

**COMPETITIONS TRACKER DATA ANALYTICS DASHBOARD USING POWER BI**  
**POWER BI PROJECT REPORT**

Submitted by  
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*"Power BI is a powerful business analytics tool by Microsoft that allows users to visualize data, share insights, and make data-driven decisions. It offers interactive dashboards, reports, and advanced analytics for real-time data monitoring and analysis."*

## **ABSTRACT**

- The "Competitions Tracker" system is an advanced data analytics solution implemented using Microsoft Power BI to streamline the management and analysis of academic competitions within educational institutions.
- This comprehensive system tracks and visualizes data from multiple competition categories including inter-college, intra-college, inter-department, and intra-department events such as paper presentations, debugging competitions, technical quizzes, and project showcases.
- Through interactive dashboards and real-time analytics, the system processes complex competition data to provide actionable insights on participant engagement, performance metrics, and achievement tracking.
- The implementation utilizes Power BI's advanced features including DAX (Data Analysis Expressions), custom visualizations, and dynamic filtering capabilities to create an intuitive and responsive user interface.
- This solution addresses the critical challenges of competition management in academic institutions by automating data collection, standardizing reporting processes, and enabling data-driven decision-making for academic administrators.

## **PROBLEM DESCRIPTION**

Managing a large number of academic and technical competitions in an organized manner is a common challenge in colleges and universities. These competitions occur at various levels (intra-college, inter-department, etc.), and the manual handling of registrations, results, and rankings can become cumbersome. Without a structured system, it is difficult to track performance, winners, and participation across different competitions.

## **CHALLENGES**

- Handling multiple types of competitions (e.g., technical, paper presentations, debugging).
- Tracking participant data, scores, and rankings for different departments and institutions.
- Ensuring easy access to historical competition data for analysis and reporting.

## **APPROACH**

**Proposed Solution:** The solution is a "Competitions Tracker" system that will:

- Store and manage data for various competition types at different levels (e.g., inter-college, intra-department).
- Keep track of participant names, competition details, scores, rankings, and winners.
- Allow administrators and users to analyse competition results using tools like Power BI for insights and reporting.

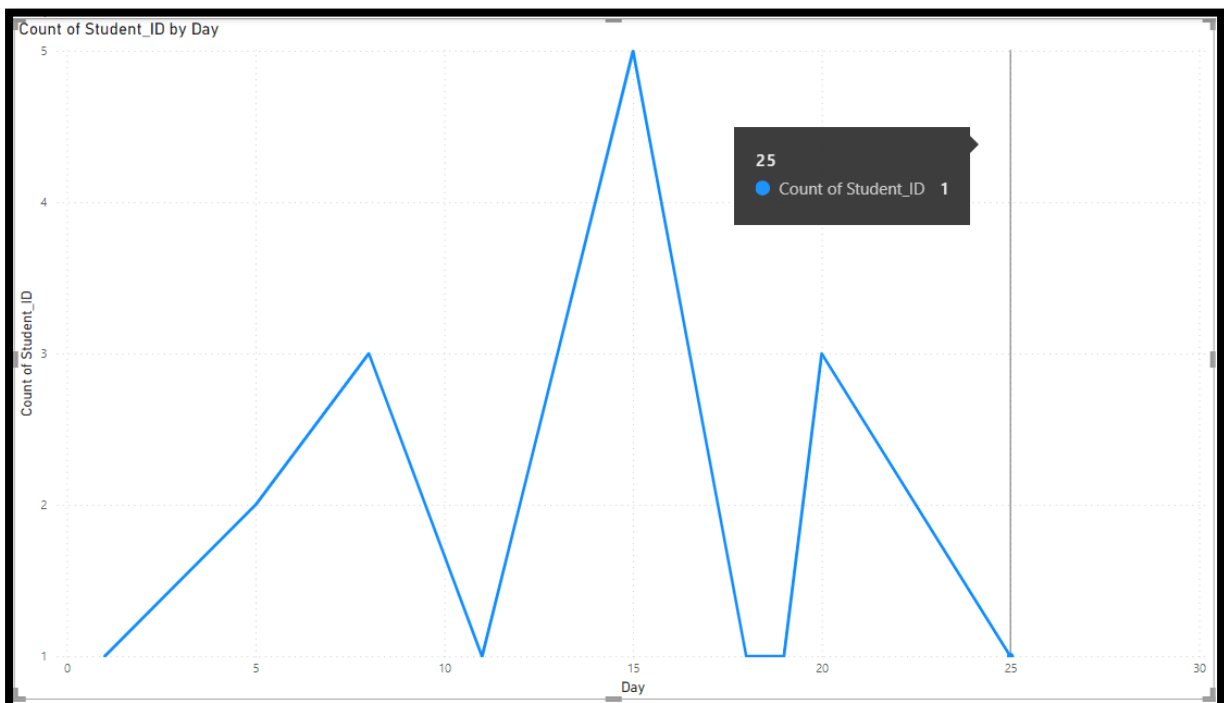
## 1. COMPETITION OVERVIEW DASHBOARD

- **Purpose:**

This dashboard provides a comprehensive overview of all competitions, including total participation, the number of competitions conducted, and prizes won. It allows users to monitor the overall performance and participation trends.

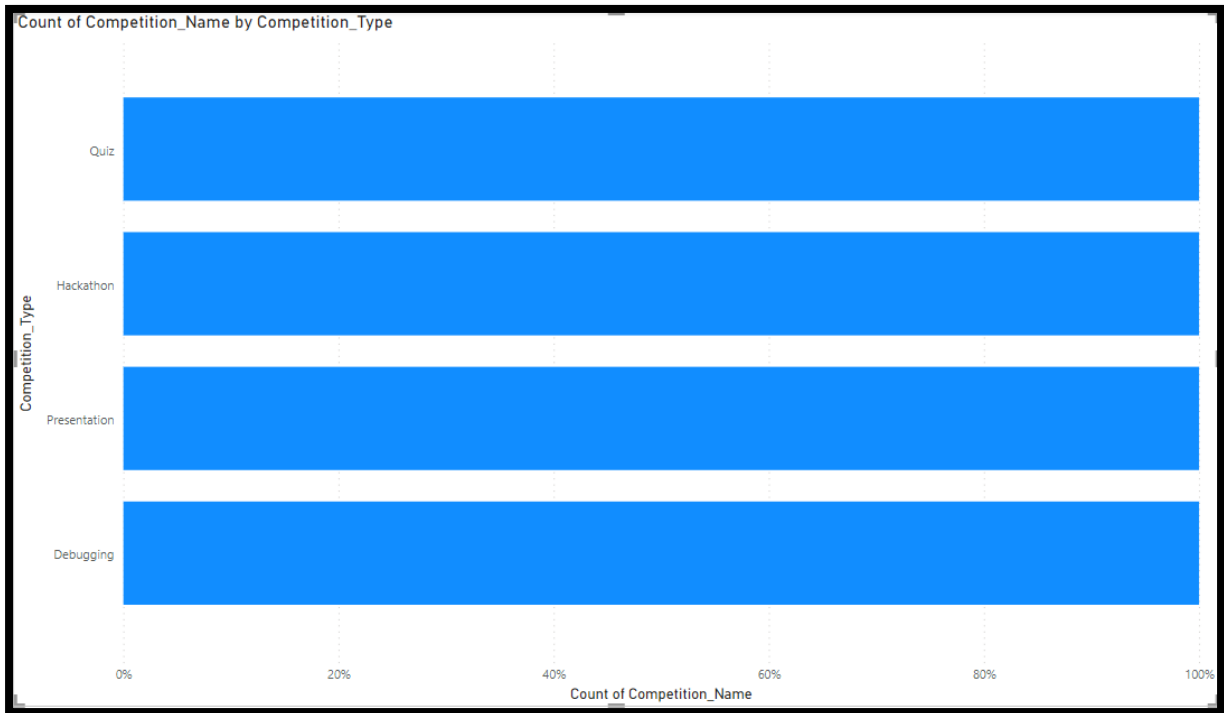
- **Key Visuals:**

- A **Line Chart** for participation trends, placing **Date** on the X-axis and a count of **Student\_ID** on the Y-axis



*Count of Students by Date*

- A **Bar Chart** to show the number of competitions by **Competition\_Type**.



*Count of Competition Name by Competition Type*

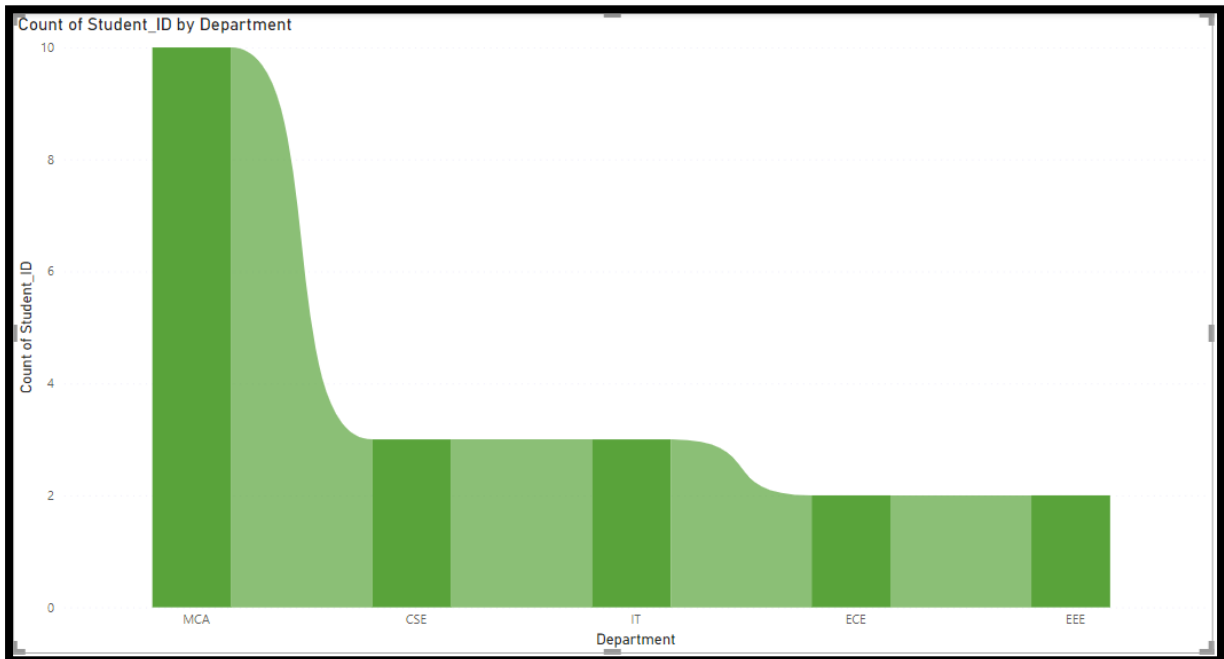
## 2. DEPARTMENT PERFORMANCE DASHBOARD

- **Purpose:**

This dashboard analyzes the performance of different departments in inter-department competitions, showing the participation and success rate of each department.

- **Key Visuals:**

- A **Ribbon Chart** to display participation and success rates by department.



*Success rate of departments*

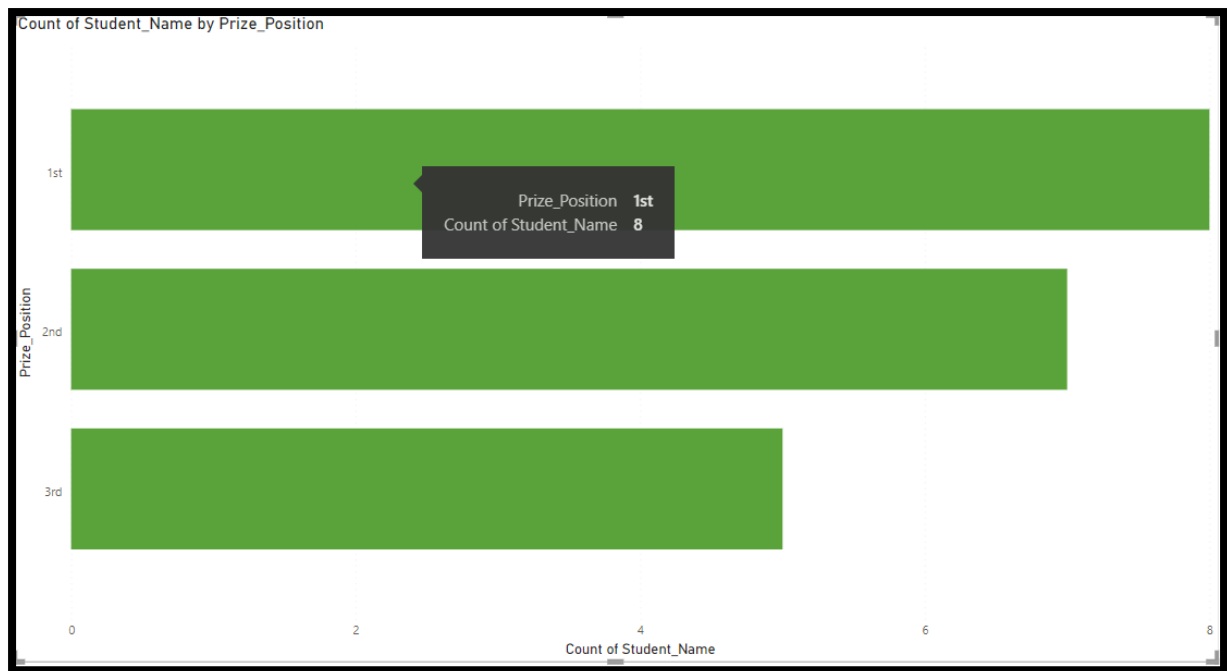
### 3. STUDENT PERFORMANCE DASHBOARD

- **Purpose:**

This dashboard tracks individual student participation, performance, and achievements across various competitions, helping administrators and staff identify top performers and consistent participants.

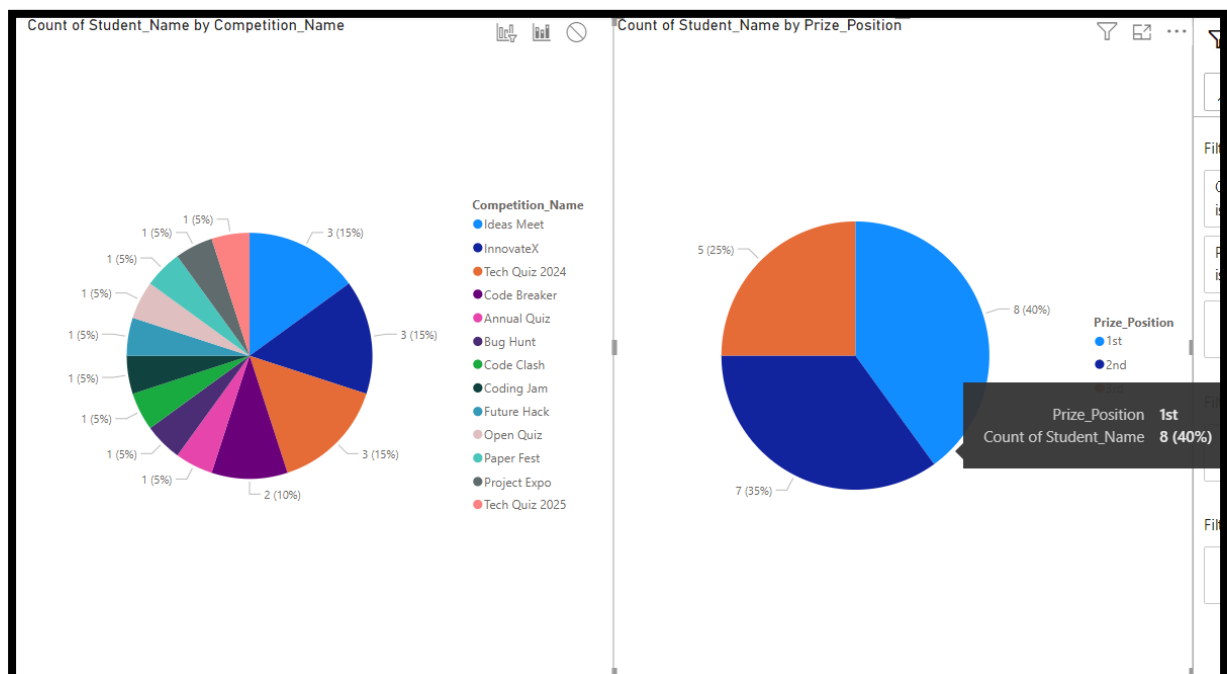
- **Key Visuals:**

- A **Bar Chart** to show top-performing students by the count of **Prize\_Position**.



*Count pf Students By Prize Winning Positions*

➤ A **Pie Chart** to categorize students (winners, participants).



*Category of Participants and Winners*

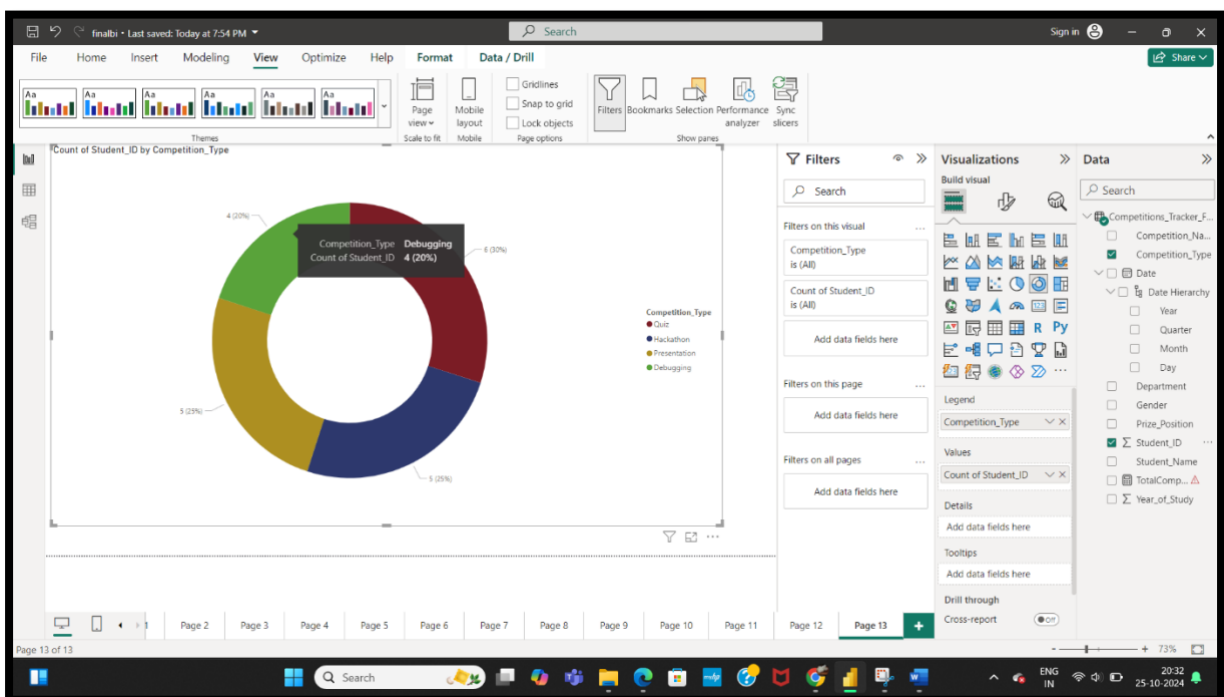
### 3. COMPETITION TYPE DASHBOARD

- **Purpose:**

This dashboard breaks down participation and outcomes by competition types (e.g., inter-department, intra-college, etc.), providing insights into which competition types attract the most participation and generate the most winners.

- **Key Visuals:**

➤ Donut Chart to visualize prize distribution by **Competition\_Type**.



*Competition Type*



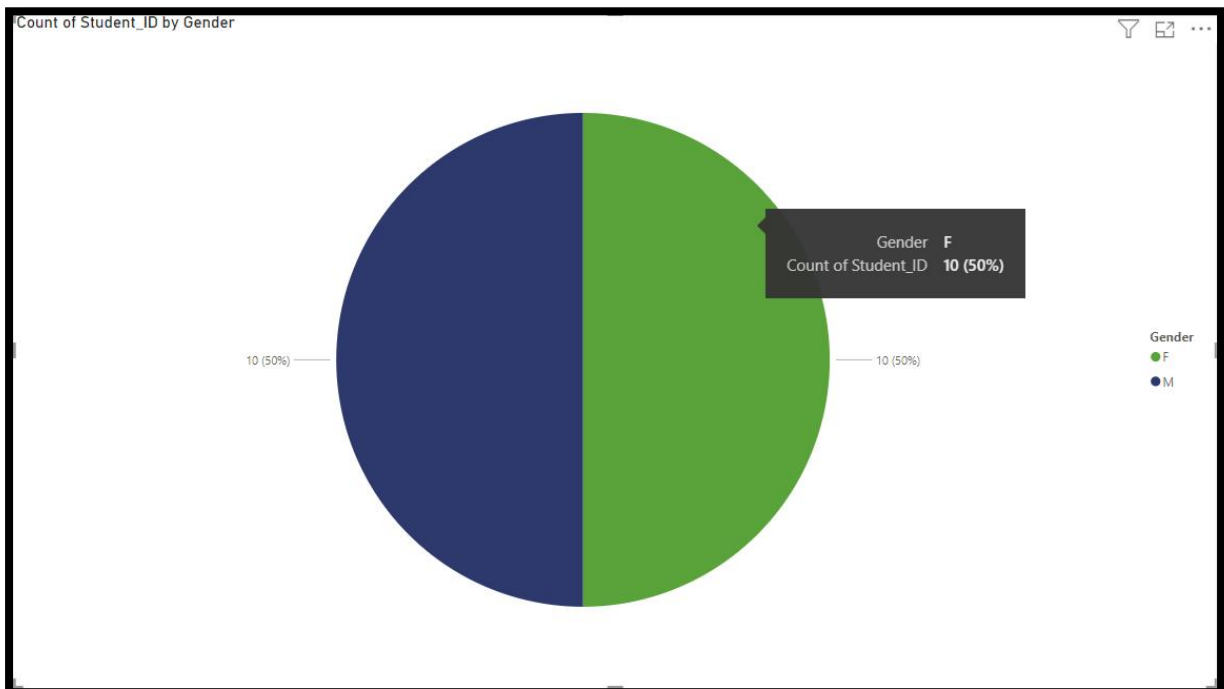
## 4. COMPETITION PARTICIPATION DEMOGRAPHICS DASHBOARD

- **Purpose:**

This dashboard provides insights into the demographics of participants, such as department affiliation, year of study, and gender, to understand the diversity and trends in participation.

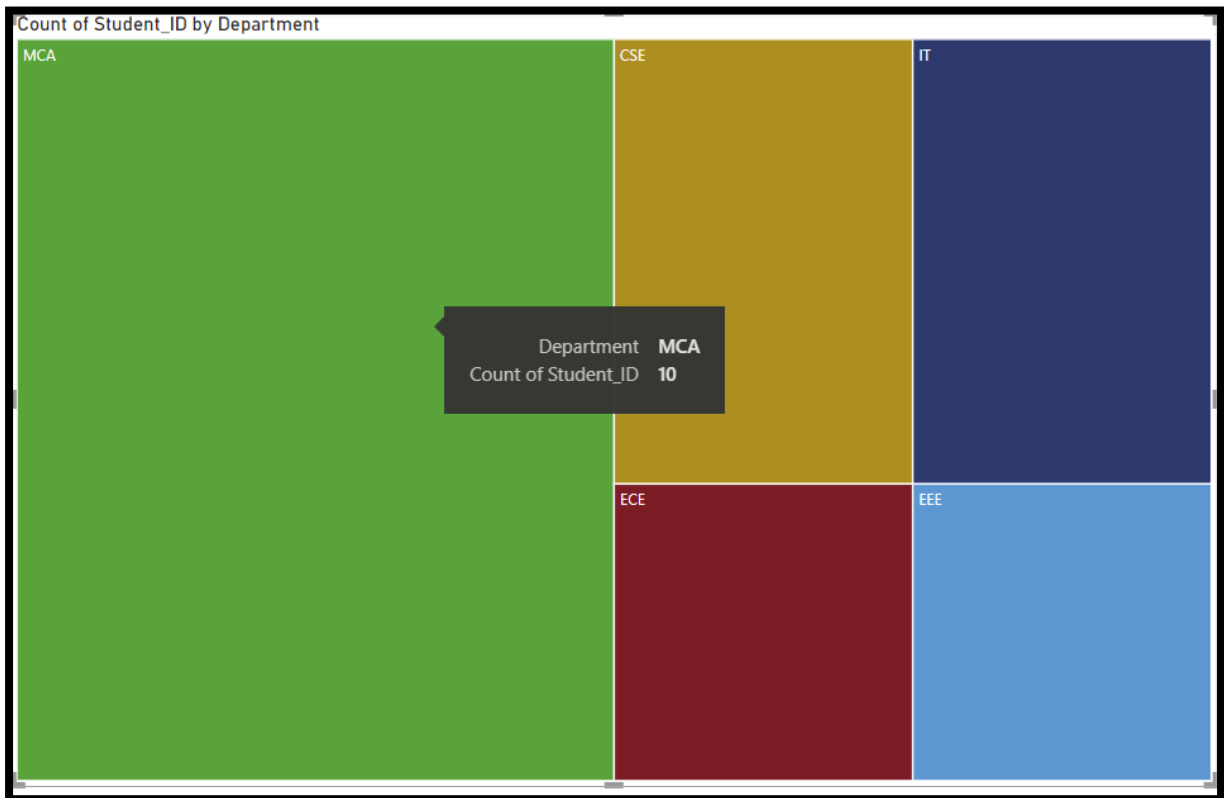
- **Key Visuals:**

- A **Pie Chart** to show **Gender** distribution in competitions.



*Gender Distribution of Participants*

- Tree map to show participation by **Department**



*Count of Participants by department*

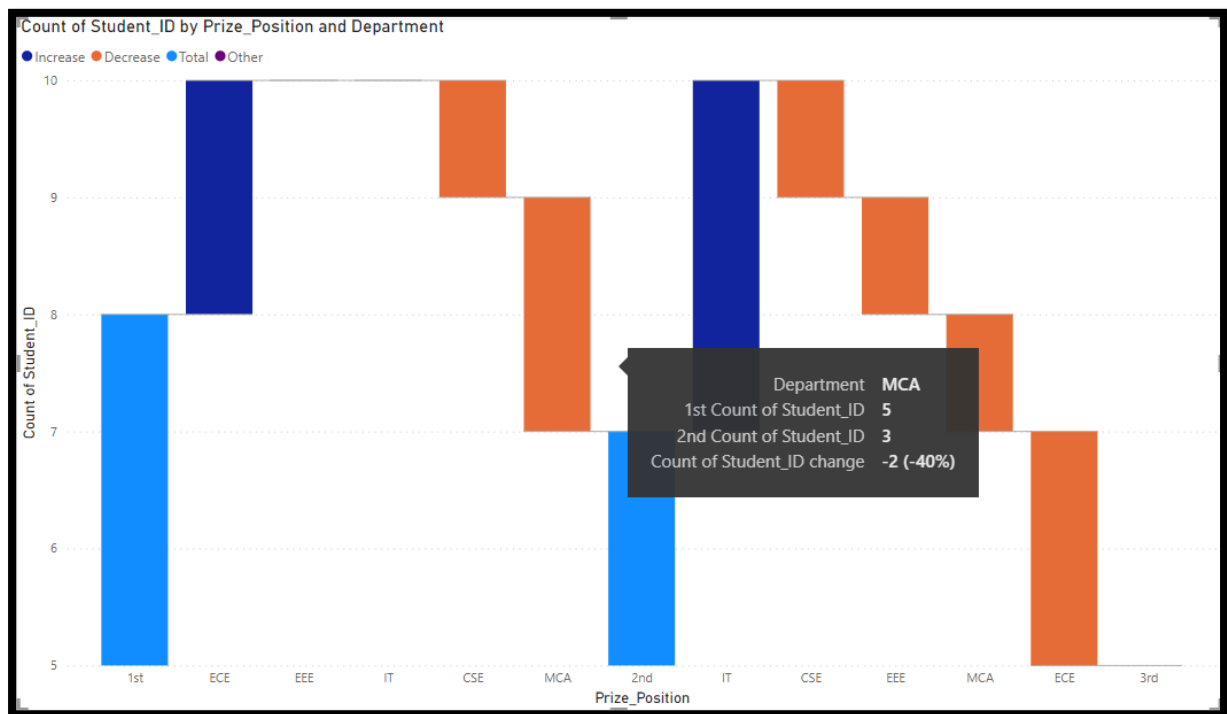
## 5. PRIZE WINNERS DASHBOARD

- **Purpose:**

This dashboard focuses on tracking prize winners and their performance over time, highlighting those who consistently win or perform well across various competitions.

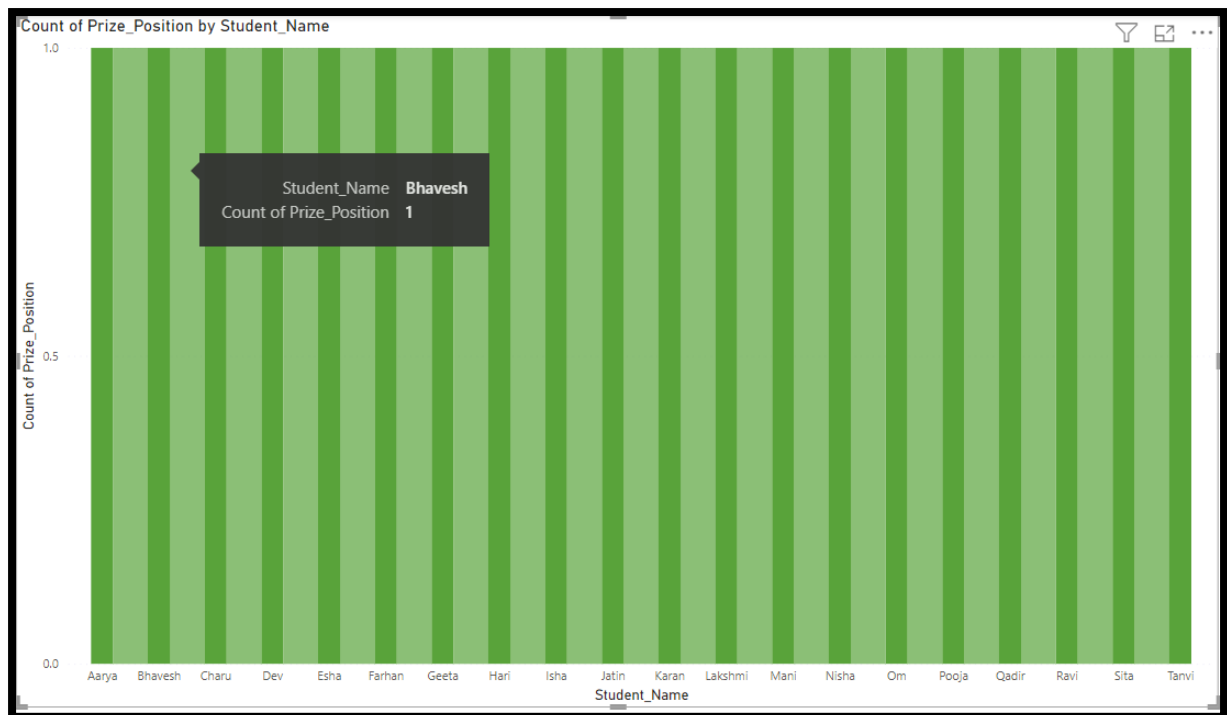
- **Key Visuals:**

- A **Water Fall Chart** to show trends in prizes awarded over all departments.



*Prize details of each department*

- A **Ribbon Chart** for students names, based on **Prize\_Position** counts.



*Prize Winners Name*

## 6. COMPETITION INSIGHTS DASHBOARD

- **Purpose:**

This dashboard provides deeper insights into various competition metrics, allowing users to drill down into specific events, departments, or students for more detailed analysis.

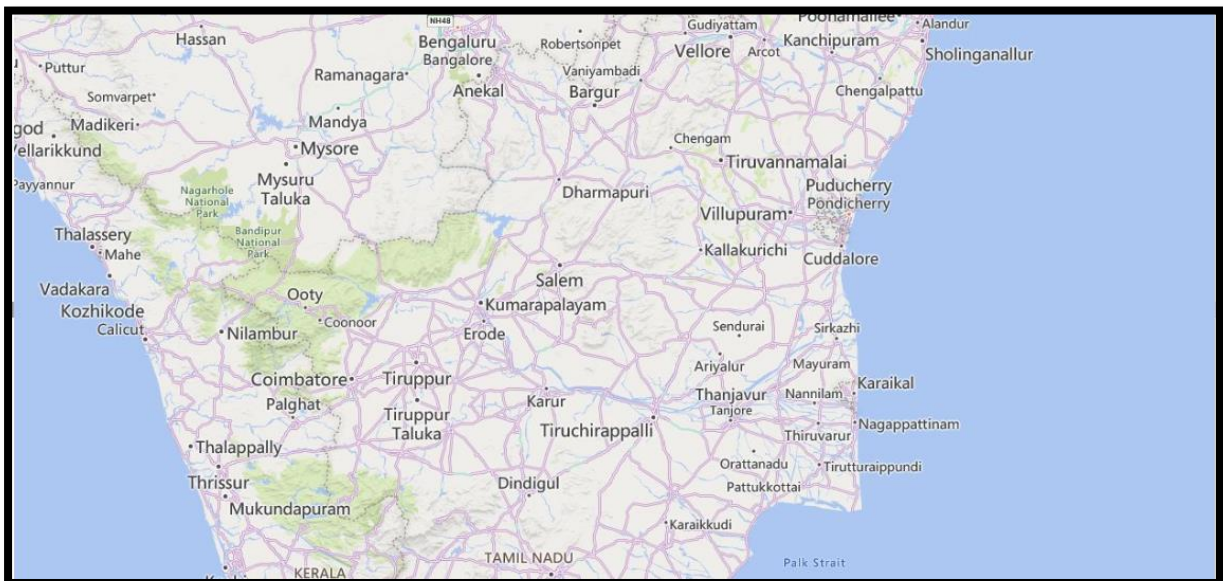
- **Key Visuals:**

- **Interactive Filters** for **Competition\_Type**, **Department**, and **Year\_of\_Study**.
- **Table chart** that dynamically update based on filter selections.

Department	Sum of Year_of_Study	Competition_Type	Department	Sum of Year_of_Study	Competition_Type
ECE	2	Debugging	MCA	2	Debugging
IT	3	Debugging	MCA	4	Hackathon
MCA	2	Debugging	MCA	9	Presentation
CSE	2	Hackathon	MCA	4	Quiz
EEE	2	Hackathon	<b>Total</b>	<b>19</b>	
IT	3	Hackathon			
MCA	4	Hackathon			
ECE	2	Presentation			
IT	3	Presentation			
MCA	9	Presentation			
CSE	2	Quiz			
EEE	1	Quiz			
MCA	4	Quiz			
<b>Total</b>	<b>39</b>				

#### *Filter MCA Department*

- Insight of Student Participation in a particular Department
- Map View for places where competitions held



#### *Places of Competitions held*

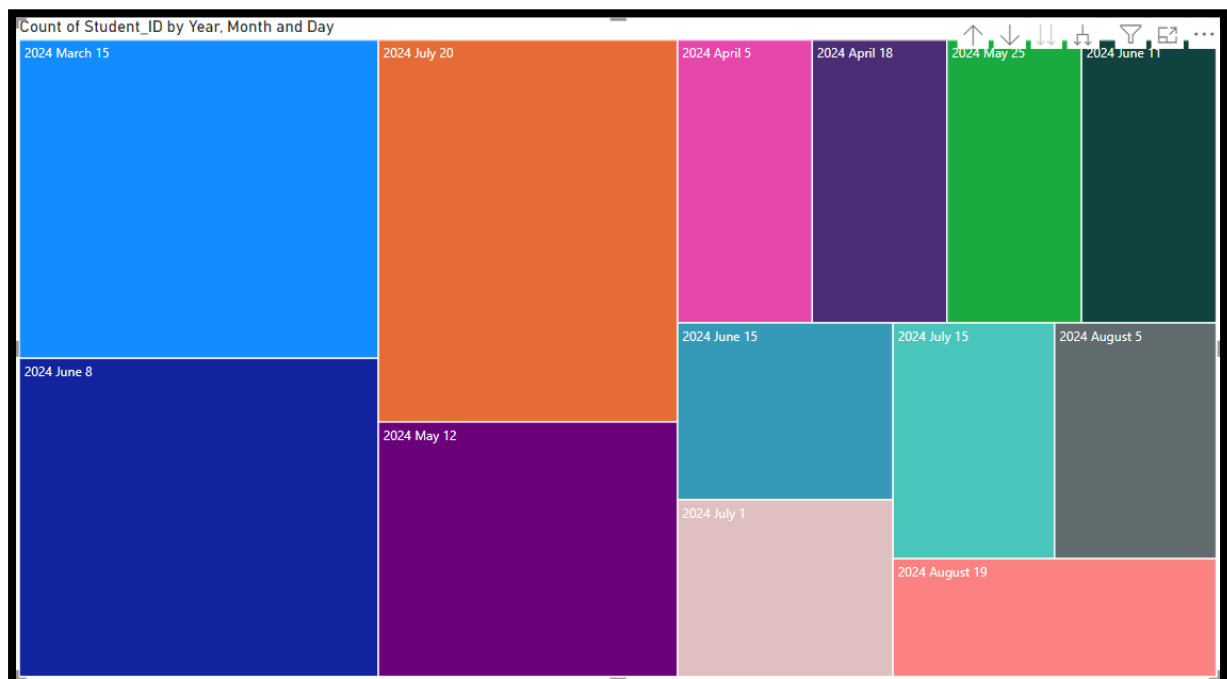
## 7. EVENT TIMELINE DASHBOARD

- **Purpose:**

This dashboard provides a timeline view of upcoming and past competitions, allowing users to keep track of competition schedules and important dates.

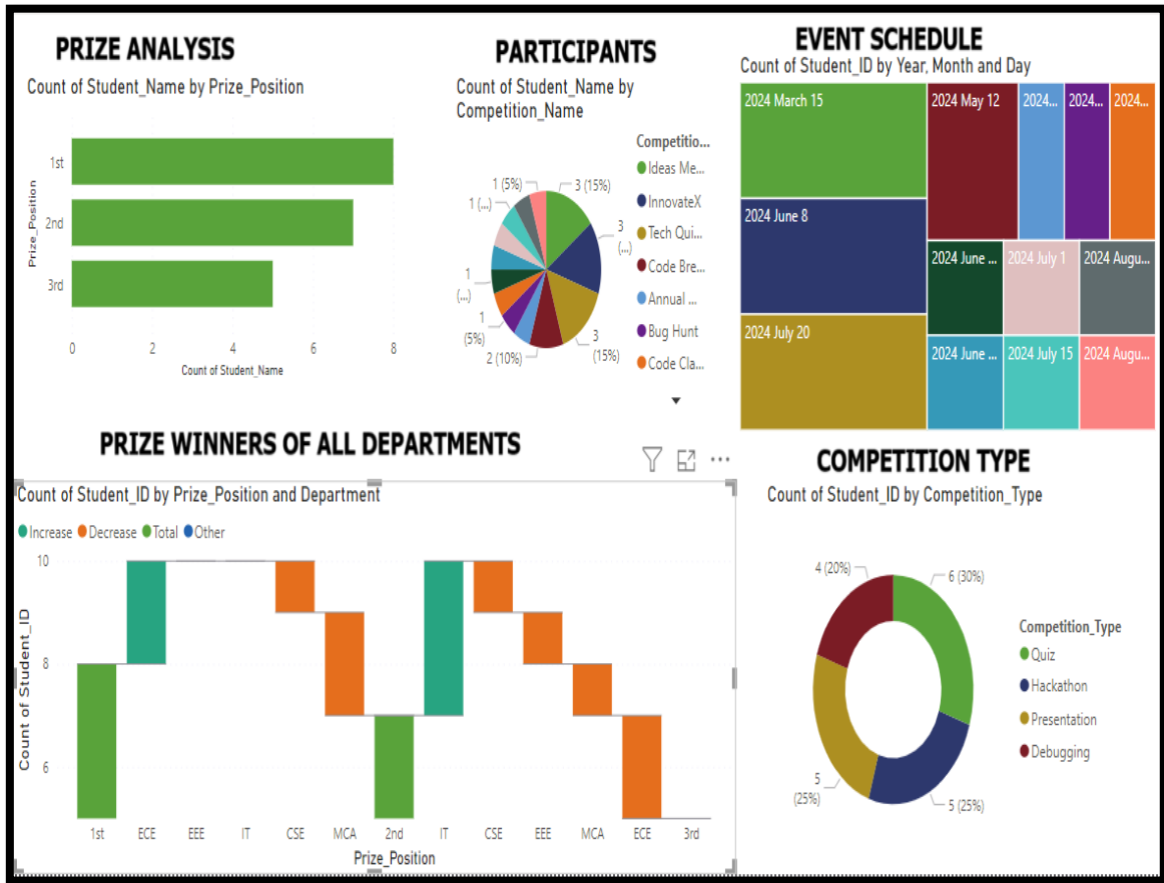
- **Key Visuals:**

- ✓ A **Tree Map** visual for event scheduling with **Date** on the timeline



*Tree Map for Event Scheduling*

# OVERALL DASHBOARD CREATION





## CONCLUSION

- ✓ The Competitions Tracker project using Power BI offers a comprehensive solution to manage and analyse various academic and technical competitions at colleges and universities. By providing real-time insights into participation, rankings, and winners across different levels (intra-college, inter-department, etc.), this tool streamlines the organization and evaluation process. The interactive dashboards allow administrators to efficiently track competition metrics, while also enabling students and staff to stay informed about ongoing and upcoming events. Through the implementation of this system, the management of competitions becomes more structured and data-driven, ultimately enhancing both student engagement and institutional performance.



