



Data Analyst Internship

Task: Employee Data Analysis

Name: Kirthik Ramadoss

Email: kirthikramadoss07@gmail.com

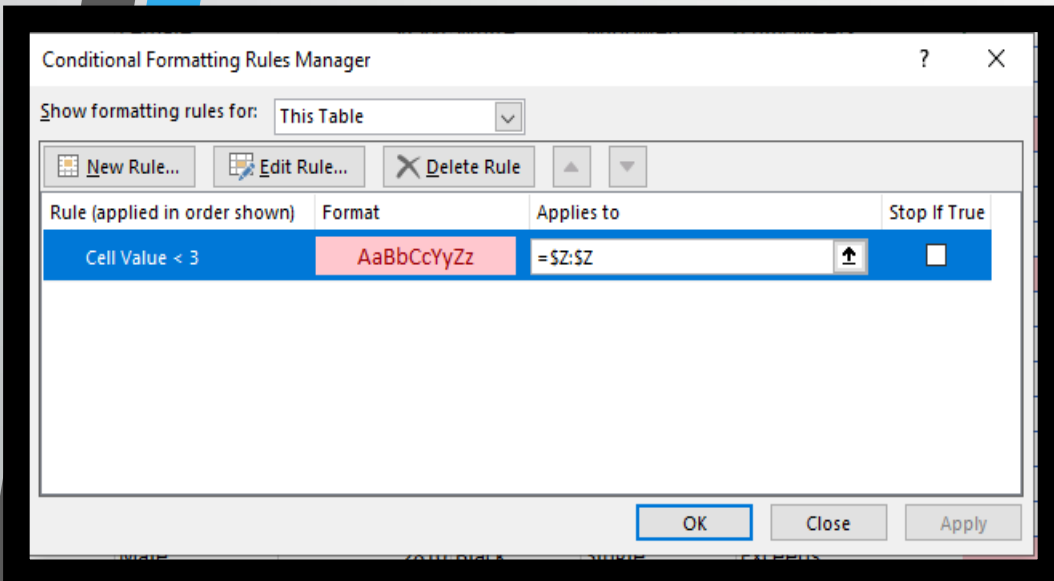


1. Can you create a pivot table to summarize the total number of employees in each department?

Deapartment	Count of Employee in each departmet
Admin Offices	80
Executive Office	24
IT/IS	430
Production	2020
Sales	331
Software Engineering	115
Grand Total	3000



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



S	T	U	V	W	X	Y	Z	AA	AB
State	JobFunction	Gender	County	Location	Race	Description	Marital	Department	Current Employee Rating
MA	Accounting	Female	34904	White	Widowed	Fully Mee	4		
MA	Laborer	Male	6593	Hispanic	Widowed	Fully Mee	3		
MA	Assistant	Male	2330	Hispanic	Widowed	Fully Mee	4		
ND	Clerk	Male	58782	Other	Single	Fully Mee	2		
FL	Laborer	Female	33174	Other	Married	Fully Mee	3		
CT	Driver	Male	6050	Black	Married	Fully Mee	3		
CA	Technician	Female	90007	Hispanic	Divorced	Exceeds	4		
OR	Engineer	Female	97756	White	Divorced	Fully Mee	2		
TX	Executive	Male	78789	Black	Widowed	Exceeds	3		
TX	Engineer	Male	78207	Asian	Widowed	Fully Mee	5		
N	Technician	Female	46204	Other	Single	Fully Mee	5		
GA	Technician	Female	30428	Asian	Married	Fully Mee	3		
CO	Splicer	Male	80820	Other	Single	Fully Mee	3		
KY	Controller	Female	40220	White	Divorced	Fully Mee	3		
NV	Lineman	Male	89139	Asian	Widowed	Exceeds	4		
MA	Laborer	Male	2810	Black	Single	Exceeds	2		
KY	Coordinator	Male	2621	Asian	Widowed	Fully Mee	3		
KY	Director	Male	44553	Other	Widowed	Fully Mee	3		
KY	Supervisor	Female	5360	Other	Married	Exceeds	4		
TX	Driller	Female	16325	White	Divorced	Exceeds	2		

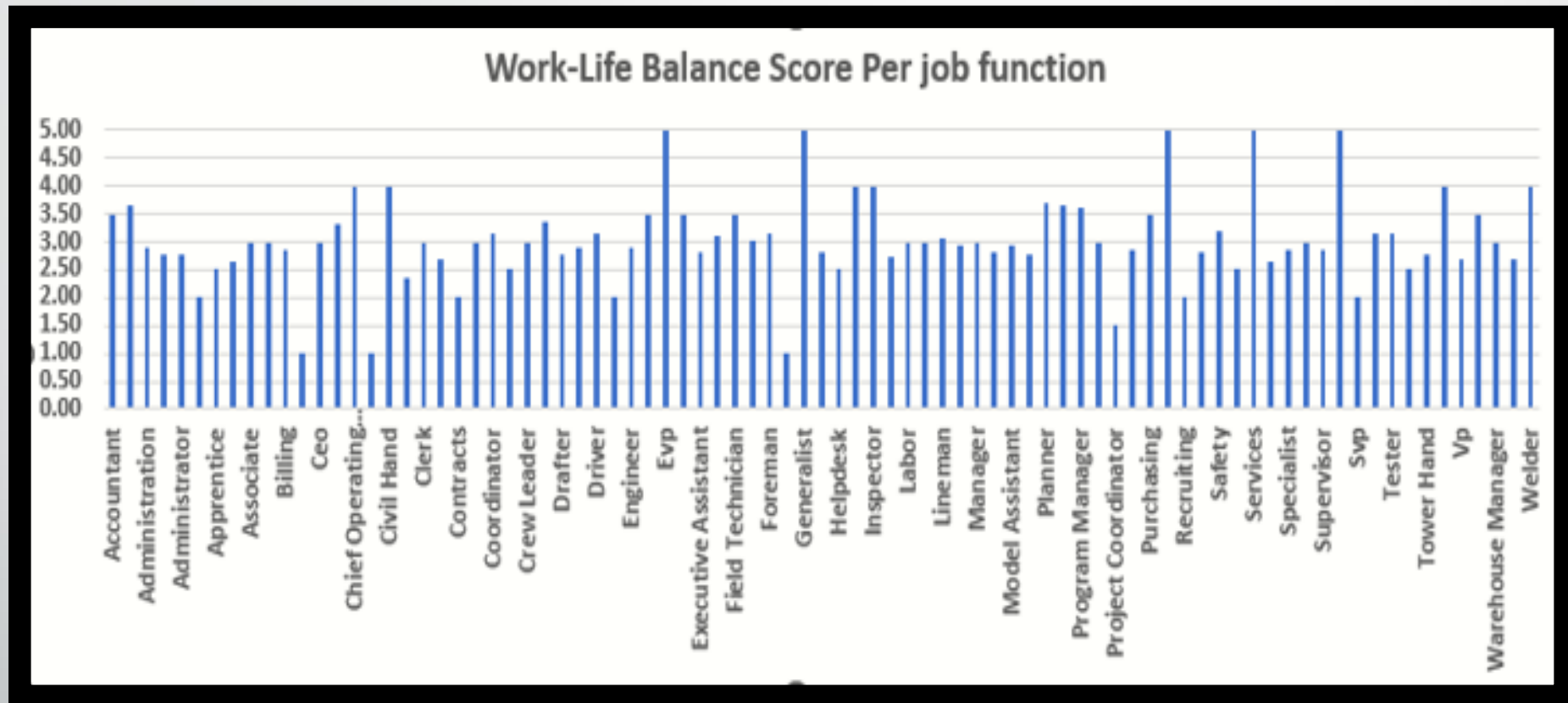


3. Calculate the average "Satisfaction Score" for male and female employees separately using a pivot table.

Gender	Average of Satisfaction Score
Female	3.020214031
Male	3.024279211
Grand Total	3.022



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 with termination type	Count of Employee ID
Terminated for Cause	66
Involuntary	21
Resignation	22
Retirement	10
Voluntary	13
Voluntarily Terminated	321
Involuntary	86
Resignation	74
Retirement	76
Voluntary	85
Grand Total	387

=INDEX(UNIQUE(E2:E100), MATCH(MAX(COUNTIF(E2:E100, UNIQUE(E2:E100))), COUNTIF(E2:E100, UNIQUE(E2:E100)), 0))

The most common "Termination type" among the "Termination for cause" is Resignation

The most common "Termination type" among the "voluntarily termination" is "involuntary"



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

Department	<input type="button" value="▼"/> Average of Engagement Score
Admin Offices	2.925
Executive Office	3.375
IT/IS	3.025581395
Production	2.906435644
Sales	2.990936556
Software Engineering	2.973913043
(blank)	
Grand Total	2.939666667



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

Employee ID	First Name	Last Name	Email
1001	Scott	Sheppard	perezjanet@example.org
1002	Stanley	Lewis	grossmark@example.com
1003	Javier	Li	katiemaldonado@example.com
1004	Christopher	Johnston	sheila73@example.com
1005	Melissa	Hicks	emilypatterson@example.org
1006	Christian	Maddox	pvelasquez@example.net
1007	Paul	Hammond	aclayton@example.net
1008	Madison	Williamson	jeffreyellis@example.com



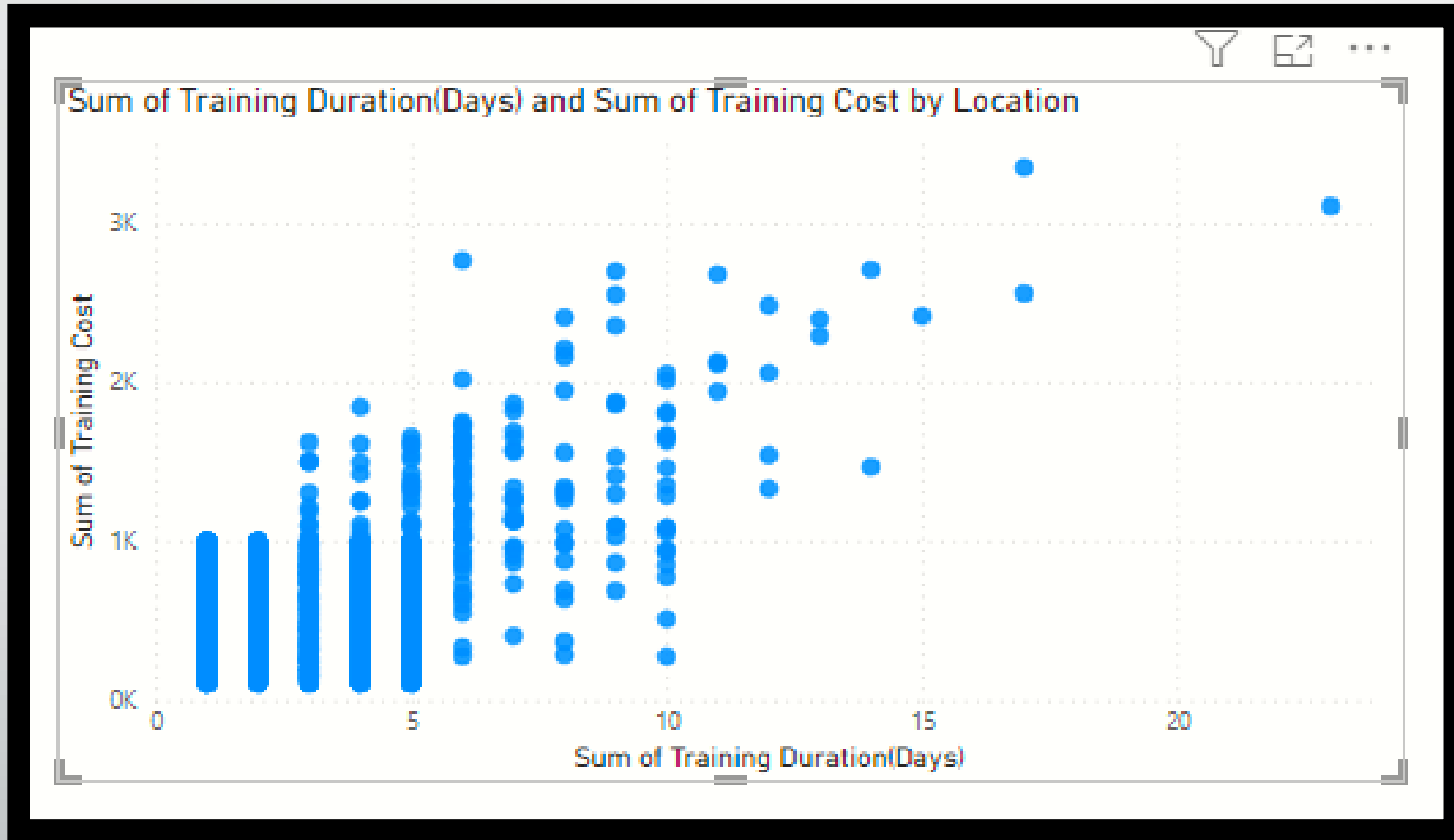
8. Can you identify the department with the highest average "Employee Rating?"

Row Labels	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	2.90
Grand Total	2.97

ADMIN OFFICES: is the highest average of the department in employee rating.



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





10. Build a pivot table that shows the count of employees by "RaceDesc" and "GenderCode."

Count of Employee ID		Column Labels ▼		
Row Labels ▼		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.

✓ <i>fx</i> =INDEX(DataTable[#All],MATCH(AO3,DataTable[#All],[Employee ID]),0),32)						
	AN	AO	AP	AQ	AR	AS
Employee ID		1050				
Training Program Name		Customer Service				



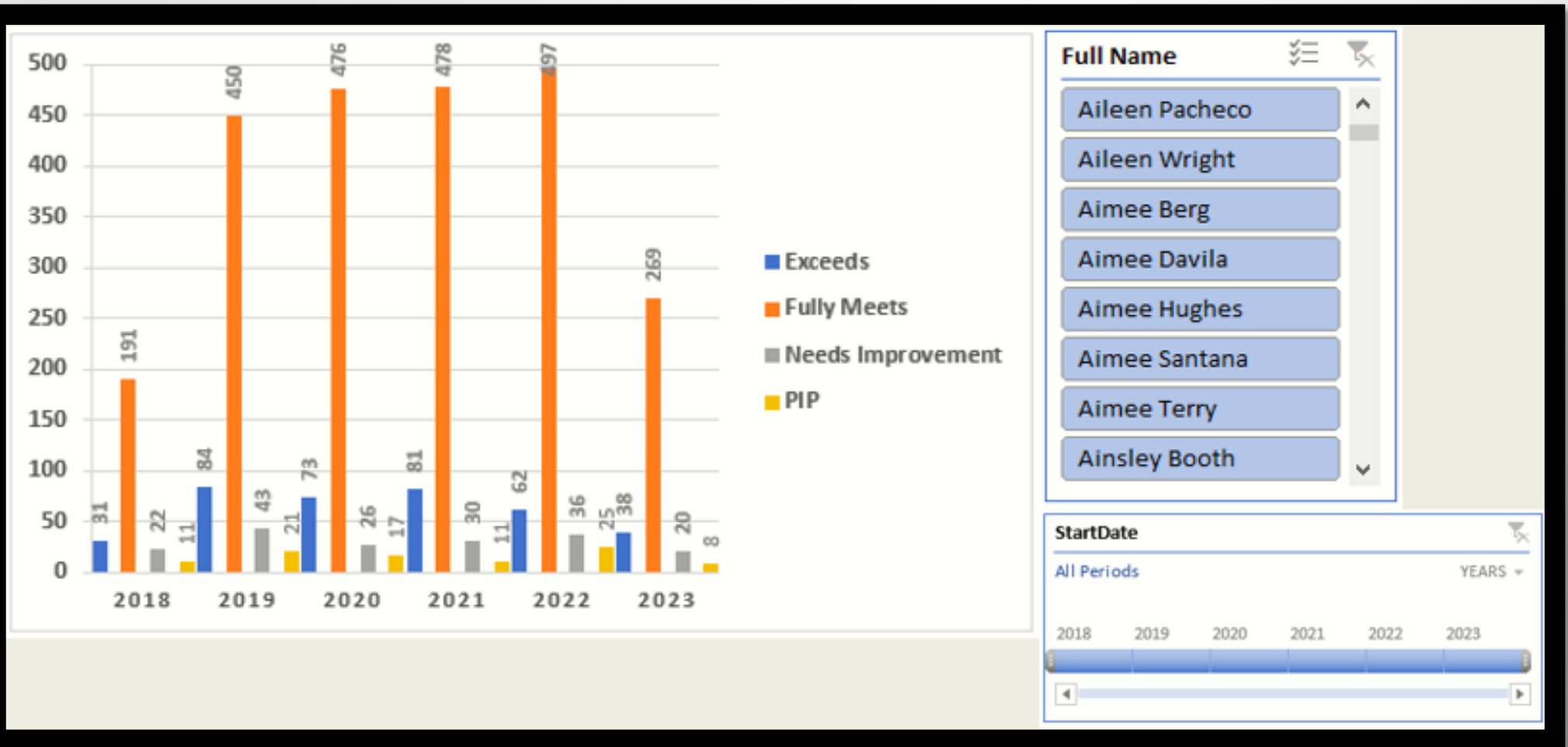
12. Create a multi-level pivot table to analyze the "Performance Score" by "BusinessUnit" and "JobFunctionDescription."

Count of Employee ID	Column Labels					
Row Labels	Exceeds	Fully Meets	Needs Improvement	PIP	Grand Total	
BPC	36	235	24	8	303	
CCDR	39	234	17	10	300	
EW	39	240	16	7	302	
MSC	39	226	20	11	296	
NEL	30	251	11	12	304	
PL	34	241	16	10	301	
PYZ	35	228	23	13	299	
SVG	46	233	20	5	304	
TNS	41	233	15	8	297	
WBL	30	240	15	9	294	
Grand Total	369	2361	177	93	3000	

Count of Employee ID	Column Labels					
Row Labels	Exceeds	Fully Meets	Needs Improvement	PIP	Grand Total	
BPC	36	235	24	8	303	
Administration		3			3	
Administrative	1	5		1	7	
Administrator	1	6	2		9	
Assistant		1			1	
Associate		3			3	
Billing		2			2	
Ceo		1			1	
Cio		1			1	
Clerk		1			1	
Construction Manager		1			1	
Controller		1			1	
Coordinator		5			5	
Director	2	4			6	
Driller	1	2			3	
Driver		4			4	
Electrician		1			1	
Engineer	6	31	3	1	41	

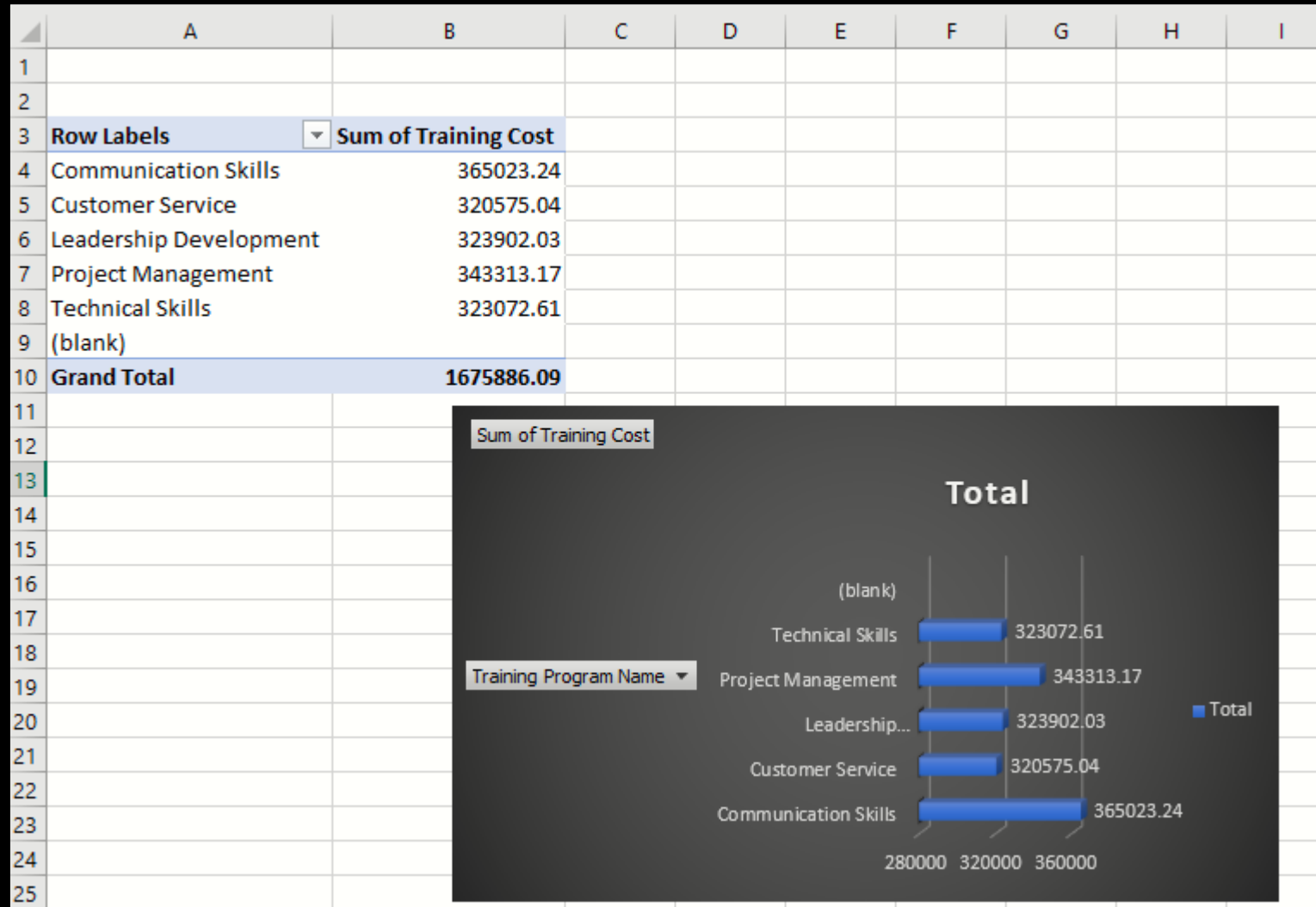


13. Design a dynamic chart that allows users to select and visualize the performance of any employee over time.





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."

Conditional Formatting Rules Manager

Show formatting rules for: **This Table**

New Rule... Edit Rule... Delete Rule

Rule (applied in order shown)	Format	Applies to	Stop If True
Bottom 10%	AaBbCcYyZz	=SAA:SAA	<input type="checkbox"/>
Top 10%	AaBbCcYyZz	=SAA:SAA	<input type="checkbox"/>

OK Close Apply

AA


Current Employee Rating

4
3
4
2
3
3
4
2
3
5
5
3
3
3
4
2
3
4
2
2

Female	40220	White	Divorced	Fully Meets
Male	89139	Asian	Widowed	Exceeds
Male	2810	Black	Single	Exceeds
Male	2621	Asian	Widowed	Fully Meets
Male	44553	Other	Widowed	Fully Meets
Female	5360	Other	Married	Exceeds
Female	16325	White	Divorced	Exceeds
Female	42481	Asian	Widowed	Fully Meets



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

Row Labels 	Average of Engagement Score
2018	2.898039216
2019	3.065217391
2020	2.939189189
2021	2.888333333
2022	2.943548387
2023	2.832835821
Grand Total	2.939666667



17. Can you build a macro that automates the process of updating and refreshing all pivot tables in the workbook?

➤ **Open Visual Basic Editor (VBE):**

Press Alt + F11 to open the Visual Basic Editor in Excel.

➤ **Insert a Module:**

Right-click in the Project Explorer and choose "Insert" > "Module."

➤ **Write VBA Code:**

In the module, write VBA code for identifying and refreshing pivot tables.

➤ **Identifying Pivot Tables:**

Use `ActiveWorkbook`—pivot tables to loop through all pivot tables in the active workbook. Alternatively, use `Sheets("YourSheetName").PivotTables` to specify a sheet.

➤ **Refreshing Pivot Tables:**

Use `PivotTable.RefreshTable` to refresh an individual pivot table.

Use `ActiveWorkbook.RefreshAll` to refresh all pivot tables in the workbook.

➤ **Triggering the Macro:**

Assign the macro to a button or a shortcut key for manual execution.

For automatic execution, use events like `Workbook_Open` for workbook opening or `Worksheet_Change` for data changes.

➤ **Save Workbook:**

Save the workbook as a macro-enabled workbook (.xlsm).

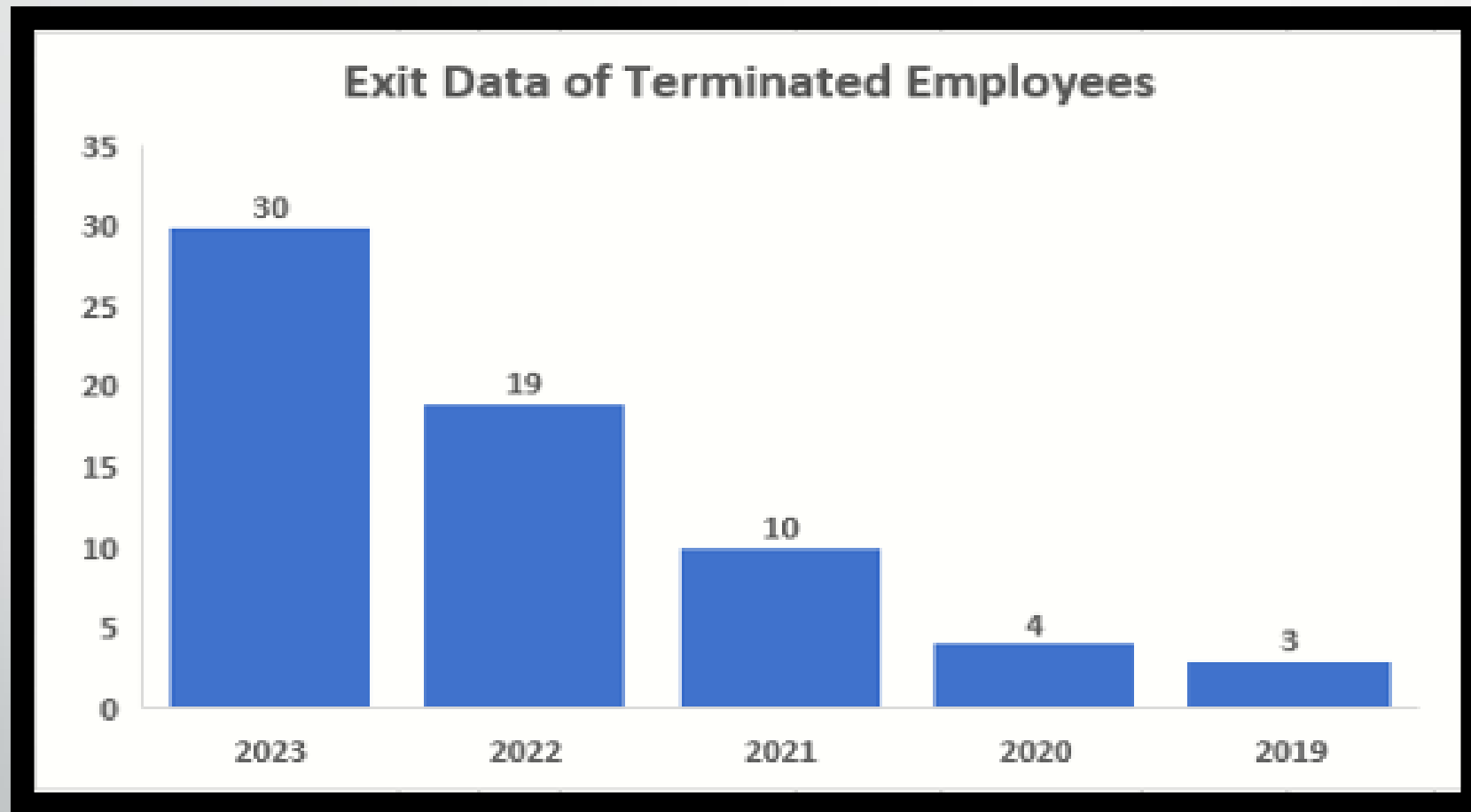
➤ **Execution:**

Execute the macro manually or automatically based on the assigned trigger.

➤ **Adjust Code:**

Modify the code as per specific requirements and workbook structure.

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



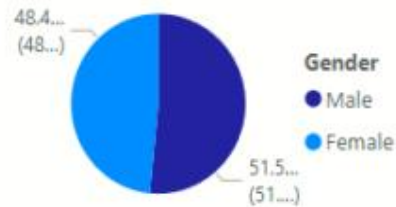
19. Utilize the SUMPRODUCT function to calculate the total training cost for employees in a specific location.

=SUMPRODUCT((I2:I3001),(F2:F3001=M2)*1)			
	L	M	N
	Location	Powellland	
	Total Training Cost	436.98	

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



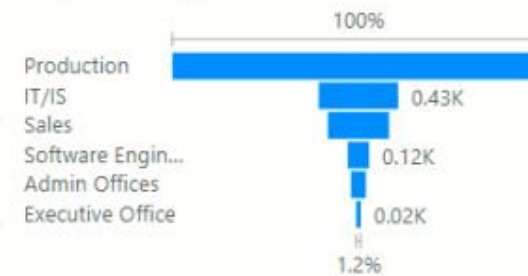
Employee by Gender



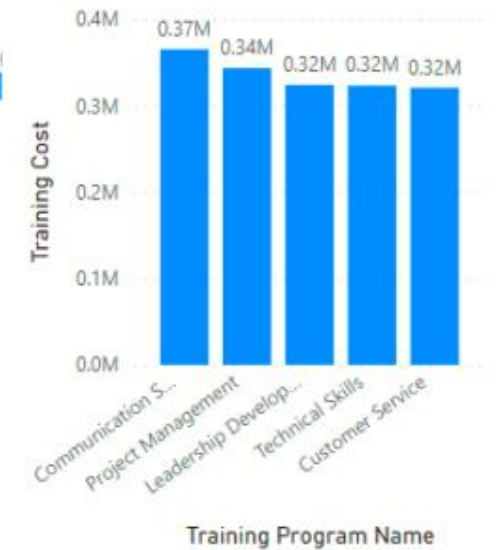
Employee by RaceDesc and Employee Classification Type



Count of EmployeeType by DepartmentType



Training Cost by Training Program Name



Employee by MaritalDesc





Thank You!