STUDENT MARKS AND GRADES SUMMARY

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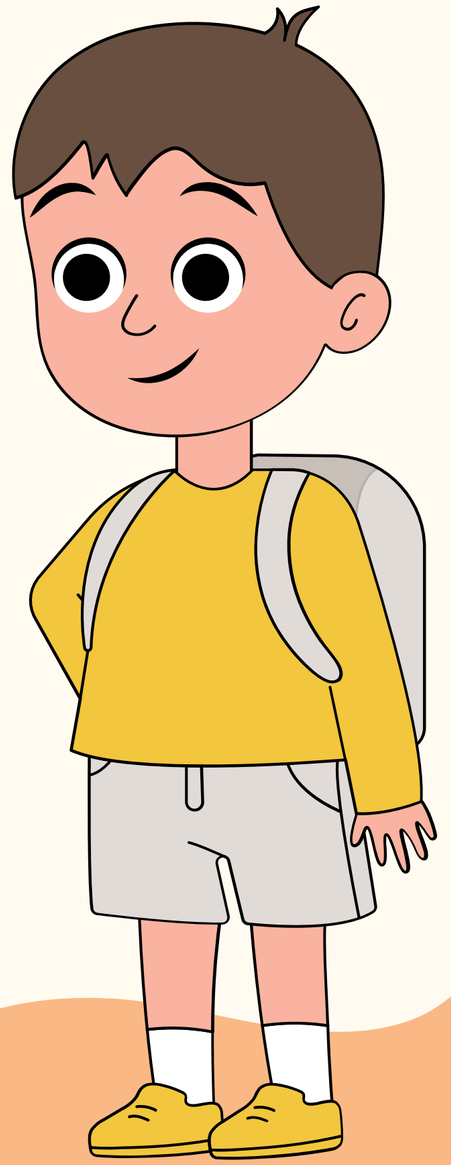
INTRODUCTION

"This project demonstrates Python's capability to process academic data by computing student totals, averages, and grades from marks in three subjects. Using dictionaries and conditional logic, it generates a class report with averages and identifies the topper, showcasing practical applications of fundamental programming concepts."



PROJECT GOAL

Objective:

"To automate student performance evaluation by calculating marks, grades, and identifying top performers efficiently."

Key Targets:

✓ Compute individual totals & averages

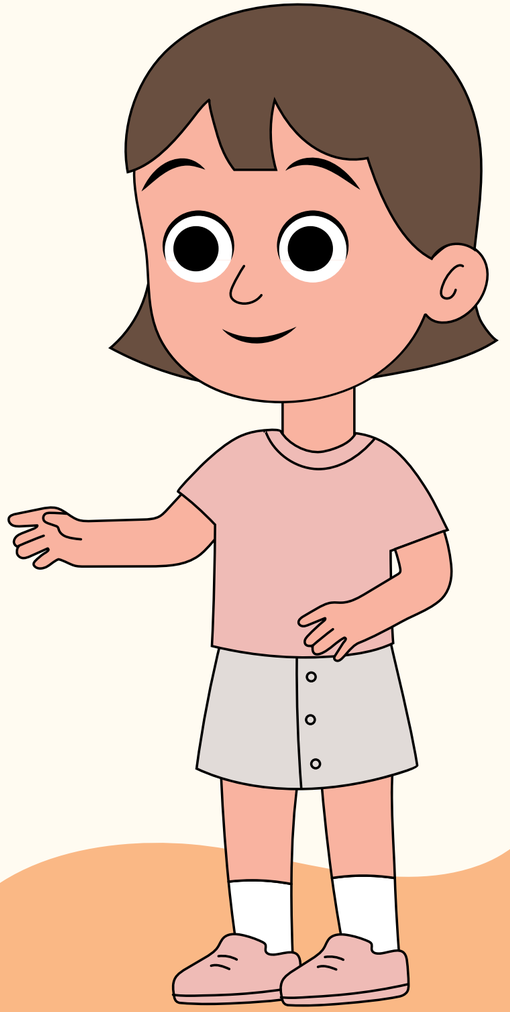
✓ Assign accurate grades (A–F)

✓ Determine class statistics (average/topper)

✓ Simplify teacher workload

FEATURES

- Calculates total marks and average per student.
- Assigns grades (A–F) based on averages.
- Identifies class average and topper.
- User-friendly input/output interface.

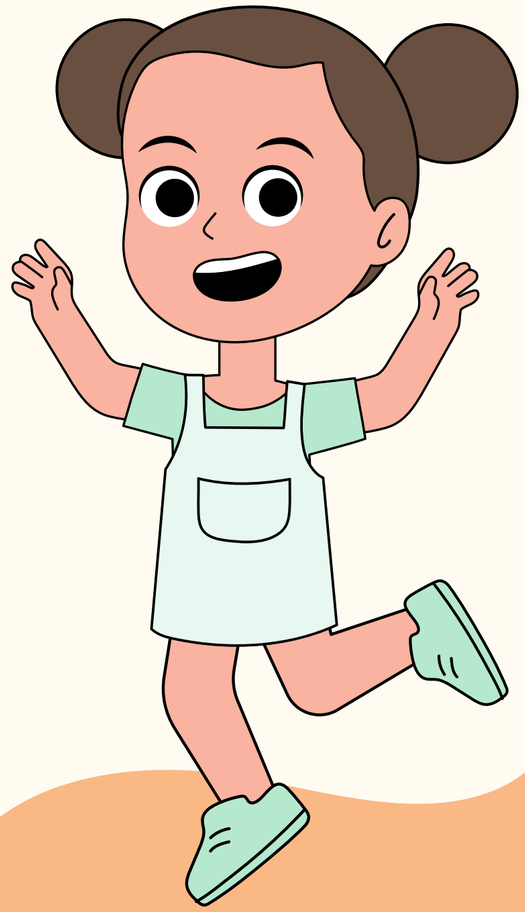


APPLICATIONS

- Teachers: Quick grade computation.
- Schools: Automated report generation.
- Students: Self-assessment tool.

PROCESS DESCRIPTION

1. **Input Collection**
   - Enter the number of students.
   - For each student, input their name and marks in 3 subjects.
2. **Calculations**
   - Total Marks: Sum of all subject marks.
   - Average Marks: Total divided by 3.
   - Grade Assignment: Based on average (A: ≥90, B: ≥80, etc.).
3. **Class Summary**
   - Compute class average (mean of all student averages).
   - Identify the topper (highest average).
4. **Output Report**
   - Display individual student results (name, marks, total, avg, grade).
   - Show class summary (average and topper).



Visual Flow:

Input → Calculations → Grade Assignment → Summary → Output

OVERVIEW

```
    plt.tight_layout()
    plt.show()

# Run the program
calculate_grades()
```

```
Enter number of students:
```

INSERTING DATA :

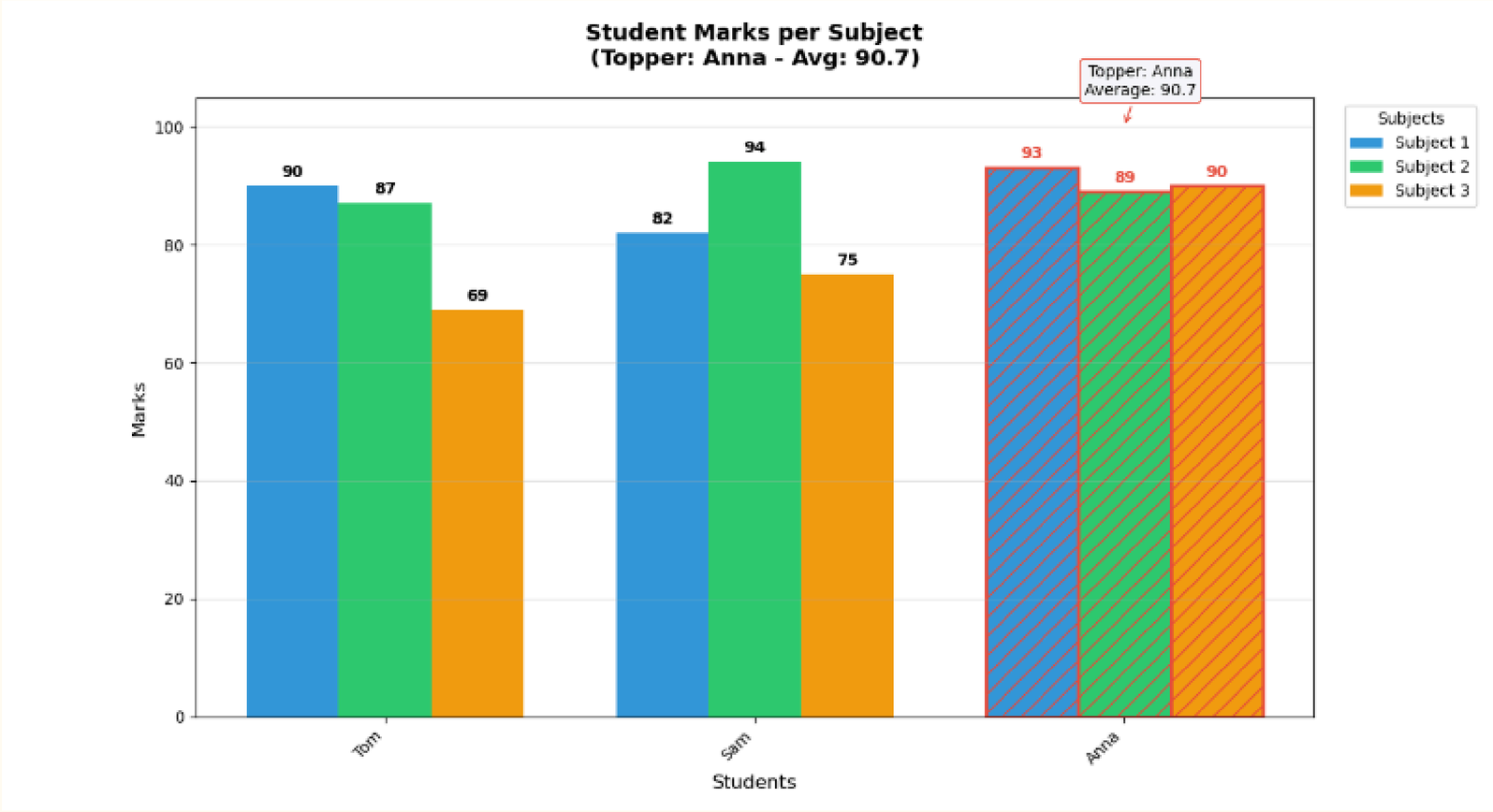
```
Enter student 1 name: Tom
Enter mark for subject 1: 90
Enter mark for subject 2: 87
Enter mark for subject 3: 69

Enter student 2 name: Sam
Enter mark for subject 1: 82
Enter mark for subject 2: 94
Enter mark for subject 3: 75

Enter student 3 name: Anna
Enter mark for subject 1: 93
Enter mark for subject 2: 89
```

OUTPUTS

```
Student Report:
-----------------------------------------------------------------
Name            Sub1    Sub2    Sub3    Total     Avg       Grade
-----------------------------------------------------------------
Tom             90.0    87.0    69.0    246.0     82.0      B
Sam             82.0    94.0    75.0    251.0     83.7      B
Anna            93.0    89.0    90.0    272.0     90.7      A
```

```
Class Summary:
------------------------------
Class Average: 85.4
Topper: Anna with average 90.7
------------------------------
```

DATA ANALYSIS



CONCLUSION

The Student Marks and Grades Summary project successfully automates the calculation and analysis of student performance using Python. By efficiently processing input marks, computing totals, averages, and grades, and identifying the class topper, it eliminates manual effort and reduces errors.

Key Achievements:

✓ Simplified Grading – Instant grade assignment based on predefined criteria.

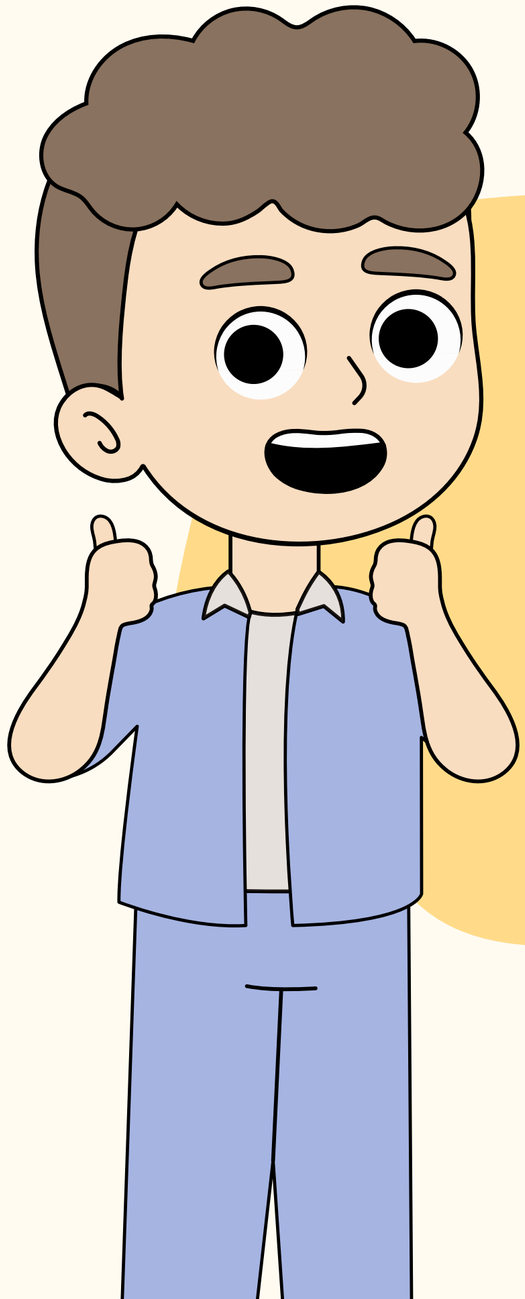
✓ Performance Insights – Clear overview of class averages and top performers.

✓ Scalability – Can be extended to include more subjects or graphical reports.

This project demonstrates how basic programming logic can streamline academic evaluations, making it a practical tool for educators and institutions.

Future Enhancements:

- Export results to Excel/PDF.
- Visualize data with charts (bar graphs, pie charts).
- Add login-based access for teachers/students.



THANK YOU