

“STUDENT GRADE MANGEMENT SYSTEM”

A EXCEL PROJECT

Submitted by

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Introduction

In the current academic setting, effective and precise handling of student performance data is vital for institutions of any size. Manual grade input and computation methods are time-wasting and susceptible to errors. To overcome such limitations, this project presents a Student Grade Management System developed wholly with Microsoft Excel.

Excel is a robust software that supports customizable data structures, automated computation, visual data analysis, and convenient sharing. This project takes advantage of Excel's in-built formulas and functionality to create an efficient solution that can compute total marks, average scores, and grades automatically. It also provides visual insights through dynamic charts and formatting, making it convenient for teachers and students to understand academic performance at a glance.

This report gives a detailed description of the system design, implementation procedures, functionalities, and advantages.

Objective

The main aim of this project is to develop and implement a Student Grade Management System based on Microsoft Excel that makes it easy to record, calculate, and analyze student academic performance. The system should be able to offer:

- Automation of Calculations: Automatically calculate total marks and average scores based on subject-wise input.
- Grade Assignment: Apply conditional logic to assign letter grades based on student performance.
- Data Accuracy: Reduce manual errors through the application of in-built Excel formulas and validation tools.
- Ease of Use: Design a simple and intuitive layout for easy data entry and interpretation.
- Visual Analysis: Offer meaningful visual representations of performance using bar and pie charts.
- Flexibility and Reusability: Enable the system to be easily modified for use with various classes, semesters, or grading systems.

This is a system designed to help teachers handle student information more effectively while ensuring accuracy and clarity.

Methodology

The Student Grade Management System development was done employing Microsoft Excel using a step-by-step methodology in order to build structure, precision, and user-friendliness. The method entailed the following stages:

1. Design of Data Structure

Designed an organized table format with columns for Roll Number, Name, Subject Marks, Total, Average, and Grade.

Applied uniform column widths and formatting for readability.

2. Formula Implementation

Utilized Excel functions like SUM, AVERAGE, and IFS for calculations.

Ensured dynamic calculation through relative cell references so formulas can work in multiple rows.

3. Grade Logic Setup

Utilized a grading logic with the IFS function to assign letter grades automatically based on the average score.

Grading scale:

A for 90 and above

B for 80–89

C for 70–79

D for 60–69

F for below 60

4. Validation and Formatting

Utilized Data Validation to limit inputs (e.g., marks between 0–100).

Applied Conditional Formatting to color-top performers (green) and low scorers (red).

5. Visualization

Designed Bar Charts to visualize average marks by student.

Designed Pie Charts to present the general grade distribution.

Utilized slicers (optional) for dynamic filtering.

6. Testing and Review

Tried the system with test data to ensure accuracy.

Double-checked all formulas and chart results.

Tweaked formatting and layout for readability.

This well-organized methodology guaranteed the ultimate system was accurate, operational, and user-friendly, hence ready for academic as well as administrative use.

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Technologies Used

This project utilized various features of Microsoft Excel, a versatile spreadsheet software widely used for data analysis and automation. The following tools and functions were employed:

Microsoft Excel Features:

1. Formulas:
 - SUM: Calculates the total of subject marks.
 - AVERAGE: Computes the average score for each student.
 - IFS: Assigns grades based on average marks.
2. Data Validation:
 - Restricts input values (e.g., allows only numbers between 0 and 100 for marks).
 - Prevents data entry errors and improves consistency.
3. Conditional Formatting:
 - Highlights high performers (e.g., grades A and B in green).
 - Flags low performance (e.g., grades below C in red).
4. Charts:
 - Bar Charts: Visualize average scores across students.
 - Pie Charts: Display grade distribution for a class overview.
5. Tables and Structured References:
 - Organizes student data in a clear, sortable, and filterable format.

Implementation/execution

Formulas Used:

- Total: =SUM(C2:E2)

F2 *fx* =SUM(C2:E2)

	A	B	C	D	E	F	G	H
1	Roll No	Name	Subject 1	Subject 2	Subject 3	Total	Average	Grade
2	1	Aarav Sharma	85	78	92	255	85	B
3	2	Ananya Mehta	95	88	90	273	91	A
4	3	Rohan Verma	70	65	75	210	70	C
5	4	Priya Kapoor	60	72	68	200	66.6666667	D
6	5	Isha Nair	98	95	99	292	97.33333333	A
7	6	Aditya Singh	58	62	55	175	58.33333333	F
8	7	Neha Joshi	88	84	86	258	86	B
9	8	Karan Desai	75	70	80	225	75	C
10	9	Meera Pillai	90	85	88	263	87.66666667	B
11	10	Arjun Reddy	65	60	70	195	65	D
12	11	Sneha Iyer	78	82	79	239	79.66666667	C
13	12	Rahul Khanna	84	76	80	240	80	B
14	13	Tanvi Patel	92	90	94	276	92	A
15	14	Devansh Bhatia	73	68	75	216	72	C
16	15	Kavya Malhotra	88	91	89	268	89.33333333	B
17	16	Manav Saxena	59	62	58	179	59.66666667	F
18	17	Riya Thakur	83	79	81	243	81	B
19	18	Yash Vora	91	87	89	267	89	B
20	19	Diya Chatterjee	66	71	69	206	68.66666667	D
21	20	Siddharth Kulkarni	95	96	98	289	96.33333333	A

- Average: =AVERAGE(C2:E2)

G2 *fx* =AVERAGE(C2:E2)

	A	B	C	D	E	F	G	H
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7	6	Aditya Singh	58	62	55	175	58.33333333	F
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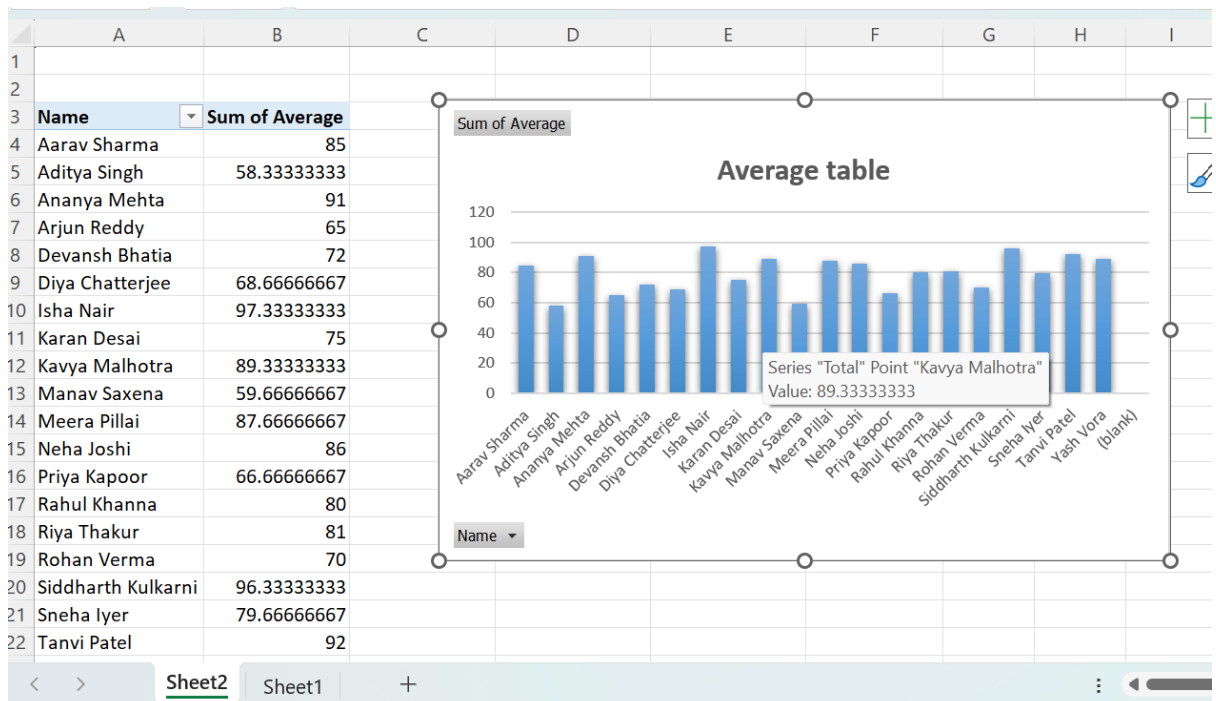
- Grade:

=IFS(G2>=90,"A", G2>=80,"B", G2>=70,"C", G2>=60,"D", G2<60,"F"))

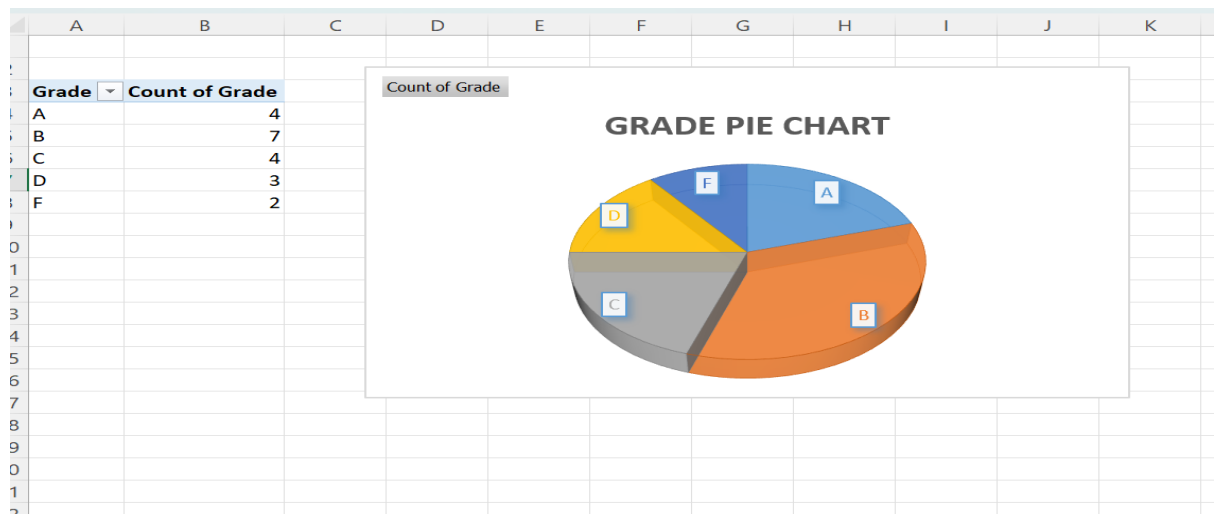
H2								
=IF(G2>=90,"A",IF(G2>=80,"B",IF(G2>=70,"C",IF(G2>=60,"D","F"))))								
	A	B	C	D	E	F	G	H
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5	4	Priya Kapoor	60	72	68	200	66.6666667	D
6	5	Isha Nair	98	95	99	292	97.3333333	A
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9	8	Karan Desai	75	70	80	225	75	C
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22								F
23								

Dashboard Elements

- Bar Chart: Student names vs average marks



- **Pie Chart:** Distribution of grades



Formatting

Green, white and red color scale.

Apply a color gradient to a range of cell the color indicates here each cell value falls within that range

Conclusion

The Student Grade Management System created with Microsoft Excel effectively illustrates how a basic tool can be converted into an effective system for managing academic information. Through the automation of grade calculations, improved data visualization, and increased accuracy, the system lightens the load on educators and offers instant insights into student performance.

The application of formulas, conditional formatting, and charts ensures not only that the data is accurate but also that it is readily understandable and presentable. The system is also flexible and can be modified to different grading schemes, class sizes, and subjects.

This project confirms the ability of Excel to be something beyond being a spreadsheet tool—it can be used as an efficient platform for creating real-world solutions with minimal resources.

References

- Microsoft Excel Official Documentation
- ExcelJet (<https://exceljet.net>)
- TutorialsPoint Excel Guide