rating datasets.

2) Data Modeling

- Bank Customers Dashboard: Data was cleaned and structured into tables .Relationships were established and DAX measures were created for KPIs like customer retention, average balance, and loan repayment trends.
- CineMetrics Dashboard: Data was transformed into models. Measures such as revenue per seat, occupancy percentage, and performance by showtime were defined.

3) Dashboard

- Bank Customers Dashboard: Final visuals included KPIs, demographic analysis, financial insights, and predictive indicators for churn.
- Cinemetrics Dashboard: The dashboard displayed, trend lines, showtime comparisons and category insights.



Automation of Google Form Responses to MySQL Database :

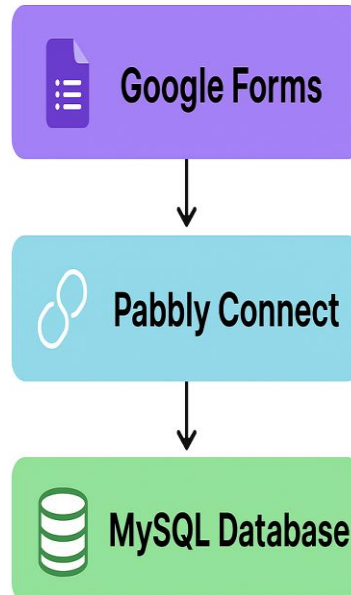


Figure- 2 SQL System Architecture

1) Google Forms

Google Forms was utilized as the primary data collection tool, providing an intuitive interface for users to submit structured responses. It supported multiple input types such as text fields, multiple-choice options, and date entries, ensuring standardized data gathering. These responses formed the raw dataset for the project, serving as the foundation for further automation, integration, and analysis.

2) Pabbly Connect

Pabbly Connect functioned as the automation middleware between Google Forms and the MySQL database. Each time a new response was submitted, Pabbly captured it in real time and seamlessly transferred the data into the designated SQL table. This automation eliminated manual intervention, reduced errors, and ensured that data was instantly available for storage and subsequent analysis.

3) MySQL Database

The MySQL database acted as the central repository, storing all Google Form responses in a structured table format (*form_responses*). Its relational schema design ensured consistency, accuracy, and scalability for managing large volumes of submissions. By leveraging MySQL, the project enabled efficient data organization, reliable retrieval, and a solid foundation for downstream analysis and reporting.



Final Major project working screenshots

A Power BI Dashboard on Bank Customer's Analysis (Mini Project) :

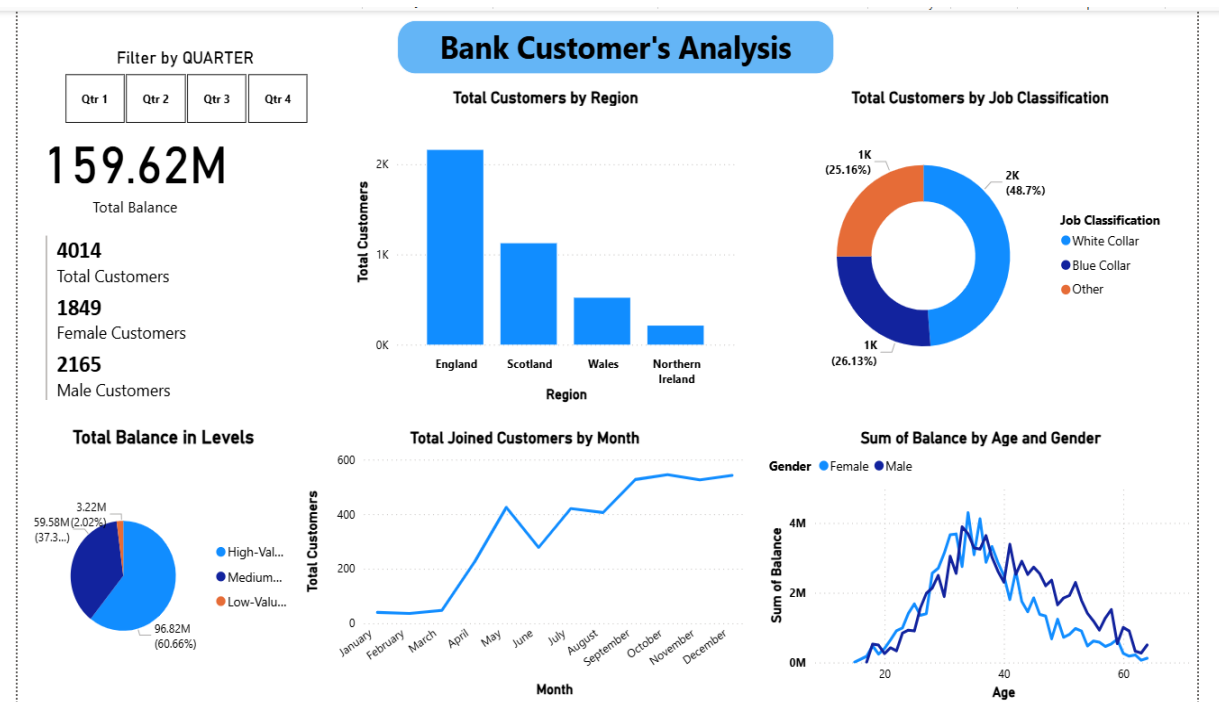


Figure 3– Bank Customer's Analysis Dashboard

The “Bank Customer’s Analysis dashboard” is designed to analyze bank customer data with a focus on demographics, service usage, and regional performance. It provides a structured view of customer profiles, including age groups, gender distribution, and occupations, helping identify which segments form the bank’s core customer base.

In addition, the dashboard tracks **engagement with banking products** such as loans, deposits, and cards, showing which services are widely adopted and which ones may need promotional strategies. By comparing **financial performance across regions**, the dashboard also highlights variations in deposits, revenues, and customer engagement at the state or branch level.

Overall, the mini project offers a **comprehensive yet simple tool** to understand customer demographics, product adoption trends, and regional performance. It supports decision-making by showing where the bank is strong, where improvements are needed, and how customer behavior influences overall growth.



A Power BI Dashboard on CineMetrics : A Movie Analytics Dashboard (Major Project) :

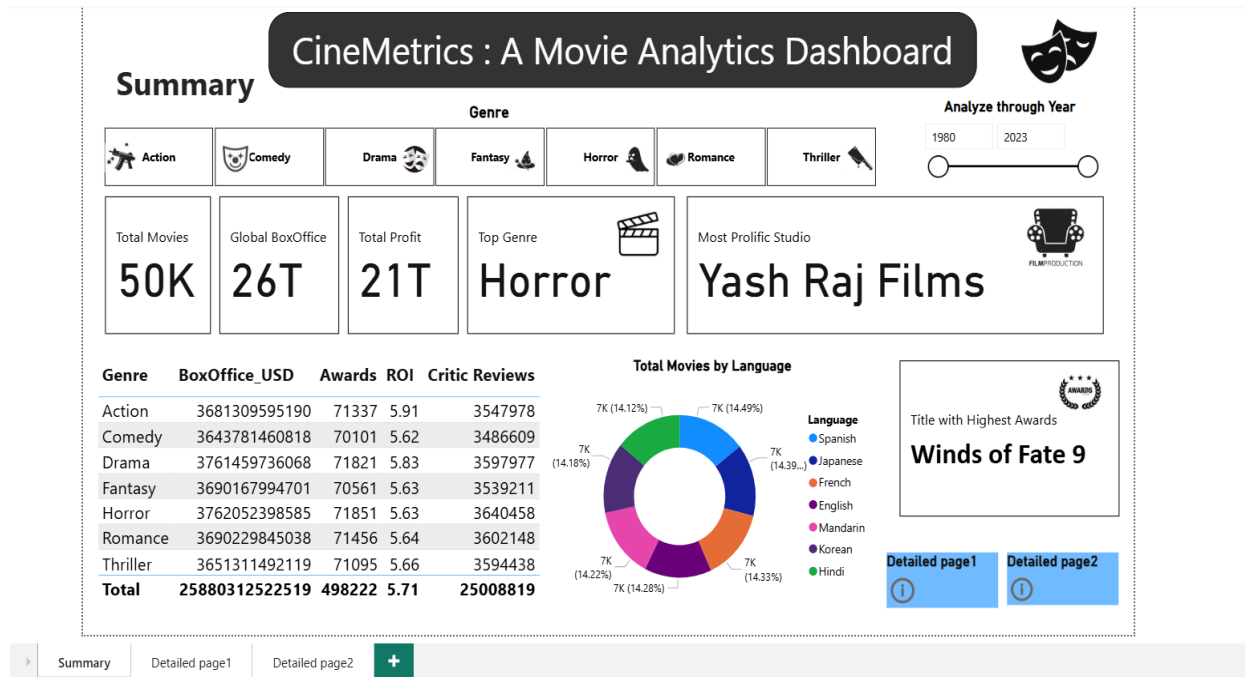


Figure 4– CineMetrics Dashboard Summary page

Overall Cinema Performance

The first section of the dashboard functions as the control center for cinema operations, giving management an instant snapshot of both financial outcomes and operational efficiency. It highlights critical KPIs such as total revenue generated, average seat occupancy rates, and the number of shows conducted during the selected time. These metrics are strategically chosen because they directly reflect the cinema's financial viability and its ability to attract audiences.

Supporting visuals such as quarterly revenue trend lines provide a temporal view, helping managers detect whether revenues are growing steadily or facing declines. Similarly, seat utilization charts display the percentage of available seats actually occupied, indicating how effectively resources are being used. In addition, this section highlights seasonal fluctuations in demand. Identifying these fluctuations allows managers to optimize show scheduling, marketing spend, and staffing requirements.

Overall, "Summary page" ensures that decision-makers are always aware of the cinema's financial health, while also flagging early signs of underperformance that may require operational adjustments.

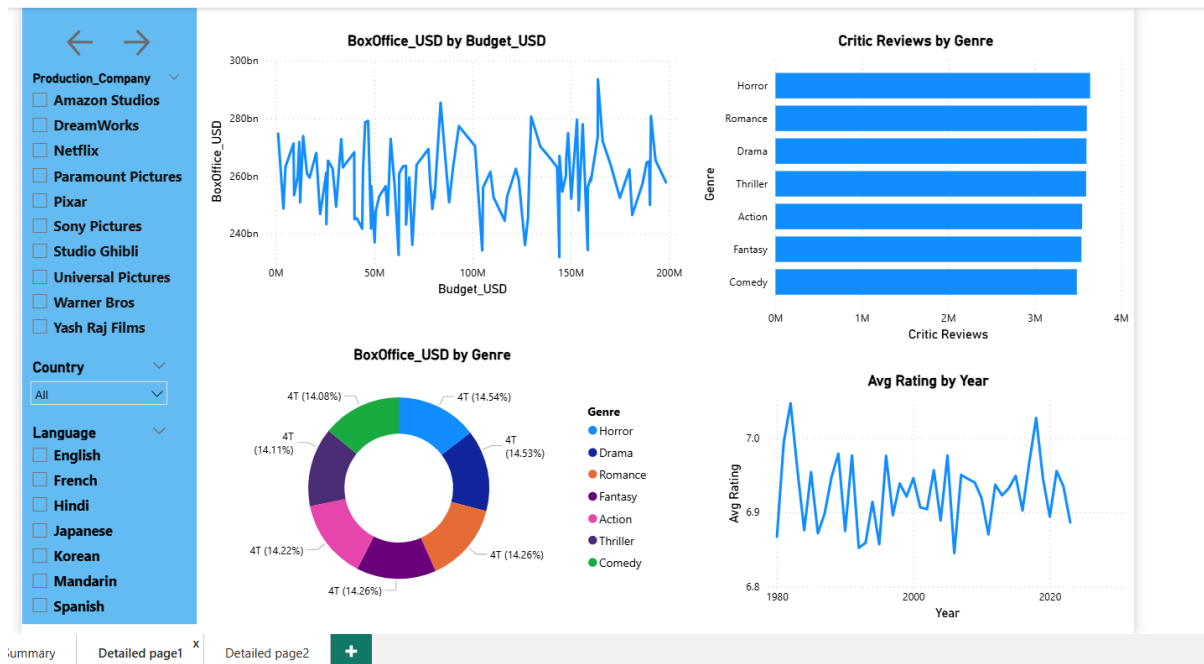


Figure 5– CineMetrics – Detailed page1

Audience Ratings and Showtime Analysis

The “Detailed page1” section shifts the focus from revenue to the audience experience, a critical driver of long-term success. Here, average customer ratings are monitored over time monthly or quarterly to evaluate satisfaction levels. This is especially important for understanding the impact of new releases, pricing changes, seating upgrades, or service improvements. A rise or drop in ratings immediately signals whether audiences are responding positively or negatively to operational strategies, allowing management to take corrective measures quickly.

In addition to ratings, this view offers a time-slot-based analysis, comparing audience turnout across morning, afternoon, evening, and late-night shows. The visuals often reveal that certain slots, such as evenings, consistently outperform others due to factors like customer convenience, work schedules, or leisure habits. By identifying these patterns, managers can make data-backed scheduling decisions, such as increasing the number of evening shows or offering discounts for underperforming slots like mornings.

This analysis is also valuable for ticket pricing and promotional campaigns. For example, premium pricing can be applied during peak evening shows, while student offers or family bundles could be promoted during less crowded times.

Overall, Dashboard View 2 provides actionable insights that not only improve profitability but also enhance customer satisfaction by aligning showtimes and experiences with audience preferences.

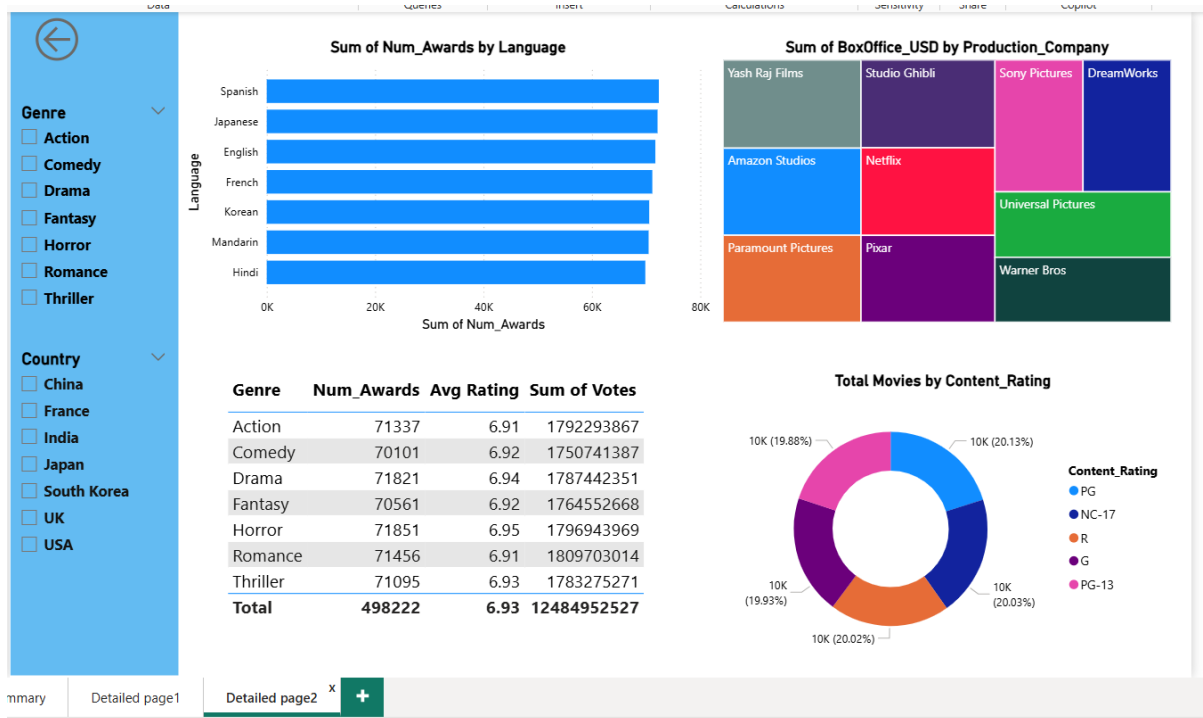


Figure 6– CineMetrics – Detailed Page2

Category and Regional Insights

The “Detailed Page2” section dives deeper into the content and market-level performance drivers of cinema operations. Revenue is broken down by movie genres, enabling management to see which categories resonate most with audiences. This helps cinema operators tailor their content acquisition strategy for instance, increasing the number of action or comedy films if they consistently outperform dramas. Similarly, language-based comparisons reveal the linguistic segments driving sales.

A second layer of this view involves regional performance mapping, often represented through heat maps or geographic visuals. These maps show which areas contribute the most to occupancy and revenue, helping management spot both strong-performing clusters and underpenetrated regions. By combining genre, language, and regional insights, this section provides a micro-level view of audience behavior that complements the broader KPIs from Dashboard View 1. It ensures that decision-makers not only understand how much revenue is being generated, but also where and why that revenue is coming from.

Summary

These three dashboards together form a complete analytics system for cinema performance. They cover revenue trends, customer satisfaction, and content/region insights, balancing both strategic and detailed perspectives. This enables data-driven decisions that optimize operations, finances, and audience engagement.



Automation of Forms to MySQL DB (SQL Project)

The screenshot shows a Google Form titled "Student Details" in a web browser. The browser's address bar displays a URL ending in "/viewform". The form includes a header with the title "Student Details", a user email address "akshithrammuske.g18sqlpowerbi@gmail.com" with a "Switch accounts" link, and a "Not shared" status. A red asterisk indicates required questions. The form contains several input fields: "Name", "Email", and "Phone number", each with a "Your answer" label. The "Department" field is a multiple-choice question with radio buttons for "CSE", "CSE (Emerging Technology)", "ECE", "EEE", "CIVIL", and "MECHANICAL". The "Year" field is a multiple-choice question with radio buttons for "First", "Second", "Third", and "Fourth". The "Project Status" field is a multiple-choice question with radio buttons for "Completed" and "Not completed". At the bottom, there are "Submit" and "Clear form" buttons.

Figure 7– Google Forms for taking User responses

A Google Form was designed as the primary tool for collecting structured user responses in a simple and accessible manner. It allowed inputs such as text, multiple-choice, and date fields, ensuring standardized data entry across all submissions.

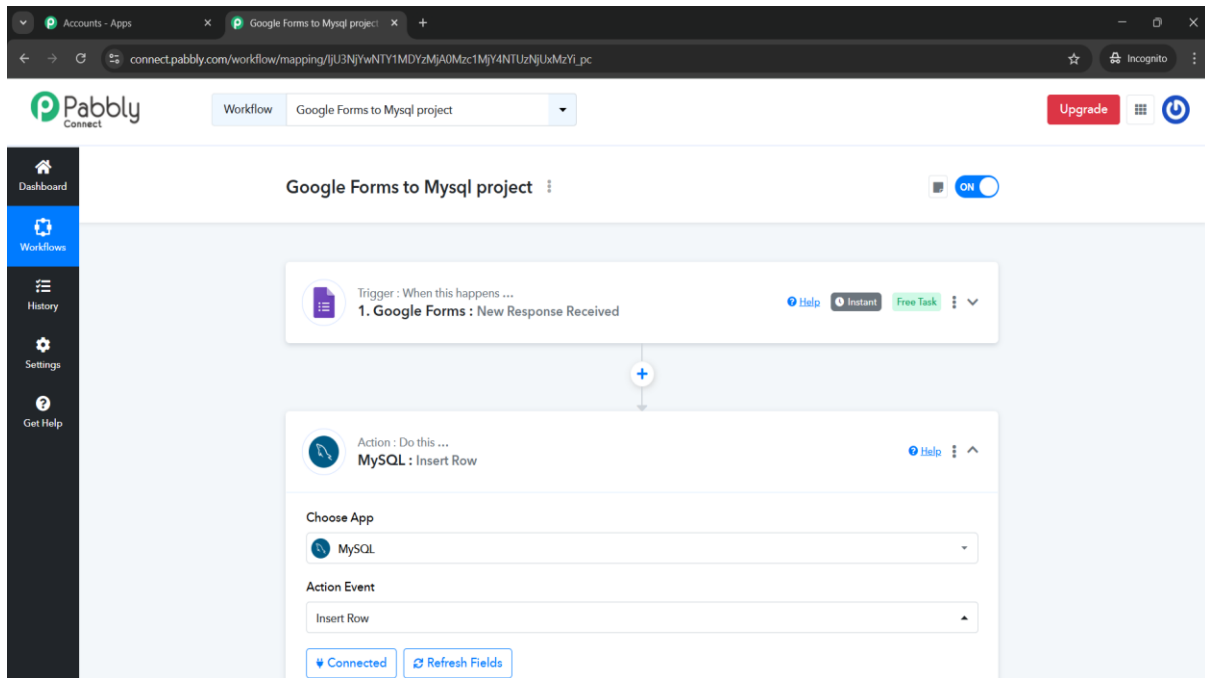


Figure 8– Connecting Pabbly Workflow to MySQL workbench

A Pabbly workflow was configured to automatically capture responses from Google Forms and transfer them to MySQL.

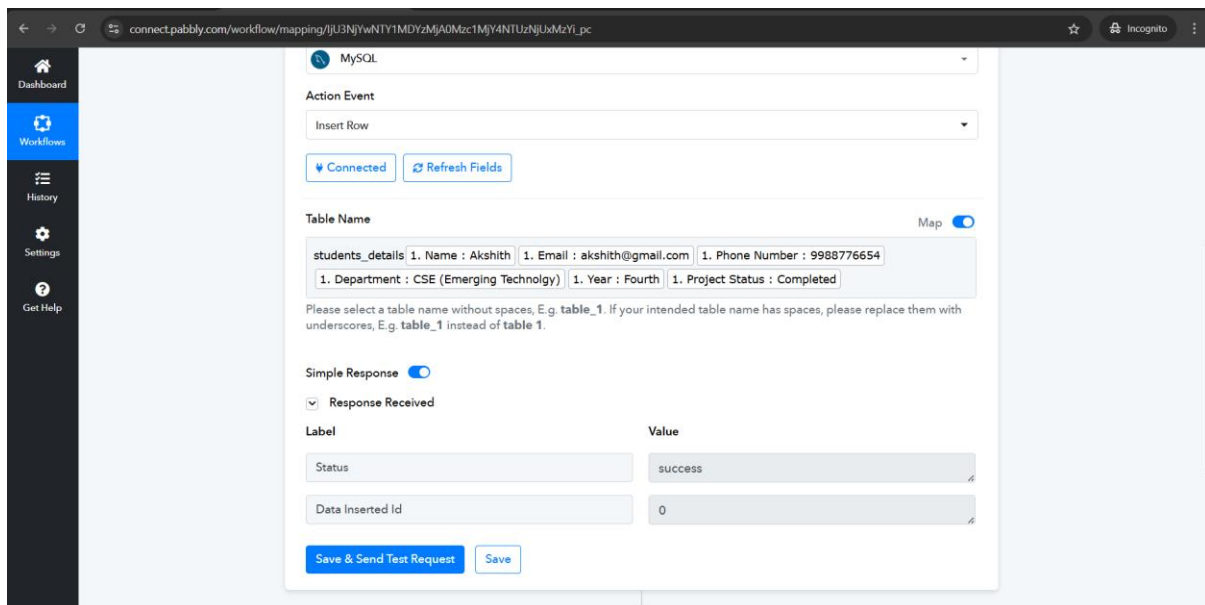


Figure 9– Data being sent from Pabbly Connect to MySQL

Data from Google Forms was automatically captured by Pabbly Connect in real time. It was then transferred into MySQL tables, ensuring structured and consistent storage for analysis.



The screenshot shows the phpMyAdmin web interface. The browser address bar displays the URL: `phpmyadmin.co/index.php?db=sq12798405&table=students_details&target=sq1.php`. The interface includes a sidebar with 'Recent' and 'Favorites' sections, listing 'information_schema' and 'sq12798405'. The main content area shows a table named 'students_details' with the following data:

Name	Email	Phone_number	Department	Year	Project_Status
Akshith	akshith@gmail.com	9988776654	CSE (Emerging Technology)	Fourth	Completed
Premdev	premddev123@gmail.com	8674637825	MECHANICAL	Fourth	Not completed
Kiran Reddy	kiran123@gmail.com	9087654321	EEE	Third	Not completed
Prabhu	prabhu23@gmail.com	9323478976	ECE	First	Completed
Jaya	anjayya34@gmail.com	9666354897	EEE	Fourth	Completed
Archana	archusweety@gmail.com	6302498358	CIVIL	Second	Not completed
Venkatesh	venky66@gmail.com	7812983546	CSE	First	Completed
Jaya	jayadamer@gmail.com	6304543869	CSE	Fourth	Not completed
K.VIDHYASAGAR	Sagar123@gmail.com	6218734908	ECE	Fourth	Completed
chameil	chameil7373@gmail.com	9125532563	CSE (Emerging Technology)	Fourth	Completed

Below the table, there are options to 'Show all', 'Number of rows' (set to 25), and a 'Filter rows' search box. At the bottom, there is a 'Query results operations' section with links for 'Print', 'Copy to clipboard', 'Export', 'Display chart', and 'Create view'.

Figure 10- Data stored in Integrated MySQL Database

The submitted responses were securely stored in the **integrated MySQL database** in a structured format. This centralized storage ensured scalability, accuracy, and easy retrieval for further analysis.

Automation of Forms to MYSQL Database

The SQL project automated the transfer of responses from Google Forms to MySQL, eliminating manual data entry. Using Pabbly Connect, responses were captured in real time and stored in relational tables within MySQL.

This ensured data accuracy, consistency, and scalability, while minimizing errors and delays. The integrated system provided a centralized repository for reliable querying, reporting, and future analytics.

Project GitHub Link:

<https://github.com/Akshithram/SQL-POWER-BI-Project---SURE>



Learning and Reflection

Insights Gained

- **Customer Behavior Patterns:**
Cinema analysis revealed how weekends, holidays, and blockbuster releases significantly boost audience turnout, while the bank customer dashboard showed how demographics and occupations shape financial product adoption.
- **Regional & Segment Preferences:**
Regional differences are clear, certain states contribute more strongly in banking services, while specific regions drive higher cinema occupancy. This highlights the need for localized strategies.
- **Value-Driven Choices:**
Across both cinema and banking, premium segments stand out audiences prefer premium screenings, and high-income customers engage more with advanced financial services.
- **Promotions & Offers Matter:**
Discounts, offers, and tailored campaigns shift customer behavior noticeably, improving weekday occupancy in cinemas and boosting product subscriptions in banking.
- **Data-Driven Scheduling & Planning:** Show scheduling, loan approvals, or promotional campaigns are more effective when aligned with customer timing and seasonal demand trends.
- **Automation Advantage:**
The SQL project proved how automation (Google Forms with Pabbly and MySQL) eliminates manual entry, reduces errors, and ensures data is instantly available for reporting.
- **Structured Storage:**
MySQL served as a reliable backbone, organizing raw form responses into clean, structured tables for easy querying and reporting.
- **Scalability & Reliability:**
The SQL pipeline demonstrated the ability to handle growing datasets efficiently, showing potential for future, larger-scale applications.
- **Query-Powered Insights:**
With SQL queries, patterns like response frequencies, data validation, and trend identification became quick and reliable, proving the strength of structured analysis.
- **Data Storytelling:**
Power BI dashboards simplified complex datasets into intuitive visuals, ensuring that even non-technical stakeholders could understand and act on insights.



Key Takeaways

- **Timing Defines Success:**
Just as cinema audiences peak on weekends and festive months, customer engagement in banking also follows seasonal and demographic rhythms. Aligning operations with these cycles is critical.
- **People Speak Through Data:**
Dashboards uncovered preferences - from evening cinema shows to popular banking services - that no survey could capture as clearly.
- **Experience and the Product:**
Whether audiences pay more for premium shows or customers adopt high-value financial products, people seek experiences that deliver more value.
- **Promotions Drive Action:**
Discounts on tickets or offers on financial services prove how sensitive consumer behavior is to well-timed incentives.
- **Automation achieves Efficiency:**
What once required manual entry is now fully automated - responses flow seamlessly into MySQL, ensuring both speed and accuracy.
- **From Raw Data to Clear Stories:**
Disorganized inputs from forms or transactional datasets were transformed into structured, visual narratives that guide decision-making.
- **Anchor:**
Returning cinema-goers and repeat banking customers highlight that long-term success relies not just on attracting new users but also on retaining existing ones.
- **Scalable & Future-Ready:**
The combined use of Power BI and SQL automation sets the foundation for larger, more complex datasets, making the projects adaptable to organizational growth.
- **Power of Queries and the Visualization:**
Together, SQL queries and Power BI storytelling turned static numbers into actionable business intelligence, bridging raw data with strategy.



Conclusion and Future Scope

Conclusion

The primary objective of the set of projects was to demonstrate how Power BI dashboards and SQL automation pipelines can transform raw, scattered data into meaningful, structured, and actionable insights. Each component focused on addressing real-world business challenges while showcasing the power of data visualization, automation, and integration. The aim was not only to present numbers but to build interactive narratives that support strategic decision-making.

The “CineMetrics : A Movie Analytics Dashboard” was designed to capture audience behavior across dimensions such as occupancy rates, showtime preferences, genre performance, and revenue trends. By providing stakeholders with both a high-level view of quarterly business health and a granular breakdown of customer satisfaction and demand, the dashboard established itself as a decision-support system for optimizing operations and marketing strategies.

The “Bank Customer’s Analysis Dashboard” focused on segmentation, analyzing demographics like age, gender, occupation, and income levels. It revealed how different groups contribute to financial product adoption, enabling banks to align their offerings with customer needs. By highlighting premium segments and usage patterns, the dashboard also showcased how financial institutions can strategically position their services for maximum impact.

The “Automation from Google Forms to MYSQL Database”, on the other hand, emphasized data pipeline efficiency. Through the integration of Google Forms, Pabbly Connect, and MySQL Workbench, it eliminated manual entry, reduced redundancy, and ensured real-time availability of structured data. SQL queries were then applied to clean, validate, and extract insights from the dataset, proving the value of automation in maintaining accuracy, consistency, and scalability.

Together, these projects achieved the combined goal of bridging the gap between raw data and actionable intelligence, creating a framework where dashboards provide clarity, automation ensures reliability, and queries unlock patterns hidden in everyday inputs.



Future Scope

The future scope of these projects lies in advancing from descriptive analytics to predictive and prescriptive intelligence. By integrating machine learning models with Power BI, businesses could forecast cinema occupancy patterns, predict customer churn in banking, or even anticipate seasonal spikes in demand, enabling proactive decision-making.

Another key direction is real-time data streaming. For cinemas, ticket bookings could flow instantly into dashboards; for banks, live transactional data could be monitored; and for SQL pipelines, responses could update in real time without delays. This shift would turn dashboards from reporting tools into live control centers for operational strategy.

In terms of scalability, these systems can be migrated to cloud-based environments such as Azure SQL or AWS RDS for greater accessibility, security, and collaborative use across teams. Combining MySQL with visualization platforms like Power BI or Tableau would ensure that even large, complex datasets are transformed into interactive, visual insights accessible to multiple stakeholders.

Future development could also include advanced SQL features such as triggers, stored procedures, and indexing to improve performance, while automation workflows can be extended to include CRM tools, ERP systems, or even social media feeds for a 360-degree business perspective.

Ultimately, these projects can evolve into enterprise-grade solutions where dashboards act as digital assistants - not only narrating historical trends but also offering recommendations, highlighting anomalies, and guiding managers toward smarter, faster, and more impactful decisions.