🎓 Student Performance and Financial Habit Analysis

Tools Used: Excel | SQL | Python | Power BI

📌 Project Overview

This project explores the relationship between **students' financial habits** and their **academic performance** using three datasets — `student_financial_data`, `academic_data`, and `demographics_data`.

The goal was to discover whether financial discipline and spending behavior influence academic success.

Using **Excel, SQL, Python, and Power BI**, I built a full analytical workflow — from data cleaning and merging to exploration and visualization.

🧹 Data Preparation (Excel)

- Explored three datasets and checked for missing values, duplicates, and inconsistencies.
- Merged all data using **XLOOKUP** into one master dataset.
- Added calculated fields:
  - `Total_Expenses`
  - `Savings`
  - `Expense_to_Income_Ratio`
- Used **PivotTables** for preliminary charts (bar and pie charts).

💾 Data Exploration (SQL)

Key insights from SQL analysis:

| Metric | Value |

|--------|--------|

| **Average Income** | ₦75,995.21 |

| **Average Expense** | ₦38,569.51 |

| **Average Savings** | ₦37,425.70 |

| **Expense-to-Income Ratio** | 53% |

By Academic Level:

- 200 Level students earned the most (₦77,294.18) and saved the most (₦38,257.08).

- 500 Level students had the highest expense-to-income ratio (0.53).

By Gender:

- Females earned more (₦76,529.29) and saved more (₦38,192.57).

- Males spent more (₦38,918.70).

By Month:

- June recorded the highest average income (₦77,241.30), expenses (₦39,705.80), and savings (₦39,708.80).

By Residence:

- Off-campus students spent more (₦38,850.60) and had a GPA of 3.39.

- On-campus students spent less (₦37,551.74) but had a slightly higher GPA of 3.41.

🪢 Data Validation & Visualization (Python)

Using **pandas**, **matplotlib**, and **seaborn**:

- Confirmed SQL findings programmatically.

- Created bar, line, and distribution plots showing spending and saving trends by gender, level, and residence type.

- Validated average income, expenses, and savings consistency across all tools.

📊 Interactive Dashboard (Power BI)

Built an interactive dashboard including:

- **KPI Cards:** Total income, total expenses, total savings, and their averages.

- **Pie Chart:** Income distribution by gender.

- **Custom Column Chart:** Income vs expenses by level.

- **Bar Chart:** Spending by residence type.

- **Line Chart:** Income and expense trend over time.

💡 Key Insights

1. Students with higher savings generally maintain better GPAs.

2. Off-campus students spend more due to additional living costs.

3. Females earn and save more, while males spend more.

4. Academic level affects spending and saving patterns.

5. High-income months show proportional increases in savings and expenses.

🤔 Reflection

My goal with this project was to understand how students' financial habits could influence academic performance.

Through this dataset, I explored how factors like **residence type**, **gender**, and **academic level** affect spending and saving patterns.

The process deepened my technical and storytelling skills — proving that behind every number is a human decision, and behind every dataset, a story waiting to be told.

🧠 Skills & Tools Demonstrated

- Data Cleaning & Preparation (Excel, Python)
- Data Merging (XLOOKUP)
- SQL Querying & Aggregation
- Python EDA & Visualization
- Power BI Dashboard Design
- Data Storytelling

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