Name: **Jitha P Nair**
Email: jithapnair20@gmail.com
LinkedIn: https://www.linkedin.com/in/jithapnair/

EMPLOYEE DATA ANALYSIS INTERNSHIP TASK 2

ABSTRACT

In my role as a Data Analysis Intern, I conducted the Employee Data Analysis project, utilizing tools such as Excel, pivot point analysis, and PowerBI. The project aimed to scrutinize and interpret organizational employee data, extracting valuable insights for strategic decision-making. Analyzing employee demographics, performance metrics, and rates, the goal was to discern patterns and trends for optimizing workforce management strategies. Employing sophisticated data analysis techniques, the project generated comprehensive visualizations and actionable recommendations to enhance aspects of workforce management, including productivity, engagement, and overall performance. This project showcases my proficiency in deploying key data analysis tools and demonstrates my capability to derive meaningful insights from intricate datasets, underscoring my competence in contributing to informed decision-making processes in a real-world organizational context.

1. Can you create a pivot table to summarize the total number of employees in each department?

Department	Count of Employees
Admin Offices	80
Executive Office	24
IT/IS	430
Production	2020
Sales	331
Software Engineering	115
(blank)	
Grand Total	**3000**

2. Apply conditional formatting to highlight employees with a "Performance Score" below 3 in red.

	A	B	C	D	E	F	G	H	I
1	Employee ID	FirstNa	LastNai	StartDate	ExitDate	Title	Supervisor	ADEmail	BusinessUnit
2	3427	Uriah	Bridges	9/20/2019		Productio	Peter Oneill	uriah.bridges@t	CCDR
3	3428	Paula	Small	2/11/2023		Productio	Renee Mccormick	paula.small@bil	EW
4	3429	Edward	Buck	12/10/2018		Area Sale	Crystal Walker	edward.buck@b	PL
5	3430	Michael	Riordan	6/21/2021		Area Sale	Rebekah Wright	michael.riordan	CCDR
6	3431	Jasmine	Onque	6/29/2019		Area Sale	Jason Kim	jasmine.onque	TNS
7	3432	Maruk	Fraval	1/17/2020		Area Sale	Sheri Campos	maruk.fraval@b	BPC
8	3433	Latia	Costa	4/6/2022	7/3/2023	Area Sale	Jacob Braun	latia.costa@bile	WBL
9	3434	Sharlene	Terry	11/6/2020	1/29/2023	Area Sale	Tracy Marquez	sharlene.terry@	CCDR
10	3435	Jac	McKinzie	8/18/2018		Area Sale	Sharon Becker	jac.mckinzie@b	NEL
11	3436	Joseph	Martins	1/21/2022	6/29/2023	Area Sale	George Jenkins	joseph.martins	BPC
12	3437	Myriam	Givens	8/4/2023		Area Sale	Troy White	myriam.givens@	SVG
13	3438	Dheepa	Nguyen	8/10/2018	11/4/2019	Area Sale	Brian Miller	dheepa.nguyen	MSC
14	3439	Bartholen	Khemmich	5/25/2022	11/27/2022	Area Sale	Charles Parks	bartholemew.kh	EW
15	3440	Xana	Potts	12/5/2019	2/17/2023	Area Sale	Gregory Walker	xana.potts@bile	CCDR
16	3441	Prater	Jeremy	4/28/2019		Area Sale	Tyler Lewis	prater.jeremy@	BPC
17	3442	Kaylah	Moon	7/9/2019	6/16/2022	Area Sale	Ashley Scott	kaylah.moon@b	PYZ
18	3443	Kristen	Tate	4/5/2021	5/12/2023	Area Sale	Lauren Jones	kristen.tate@bil	WBL
19	3444	Bobby	Rodgers	11/28/2021	2/4/2022	Area Sale	Matthew Jackson	bobby.rodgers@	NEL
20	3445	Reid	Park	1/16/2021		Area Sale	Michelle Mitchell	reid.park@bilea	PL
21	3446	Hector	Dalton	8/24/2021		Area Sale	Sydney French	hector.dalton@l	BPC
22	3447	Mariela	Schultz	5/26/2020	6/18/2023	Area Sale	Michelle Evans M	mariela.schultz	CCDR
23	3448	Angela	Molina	10/1/2019	11/6/2020	Area Sale	Patricia Cook	angela.molina@	SVG

3. Calculate the average "Satisfaction Score" for male and female employees separately using a pivot table.

Gender	Average of Satisfaction Score
Female	3.006
Male	3.042

4. Create a chart to visualize the distribution of "Work-Life Balance Score" for different job functions.
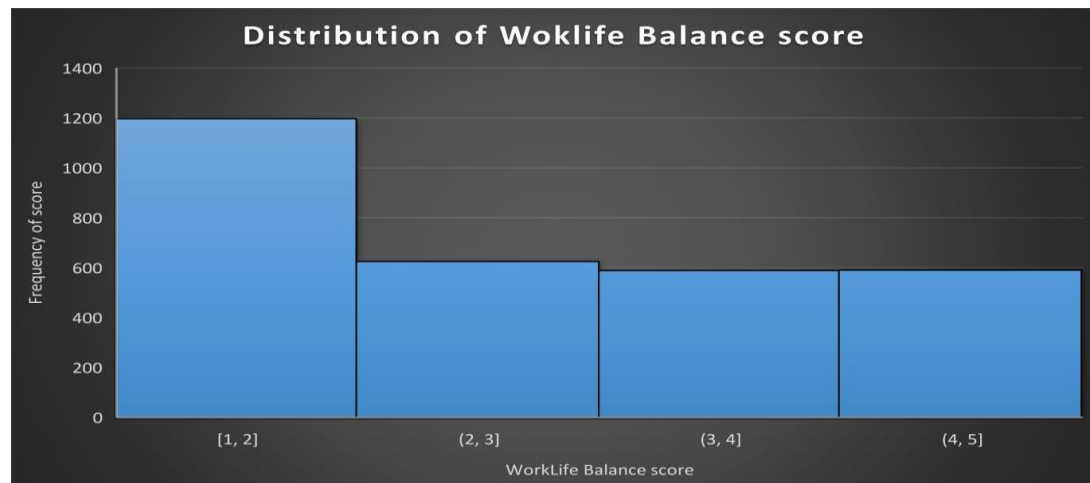
5. Filter the data to display only terminated employees and find out the most common "Termination Type."

Employee Status	
Termination Type	Count of Termination Type
Involuntary	107
Resignation	96
Retirement	86
voluntary	98

6. Calculate the average "Engagement Score" for each department using a pivot table.

Department	Average of Engagement_Score
Admin Offices	2.93
Executive Office	3.38
IT/IS	3.03
Production	2.91
Sales	2.99
Software Engineering	2.97
(blank)	
Grand Total	**2.94**

7. Use VLOOKUP to find the supervisor's email address for a specific employee.

Assuming you have a table containing employee information with columns for Employee ID, Employee Name, Supervisor ID, and Supervisor Email, you can use the VLOOKUP function in Excel to find the supervisor's email address for a specific employee.

Suppose the table starts in cell A1 and has headers in the first row. The Employee ID is in column A, Employee Name in column B, Supervisor ID in column C, and Supervisor Email in column D.

To find the supervisor's email address for a specific employee (let's say Employee ID "123"), you can use the following formula:

"=VLOOKUP(123, A:D, 4, FALSE)"

This formula is broken down as follows:

- `123`: The value you want to search for (Employee ID).
- `A:D`: The range where you want to search for the value (the entire table, including Supervisor Email).
- `4`: The column index number (4th column in the range A:D corresponds to Supervisor Email).
- `FALSE`: Exact match. This ensures that the VLOOKUP finds an exact match for the Employee ID.

Replace "123" with the actual Employee ID you are looking for, and the formula will return the supervisor's email address for that specific employee.

8. Can you identify the department with the highest average "Employee Rating?"

Department	Average of Current Employee Rating
Admin Offices	3.03
Executive Office	2.79
IT/IS	2.97
Production	2.98
Sales	2.91
Software Engineering	2.9
(blank)	
Grand Total	**2.97**

9. Create a scatter plot to explore the relationship between "Training Duration (Days)" and "Training Cost."

Total Training Cost by Training Duration(Days)
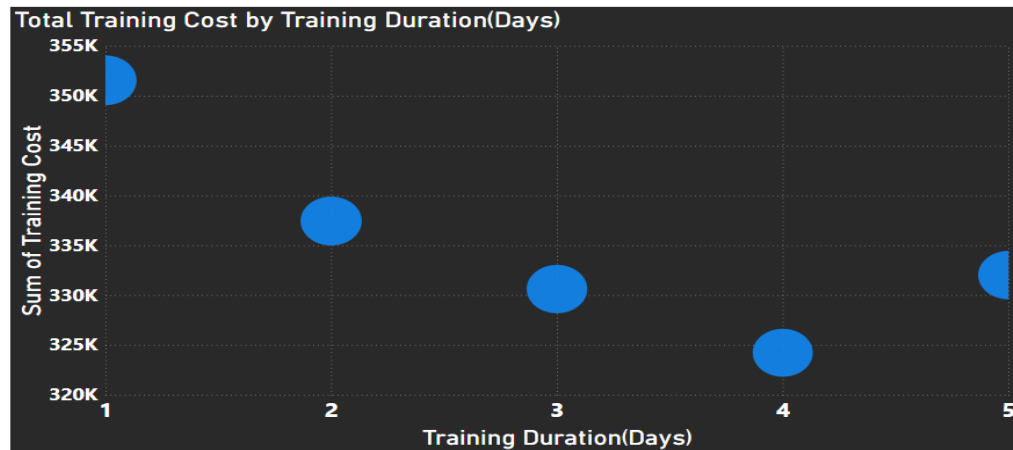
10. Build a pivot table that shows the count of employees by "RaceDesc" and "GenderCode."

Count of Employee_ID	Gender		
Race	Female	Male	Grand Total
Asian	346	283	629
Black	346	272	618
Hispanic	325	247	572
Other	318	264	582
White	347	252	599
Grand Total	**1682**	**1318**	**3000**

11. Use INDEX and MATCH functions to find the "Training Program Name" for an employee with a specific ID.

As the data starts in cell A1 and extends to column B, where column A contains "Employee ID" and column B contains "Training Program Name."

"=INDEX(B:B, MATCH([Specific Employee ID], A:A, 0))"

Replace `[Specific Employee ID]` with the actual Employee ID you are looking for.

Explanation of the formula:

- MATCH: Searches for the specific Employee ID in the column A and returns the relative position of that ID.
  - `[Specific Employee ID]` is the value you want to match.
  - `A:A` is the range where you want to search for the Employee ID.
  - `0` signifies an exact match.

- INDEX: Returns the value in the same row from the "Training Program Name" column.
  - `B:B` is the range from which to return the value.
 - The result is the "Training Program Name" for the specified Employee ID.

Ensure that you enter this formula in a cell where you want the result to appear. After entering the formula, Excel will display the "Training Program Name" for the specified Employee ID.

| Employee	Training Date	Training Program Name	Training Type
1001	9/21/2022	Customer Service	Internal
1002	7/19/2023	Leadership Development	Internal
1003	2/24/2023	Technical Skills	Internal
1004	01-12-2023	Customer Service	Internal
1005	05-12-2023	Communication Skills	External
1006	05-08-2023	Project Management	Internal
1007	5/14/2023	Leadership Development	External
1008	08-02-2023	Technical Skills	External
1009	8/21/2022	Customer Service	Internal
1010	8/19/2022	Communication Skills	External
1011	11-06-2022	Communication Skills	Internal
1012	3/28/2023	Technical Skills	External
1013	04-08-2023	Project Management	External

12. Create a multi-level pivot table to analyze the "Performance Score" by "BusinessUnit" and "JobFunctionDescription.".

Count of JobFunctionDescription	Business Unit											
Performance Score	BPC	CCDR	EW	MSC	NEL	PL	PYZ	SVG	TNS	WBL	(blank)	Grand Total
1	8	10	7	11	12	10	13	5	8	9		93
2	24	17	16	20	11	16	23	20	15	15		177
3	235	234	240	226	251	241	228	233	233	240		2361
4	36	39	39	39	30	34	35	46	41	30		369
(blank)												
Grand Total	303	300	302	296	304	301	299	304	297	294		3000

13. Design a dynamic chart that allows users to select and visualize the performance of any employee over time.
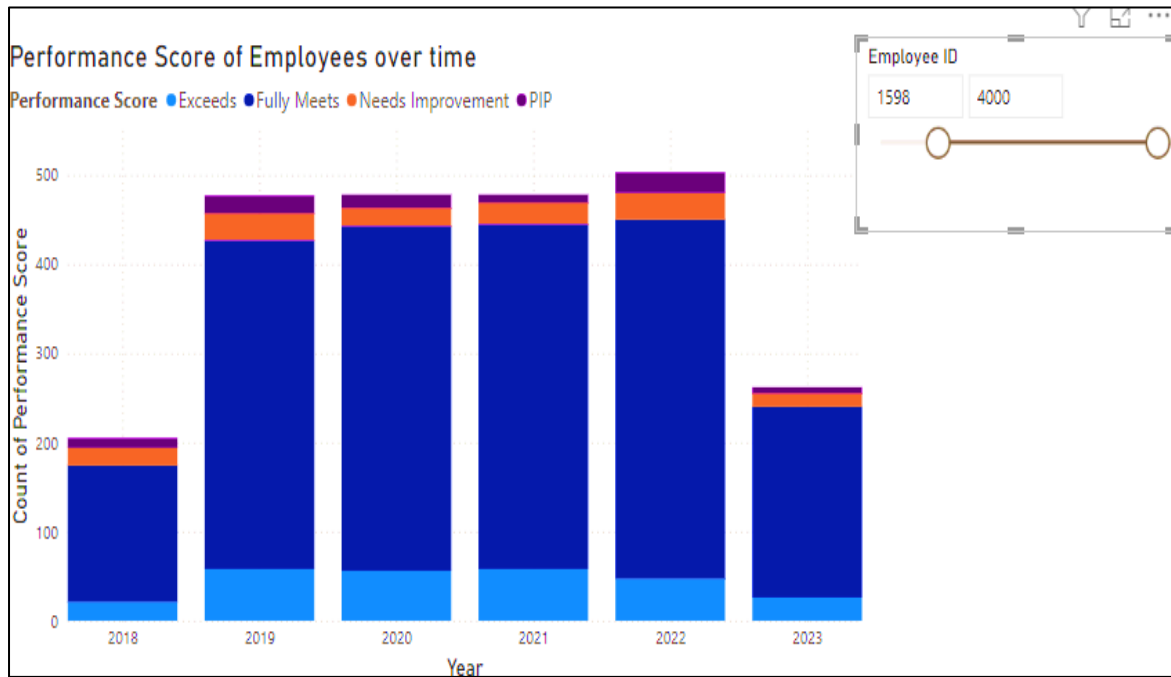
14. Calculate the total training cost for each "Training Program Name" and display it in a bar chart.
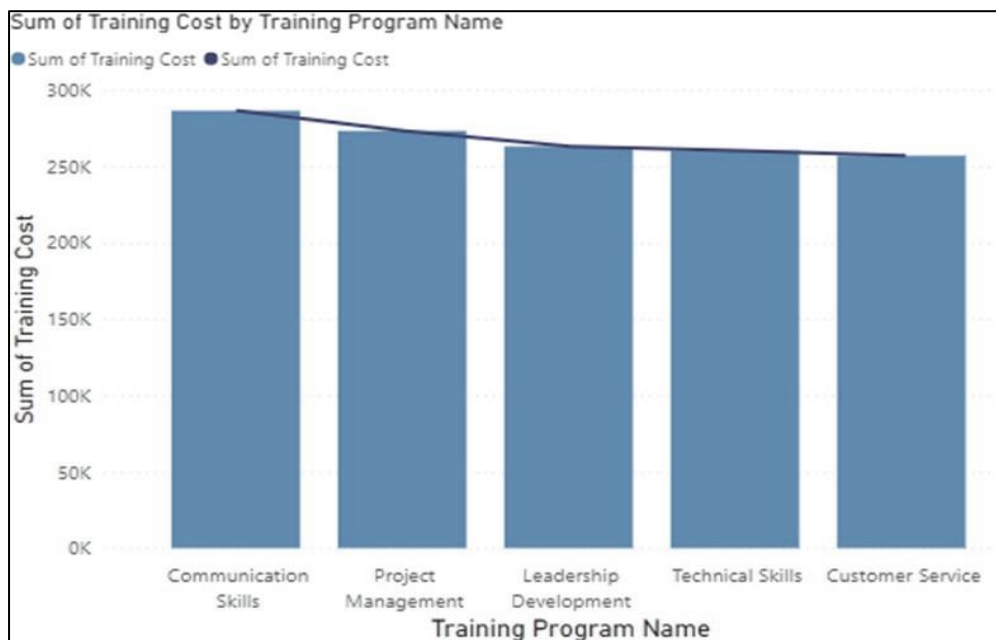
15. Apply advanced conditional formatting to highlight the top 10% and bottom 10% of employees based on "Current Employee Rating."

MaritalDe	Performance_Score	Current_Employee_Rating
Single	3	2
Single	3	5
Single	3	4
Single	3	4
Single	3	2
Single	3	4
Single	3	4
Single	3	5
Single	3	1
Single	3	4
Single	3	2
Single	3	5
Single	3	2
Single	3	2
Single	3	1
Single	3	2
Single	3	1
Single	2	2
Single	3	2
Single	3	3
Single	1	4

16.   Use a calculated field in a pivot table to determine the average "Engagement Score" per year.

Year	Average of Engagement_Score
<8/7/2018	
2018	2.9
2019	3.07
2020	2.94
2021	2.89
2022	2.94
2023	2.83
Grand Total	2.94

17. Create a histogram to understand the distribution of "ExitDate" for terminated employees.

Distribution of ExitDates for Terminated Employees
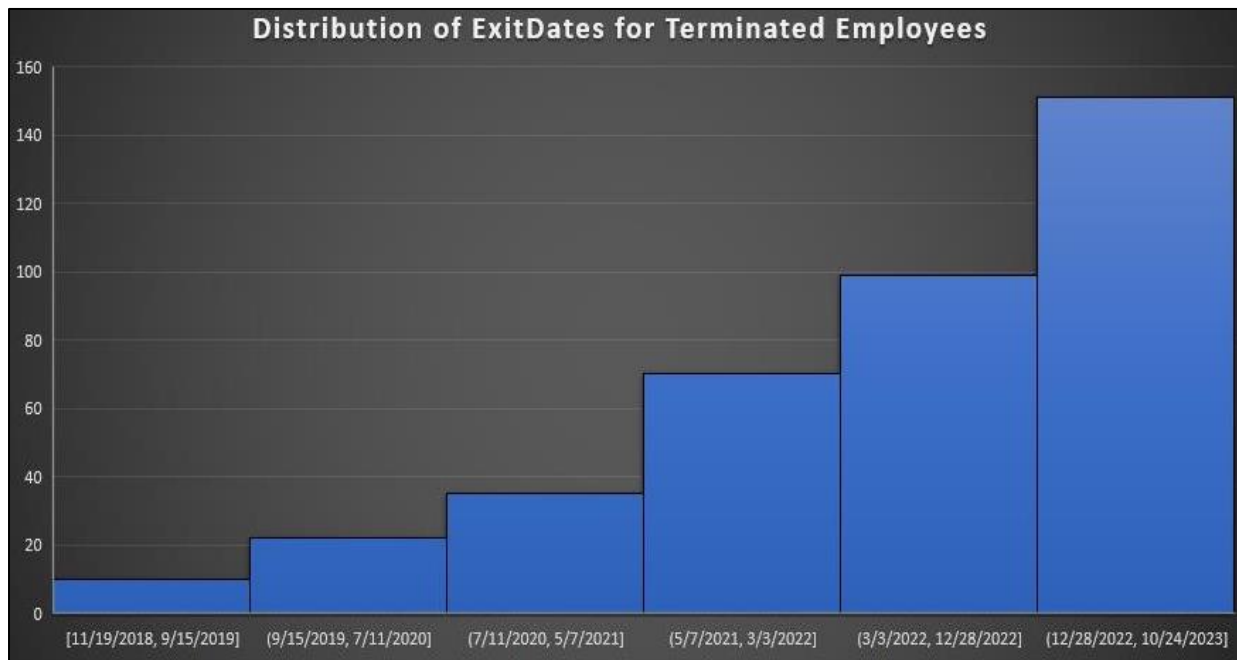
18. Utilize the SUMPRODUCT function to calculate the total training cost for employees in a specific location.

Row Labels	Sum of Training Cost
Aaronborough	841.22
Aaronburgh	633.96
Aaronstad	939.02
Abbottton	609.01
Acevedoshire	443.55
Adamborough	444.22
Adammouth	1248.77
Adamsberg	962.45
Adamsmouth	367.34
Aguirreland	881.71
Alexanderberg	494.29
Alexanderchester	346.93
Alexandraview	450.64
Alexandriachester	778.25
Alexishaven	127.93
Alfredmouth	328.74
Aliciaburgh	966.19

Aliciahaven	373.87
Allenborough	115.06

19. Develop a dashboard that provides an overview of key HR metrics, including headcount, performance, and training costs, using charts and pivot tables.