10 Minutes School Visualization Task Report (PowerBI)

Name: Golam Rabbani Salman

E-mail: grsalman769@gmail.com

Contact: 01324391604

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1. Data Modeling & Preparation Summary:

1.1 Data Preparation

- Dataset imported using Import Mode for better performance.
- Data types corrected (e.g., dates, numerics), and irrelevant/null values removed.
- Created a custom Date table (Dim_Date) to enable time-based filtering.
- Since student names were missing, random names were assigned to 300 users using Dim_User.

1.2 Model Structure & Enhancements:

- Designed a Star Schema linking Fact_exam_sessions to Dim_exams, Dim_user, and Dim_Date
- Added key calculated columns:
  - **Exam Time (Days):** Exam duration.
  - **Score:** Based on correct/wrong answers and negative marking from Dim_exams.
  - **Passed:** Based on pass mark criteria.
  - **Performance Trend:** Categorized as Improved, Declined, or Same.
- Created a Top5StudentsPerExam custom Calculated table to support top-performers on each exam Matrix visual.

2. Visualizations & Insights:

2.1 Dashboard Features

- 2 Paginated Reports with navigation buttons.

- 7 Visuals and 5 KPI Cards.

- 3 Filters (excluding year as data is for 2025 only).

2.2 Requirement Fulfillment

- **Day-wise Attendance Trend:** Line chart on Performance Overview.

- **Daily Attempts by Exam:** Stacked bar on Attendance Insights.

- **Top 5 Students:** Matrix on Performance Overview.

- **Performance Trend Categories:** Donut chart showing trend distribution.

3. Optional Analytical Findings:

- **Top Improver:**

  Imran Hossain improved from 0.00 to 26.25 in

  Class 10 - Weekly MCQ Exam - February 2.

- **Decline-Prone Exams:**
  - সপ্তাহিক পরিক্ষা -১
  - Monthly Exam 1 (MCQ)
  - Class 10 - Monthly MCQ Exam - February

- **Exam Date vs. Pass Rate:**

  Exams held on weekends, especially Friday and Wednesday, show lower pass rates,

  indicating timing impacts student performance.