ASSIGNMENT 3

1. **Data: Student Grades**

Task:

- Create a new column called “Final Score”. Let this column be calculated by finding the mean of all 3 subjects for each student. *(in 2 decimal places)*
- Calculate a new column “Grade”. Let scores of 80-100 = “A”, 70-79 = “B”, 60-69 = “C”, 50-59 = “D”, ETC.
- Identify students who scored higher than 89 in Math.
- Determine if there are any students who scored below 70 in both Science and English. If yes, how many?
- Calculate the average grade for male students.
- Find out if any female students scored less than 90 in Math but more than 85 in English.
- Determine if any student's average score is below 80 in all subjects.
- Use a built-in function to find the Math score of the student ‘Lisa Davies’.
- Apply a built-in function to calculate the average score for students who are 17 years old.
- Apply conditional formatting to find the highest grade among all students in each subject.
- Who is the best student in the class?

Student ID	Name	Gender	Age	Math Grade	Science Grade	English Grade
101	John Smith	Male	18	85	90	88
102	Emily Johnson	Female	17	92	88	90
103	David Brown	Male	18	78	75	82
104	Sarah Lee	Female	16	95	92	94

Student ID	Name	Gender	Age	Math Grade	Science Grade	English Grade
105	Michael Clark	Male	17	70	78	85
106	Lisa Davis	Female	18	88	90	86
107	James Wilson	Male	16	75	80	78
108	Emma Martinez	Female	17	90	85	92
109	Daniel Taylor	Male	18	82	66	60
110	Olivia Garcia	Female	16	87	92	88
111	William Moore	Male	17	70	75	72
112	Sophia Nguyen	Female	18	92	90	94
113	Ethan Anderson	Male	17	56	60	58
114	Ava Wilson	Female	16	85	88	86
115	Mia Thompson	Female	17	90	92	88

2. **Data: Employee performance data.**

Tasks:

- Use an IF statement to categorize employees into "High Performers" (Performance Score >= 90) and "Average Performers" (Performance Score < 90).
- Apply an IF statement to determine if an employee's performance score is above or below the departmental average.
- Use an IF statement to assign a performance rating of "Excellent," "Good," or "Needs Improvement" based on performance scores.
- Apply an IF statement to categorize employees based on their experience into "Junior" (Experience < 6 years) and "Senior" (Experience >= 6 years).

- Utilize a built-in function to retrieve the department of ‘David Brown’, and ‘Lisa Davis’ based on their Employee ID.
- Use a built-in function to calculate the total performance score of employees in the Sales department.
- Apply a built-in function to find the average age of employees with a performance score above 85.
- Utilize a built-in function to count the number of employees in each department who have a performance score greater than 80.

Employee ID	First Name	Last Name	Department	Age	Experience (Years)	Performance Score
101	John	Smith	Sales	32	5	85
102	Emily	Johnson	Marketing	28	3	90
103	David	Brown	HR	35	7	78
104	Sarah	Lee	Finance	40	10	95
105	Michael	Clark	Operations	45	12	88
106	Lisa	Davis	Sales	29	4	82
107	James	Wilson	Marketing	38	8	90
108	Emma	Martinez	HR	33	6	75
109	Daniel	Taylor	Sales	42	11	85
110	Olivia	Garcia	Operations	37	9	80
111	William	Moore	Sales	31	5	92
112	Sophia	Nguyen	Marketing	36	7	87
113	Ethan	Anderson	HR	34	6	79
114	Ava	Wilson	Finance	39	10	93
115	Mia	Thompson	Operations	30	5	84

3. **Data: Engineering.**
   Task:

- Use a built-in function to join the first name and last name into a single column called “Name”.
- If the project completion percentage is less than 90%, flag the project as "Needs Improvement".
- If the performance rating is 4 or 5, classify the employee as "High Performer".
- If the years of experience are less than 5 and the salary is less than $60,000, mark the employee as "Entry Level".
- If the gender is male and the department is Mechanical, calculate a 10% bonus on the salary.
- Calculate a new salary column for all employees.
- If the age is over 40 or the project completion percentage is upto 95%, congratulate the employee for their exceptional performance.
- Apply a built-in function to calculate the average years of experience for female employees.
- Use a built-in function to count the number of employees with a performance rating of 5 and a salary IS $77,000.
- Utilize a built-in function to calculate the total salary of employees in the Mechanical department with a performance rating of 4.

First Name	Last Name	Age	Gender	Department	Years of Experience	Salary ($)	Project Completion (%)	Performance Rating
John	Smith	35	Male	Mechanical	8	65000	90	4
Emily	Johnson	28	Female	Electrical	5	60000	85	3

First Name	Last Name	Age	Gender	Department	Years of Experience	Salary ($)	Project Completion (%)	Performance Rating
David	Brown	42	Male	Civil	12	75000	95	5
Sarah	Lee	30	Female	Chemical	7	62000	92	4
Michael	Clark	38	Male	Mechanical	10	70000	88	4
Lisa	Davis	33	Female	Electrical	6	58000	85	3
James	Wilson	45	Male	Civil	15	80000	97	5
Emma	Martinez	29	Female	Chemical	4	57000	80	2
Daniel	Taylor	37	Male	Mechanical	9	67000	89	4
Olivia	Garcia	31	Female	Electrical	8	62000	87	3
William	Moore	40	Male	Civil	13	78000	94	5
Sophia	Nguyen	26	Female	Chemical	3	55000	75	2
Ethan	Anderson	36	Male	Mechanical	11	72000	90	4
Ava	Wilson	32	Female	Electrical	7	60000	86	3

First Name	Last Name	Age	Gender	Department	Years of Experience	Salary ($)	Project Completion (%)	Performance Rating
Mia	Thompson	39	Female	Civil	14	77000	96	5