**Comprehensive Analysis Report**  
**Lab Test Performance Dashboard**

**1. Introduction**  
The *Lab Test Performance Dashboard* is a Power BI-based data visualization tool built to analyze and interpret students’ performance in lab tests. The dashboard converts raw assessment data into meaningful, interactive insights, providing educators with a detailed understanding of students’ academic outcomes in laboratory settings.

**2. Dashboard Description**  
This dashboard gives a complete snapshot of students’ lab test results through:

* Visual KPIs showing average scores, test participation, and overall performance trends.
* Dynamic filters that allow analysis based on Test Name, Roll Number, or Subject.
* Visual breakdowns to support academic decision-making.

Users can drill into the data to examine individual student marks or compare subject-wise outcomes across students. The intuitive layout helps track which areas need focus and which students require support.

**3. Dataset Overview**  
The dataset used includes simulated lab test data:

* **Student Information:** Roll Number
* **Test Details:** Test Name, Subject Name
* **Scores:** Marks Obtained, Total Marks
* **Performance Status:** Derived indicators (e.g., Pass/Fail)

**4. Dashboard Elements & Visuals**

**A. Key Indicators (KPIs):**

* **Average Score:** Overall average of marks obtained
* **Total Students:** Number of students who participated
* **Test Count:** Number of tests conducted

**B. Slicers and Filters:**

* Subject
* Roll Number
* Test Name

These filters enable customized, focused views of the data.

**C. Visualizations:**

* **Bar Charts:** Distribution of marks across subjects or tests
* **Pie Charts:** Share of marks distribution or pass/fail ratio
* **Cards:** Highlight key figures for quick evaluation

**5. Key Insights**

* **Subject-Wise Performance:** Easily identify which subjects have lower average marks.
* **Test Difficulty Trends:** Compare tests to assess relative difficulty based on average scores.
* **Student-Specific Outcomes:** Use the Roll Number filter to evaluate individual performance.
* **Score Distribution:** Understand the spread of student scores and flag anomalies.

**6. Applications & Stakeholders**

* **Faculty:** Evaluate teaching effectiveness and align future instruction.
* **Department Heads:** Make data-backed decisions for academic support.
* **Students:** Transparent view of their lab test progress.

**7. Conclusion**  
The *Lab Test Performance Dashboard* bridges the gap between raw lab assessment data and actionable academic insight. It empowers stakeholders with the tools to drive performance improvement, student support, and departmental accountability.

**9. Author Information**  
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**Tool Used:** *Power BI Desktop*