

Assignment 2: Dynamic Gradebook & Class Statistics

Objective: Build a fully dynamic, automated student gradebook in Google Sheets or Microsoft Excel. You will enter raw assessment scores, write formulas using **=SUM()**, calculate percentages using division and **absolute cell references (\$)**, compute summary statistics (**=AVERAGE()**, **=MAX()**, **=MIN()**), and generate a column chart comparing student performance.

1. Raw Gradebook Data Table

Enter the following student information and raw test scores into a new spreadsheet starting in cell **A1**. Leave the *Total Points* and *Final Percentage* cells blank; you will populate them using formulas in Section 2.

Student Name (Col A)	Quiz 1 (Col B)	Quiz 2 (Col C)	Project (Col D)	Total Points (Col E)	Final % (Col F)
Alex Alvarez	22	24	48	[Calculate]	[Calculate]
Brianna Chen	25	25	50	[Calculate]	[Calculate]
Carlos Delgado	18	20	38	[Calculate]	[Calculate]
Dana Evans	20	22	44	[Calculate]	[Calculate]
Ethan Foster	15	18	32	[Calculate]	[Calculate]
Fiona Gallagher	24	23	46	[Calculate]	[Calculate]
George Harris	19	21	40	[Calculate]	[Calculate]
Hannah Ibarra	23	22	47	[Calculate]	[Calculate]
Ian Jackson	21	19	42	[Calculate]	[Calculate]
Julia Kim	24	25	49	[Calculate]	[Calculate]
Points Possible (Row 12)	25	25	50	[Formula]	[Formula]
Class Average (Row 13)	[Formula]	[Formula]	[Formula]	[Formula]	[Formula]
Highest Score (Row 14)	[Formula]	[Formula]	[Formula]	[Formula]	[Formula]
Lowest Score (Row 15)	[Formula]	[Formula]	[Formula]	[Formula]	[Formula]

2. Step-by-Step Instructions

Step 1: Set Up Column Headers

In cell **E1**, type **Total Points**. In cell **F1**, type **Final Percentage**. Bold both header labels.

Step 2: Calculate Student Total Points (Row Sums)

In cell **E2**, enter the formula **=SUM(B2:D2)** to add Alex Alvarez's Quiz 1, Quiz 2, and Project scores.

- Click cell E2 and use the fill handle (the tiny square in the bottom-right corner) to drag the formula down through cell **E11**.
- In cell **E12**, compute total possible points for the semester using **=SUM(B12:D12)**.

Step 3: Calculate Final Percentages (Absolute Cell Reference)

In cell **F2**, calculate Alex's percentage by dividing Total Points Earned by Total Points Possible. Enter the formula:

=E2/\$E\$12

- **Why absolute referencing (\$) is required:** The dollar signs in **\$E\$12** lock cell E12 as an absolute reference. When you copy the formula down to rows 3 through 11, cell E2 relative-adjusts (E3, E4, etc.), but the divisor remains strictly anchored on cell E12. Without \$, copying down results in invalid division by empty cells (**#DIV/0!**).
- Fill cell F2's formula down through **F11**.

Step 4: Compute Class Summary Statistics (Rows 13–15)

- **Class Average (Row 13):** In cell **B13**, enter **=AVERAGE(B2:B11)**. Drag this formula across through cell **F13** to compute class averages for each assessment, total points, and overall percentage.
- **Highest Score (Row 14):** In cell **B14**, enter **=MAX(B2:B11)**. Drag across through cell **F14**.
- **Lowest Score (Row 15):** In cell **B15**, enter **=MIN(B2:B11)**. Drag across through cell **F15**.

Step 5: Format the Spreadsheet

- Select range **F2:F15** and click **Format as Percent (%)**. Set decimal places to 1 decimal place (e.g., 86.6%).
- Highlight Row 13 (Class Averages) and format all values to 1 decimal place.
- Apply subtle fill background shading to header Row 1 and summary labels in column A.

Step 6: Create a Visual Comparison Chart

- Hold **Ctrl** (or **Cmd** on Mac) and select two non-adjacent columns: Student Names (**A1:A11**) and Final Percentages (**F1:F11**).
- Click **Insert** → **Chart**.
- Choose **Column Chart**.
- Set the Chart Title to **Final Student Percentages** and label the Y-axis as **Percentage (%)**.

3. Submission Checklist & Grading Rubric

Requirement	Description	Points
Formula Correctness	Correct use of =SUM() in column E and row 12.	4 pts
Absolute Cell Reference	Proper use of =E2/\$E\$12 without division errors.	5 pts
Summary Statistics	Accurate =AVERAGE() , =MAX() , and =MIN() formulas across rows 13–15.	5 pts

Formatting & Polish	Percentages formatted to 1 decimal place; clean header & summary formatting.	3 pts
Column Chart	Clear column chart displaying student names vs. final percentages with titles.	3 pts
Total	Complete dynamic gradebook sheet submitted as .xlsx or link.	20 pts