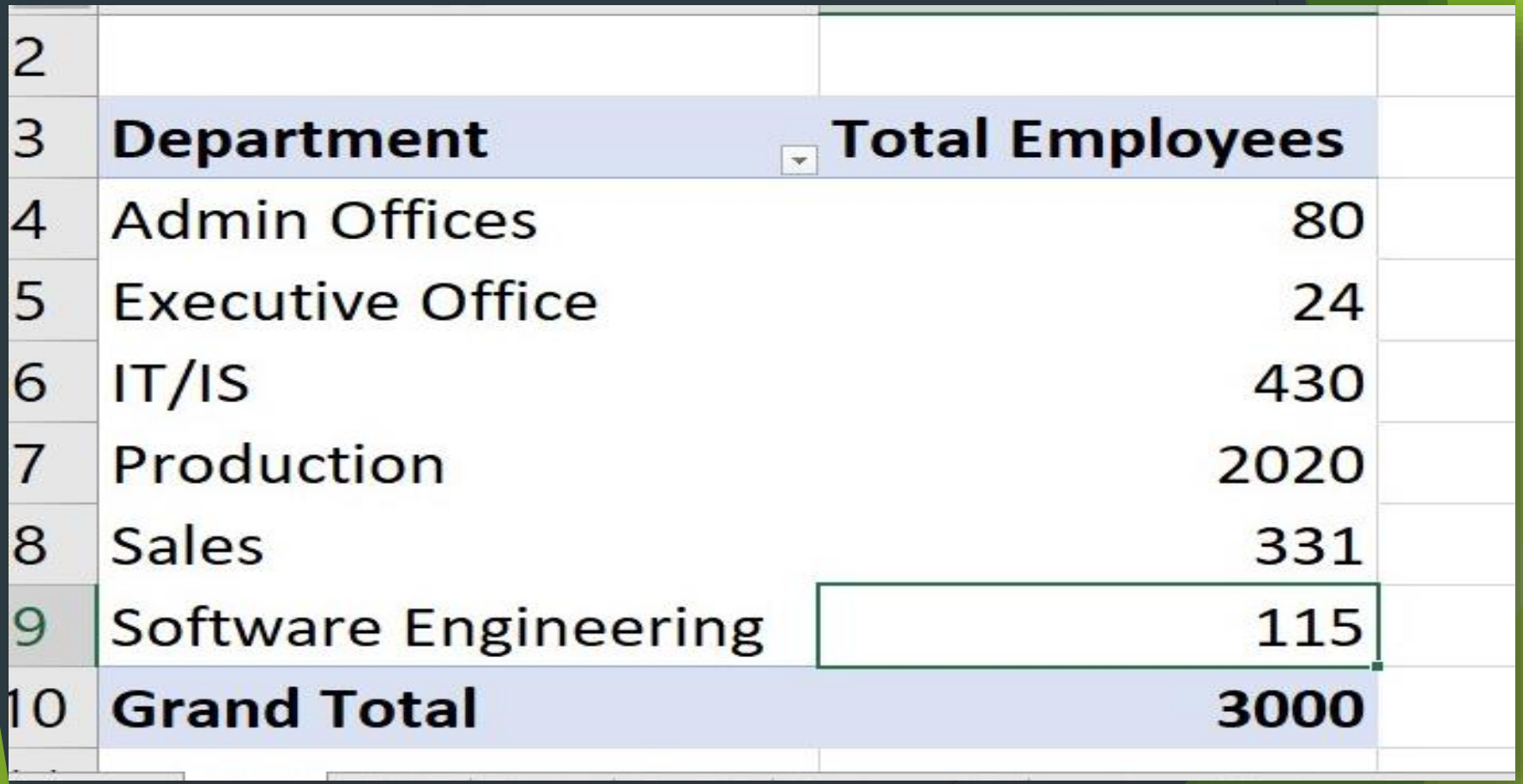
Employee Data Analysis

Internship Project at PSYLIQ

INTRODUCTION

This report presents a comprehensive analysis of Employee data leveraging Excel tools. Through meticulous examination and visualization using pivot tables, charts, and formulas, key insights emerged. Employee turnover rates, performance metrics, and departmental analysis were scrutinized, revealing patterns and opportunities for improvement. The Excel functions streamlined data manipulation, enabling efficient calculations and trend identification. Notably, demographic breakdowns highlighted diversity metrics, aiding in fostering an inclusive workplace. Recommendations include targeted training programs and retention strategies. Excel's robust capabilities proved instrumental in extracting actionable insights, paving the way for informed HR decisions.

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



	Department	Total Employees
2		
3	**Department**	**Total Employees**
4	Admin Offices	80
5	Executive Office	24
6	IT/IS	430
7	Production	2020
8	Sales	331
9	Software Engineering	115
10	**Grand Total**	**3000**

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

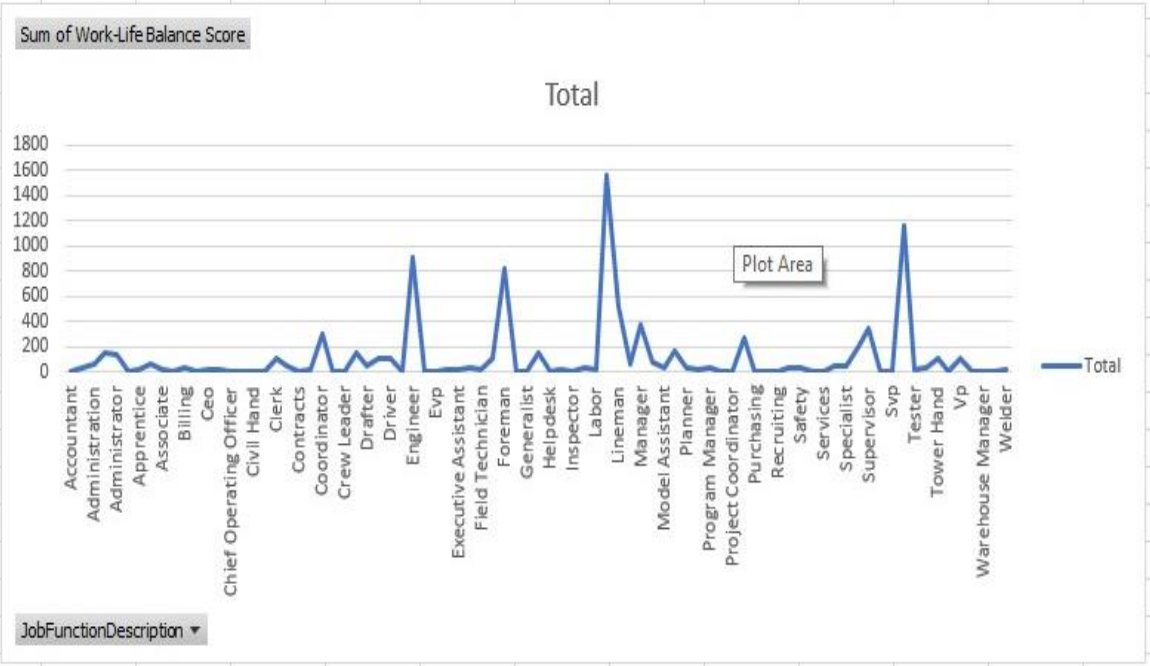
Q	R	S	T	U	V	W	X	Y	Z
Division	DOB	State	JobFunctionDescription	GenderCode	LocationCode	RaceDesc	MaritalDesc	Performance Score	Current Employee Rating
Finance & Accounting	10-07-1969	MA	Accounting	Female	34904	White	Widowed	Fully Meets	4
Aerial	30-08-1965	MA	Labor	Male	6593	Hispanic	Widowed	Fully Meets	3
General - Sga	10-06-1991	MA	Assistant	Male	2330	Hispanic	Widowed	Fully Meets	4
Finance & Accounting	04-04-1998	ND	Clerk	Male	58782	Other	Single	Fully Meets	2
General - Con	29-08-1969	FL	Laborer	Female	33174	Other	Married	Fully Meets	3
Field Operations	04-03-1949	CT	Driver	Male	6050	Black	Married	Fully Meets	3
General - Eng	07-01-1942	CA	Technician	Female	90007	Hispanic	Divorced	Exceeds	4
Engineers	03-07-1957	OR	Engineer	Female	97756	White	Divorced	Fully Meets	2
Executive	15-05-1974	TX	Executive Assistant	Male	78789	Black	Widowed	Exceeds	3
Engineers	11-11-1949	TX	Engineer	Male	78207	Asian	Widowed	Fully Meets	5
Field Operations	26-01-1964	IN	Technician	Female	46204	Other	Single	Fully Meets	5
General - Con	04-06-1948	GA	Technician	Female	30428	Asian	Married	Fully Meets	3
Splicing	24-11-1981	CO	Splicer	Male	80820	Other	Single	Fully Meets	3
Finance & Accounting	11-06-1951	KY	Controller	Female	40220	White	Divorced	Fully Meets	3
General - Con	21-11-1989	NV	Lineman	Male	89139	Asian	Widowed	Exceeds	4
Field Operations	24-11-1952	MA	Laborer	Male	2810	Black	Single	Exceeds	2
Project Management - Con	04-08-1994	KY	Coordinator	Male	2621	Asian	Widowed	Fully Meets	3
Engineers	15-11-1983	KY	Director	Male	44553	Other	Widowed	Fully Meets	3
Project Management - Con	12-07-1985	KY	Supervisor	Female	5260	Other	Married	Exceeds	4

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

	A	B
2		
3	**Row Labels**	**Average of Satisfaction Score**
4	Female	3.020214031
5	Male	3.024279211
6	**Grand Total**	**3.022**
7		

4. Create a chart to visualize the distribution of "Work-Life Balance Score" for different job functions.

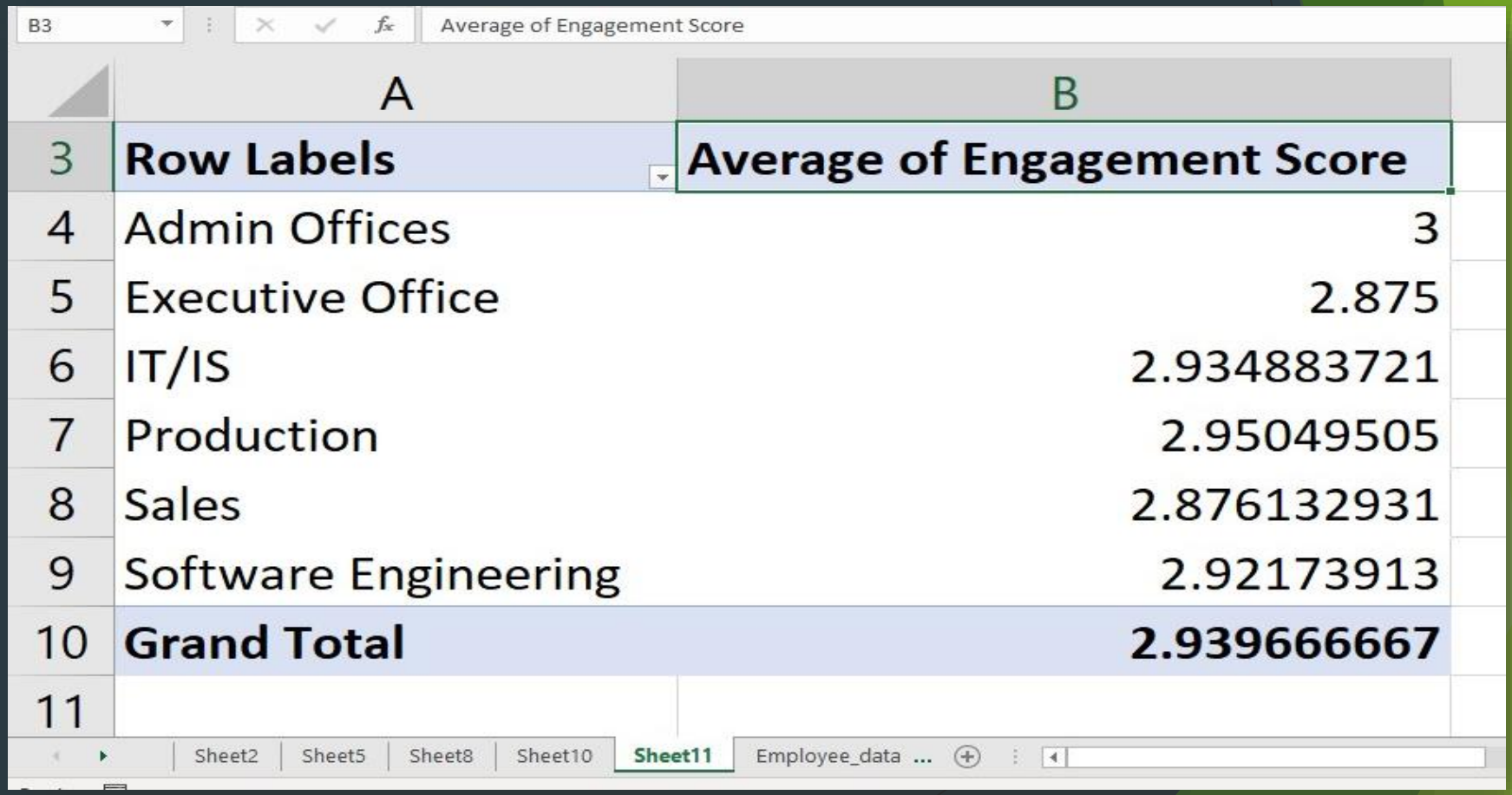
Row Labels	Sum of Work-Life Balance Score
Accountant	7
Accounting	33
Administration	67
Administrative	155
Administrator	138
Analyst	2
Apprentice	15
Assistant	63
Associate	21
Attendant	3
Billing	37
Business Development	1
Ceo	12
Cfo	10
Chief Operating Officer	4
Cio	1
Civil Hand	4
Clerical	7
Clerk	110
Construction Manager	46
Contracts	4



5. Filter the data to display only terminated employees and find out the most common "Termination Type."

	Row Labels	Count of TerminationType
2		
3	**Row Labels**	**Count of TerminationType**
4	Involuntary	388
5	Resignation	380
6	Retirement	377
7	Unk	1467
8	Voluntary	388
9	**Grand Total**	**3000**
10		

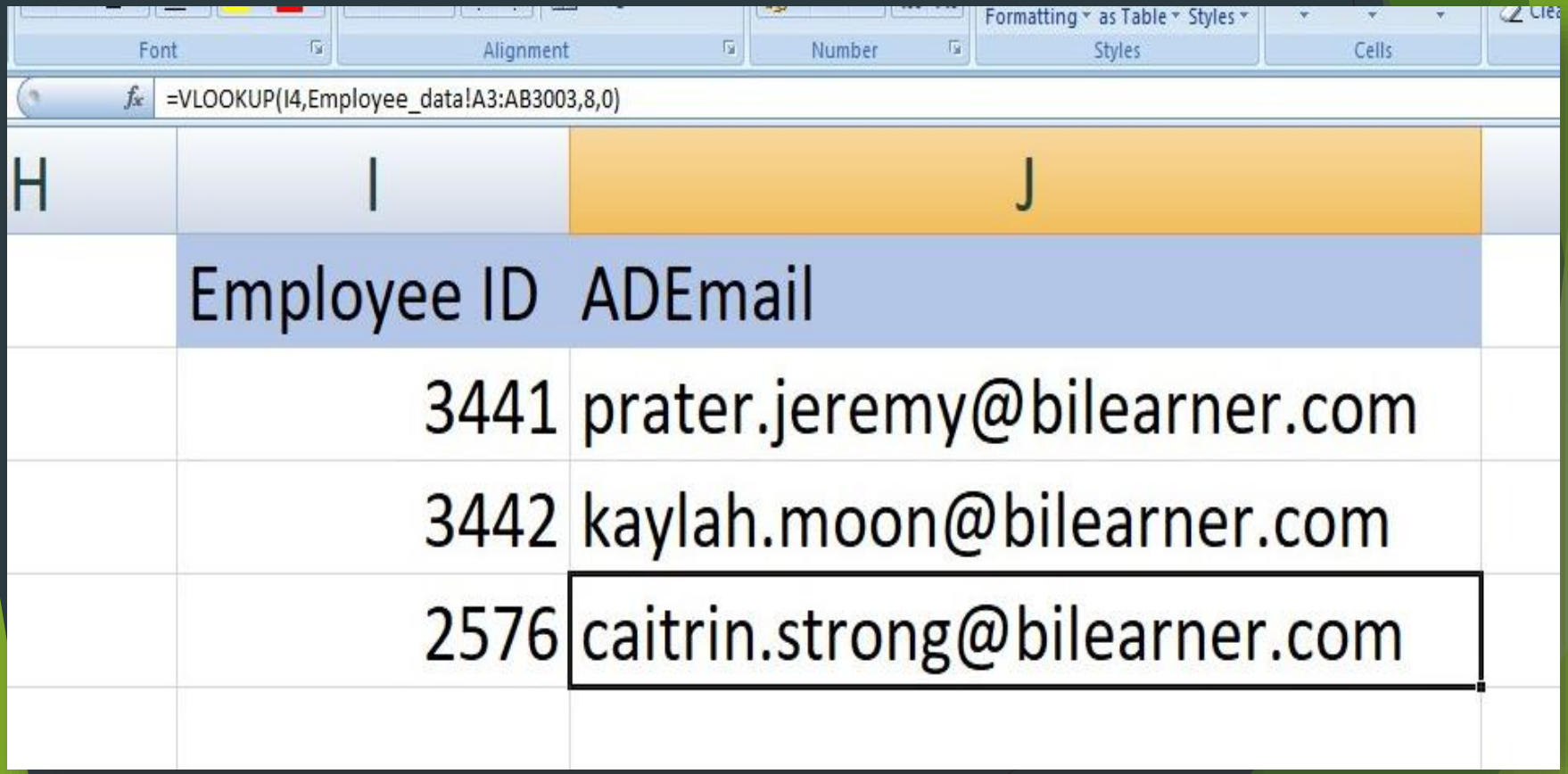
6. Calculate the average "Engagement Score" for each department using a pivot table.



	A	B
3	**Row Labels**	**Average of Engagement Score**
4	Admin Offices	3
5	Executive Office	2.875
6	IT/IS	2.934883721
7	Production	2.95049505
8	Sales	2.876132931
9	Software Engineering	2.92173913
10	**Grand Total**	**2.939666667**
11		

Sheet2 | Sheet5 | Sheet8 | Sheet10 | **Sheet11** | Employee_data ...

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



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

	A	B
1		
2		
3	**Department**	**Average of Current Employee Rating**
4	Admin Offices	3.025
5	Executive Office	2.791666667
6	IT/IS	2.969767442
7	Production	2.982178218
8	Sales	2.909365559
9	Software Engineering	2.904347826
10	**Grand Total**	**2.969**

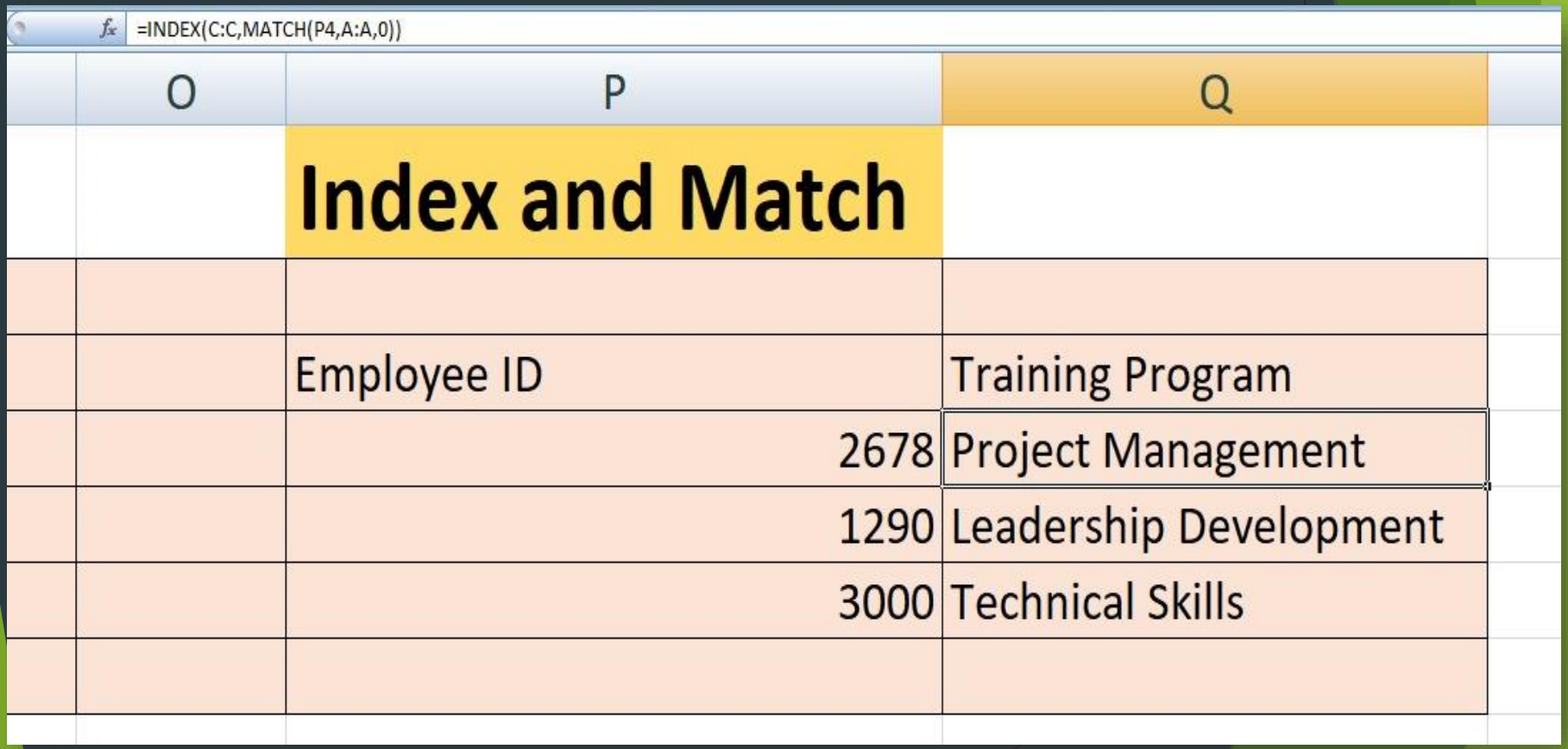
9. Create a scatter plot to explore the relationship between "Training Duration (Days)" and "Training Cost."

Row Labels	Sum of Training Cost
1	351564.82
2	337447.16
3	330620.33
4	324230.66
5	332023.12
Grand Total	1675886.09

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

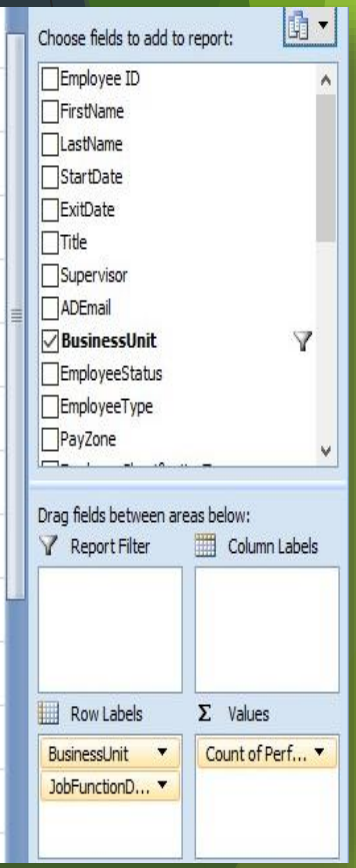
	A	B	C	D
3	**Count of Employee ID**	**Gender**		
4	**Race Desc**	**Female**	**Male**	**Grand Total**
5	Asian	346	283	629
6	Black	346	272	618
7	Hispanic	325	247	572
8	Other	318	264	582
9	White	347	252	599
10	**Grand Total**	**1682**	**1318**	**3000**

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



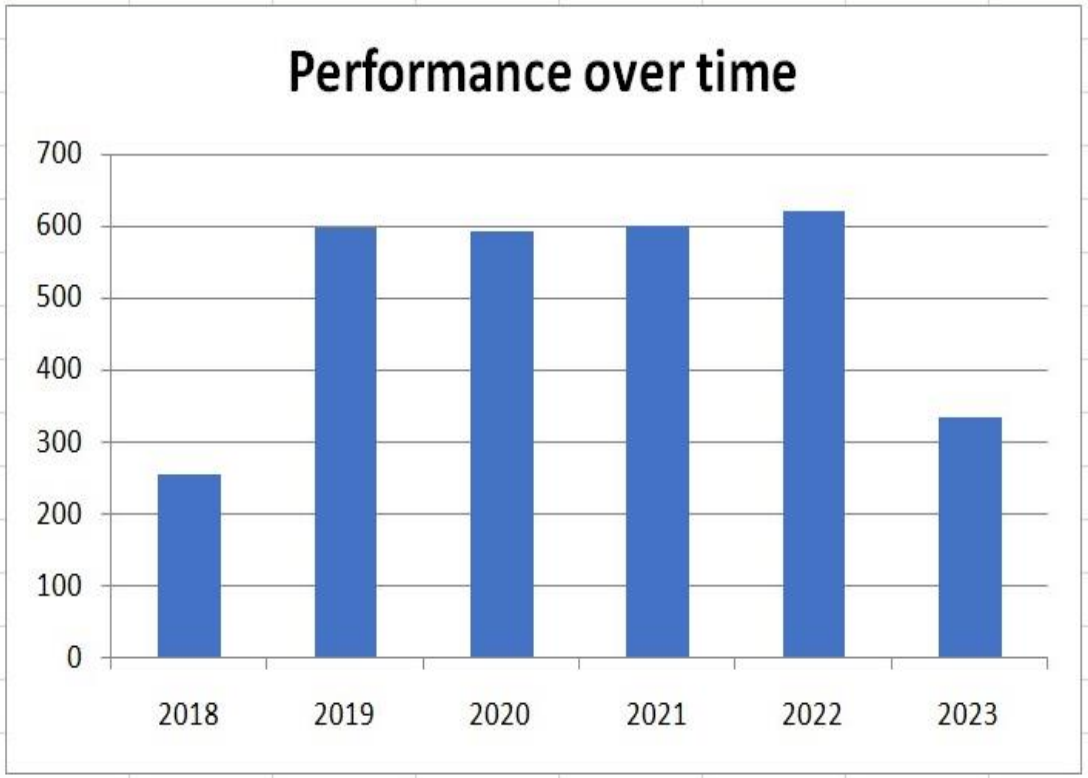
12. Create a multi-level pivot table to analyze the "Performance Score" by "BusinessUnit"and"JobFunctionDescription"

Business Unit	Count of Performance Score
BPC	303
CCDR	300
EW	302
MSC	296
NEL	304
PL	301
PYZ	299
SVG	304
TNS	297
WBL	294
Grand Total	3000



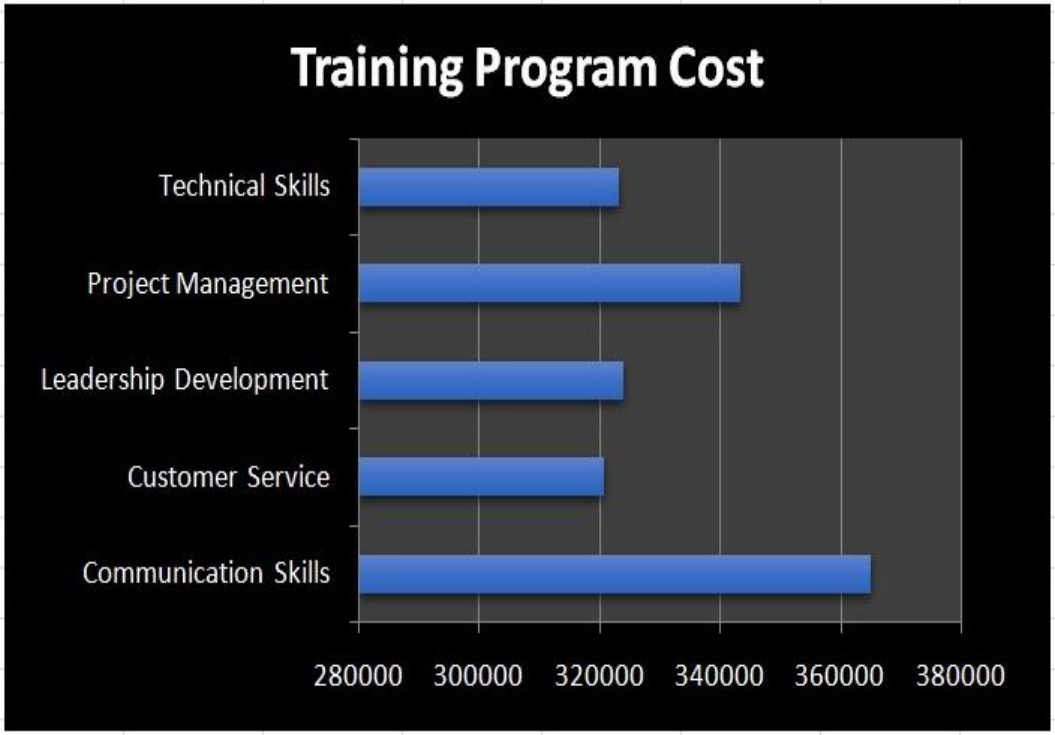
13. Design a dynamic chart that allows users to select and visualize the performance of any employee over time.

Year	Count of Performance Score
2018	255
2019	598
2020	592
2021	600
2022	620
2023	335
Grand Total	3000



14. Calculate the total training cost for each "Training Program Name" and display it in a bar chart.

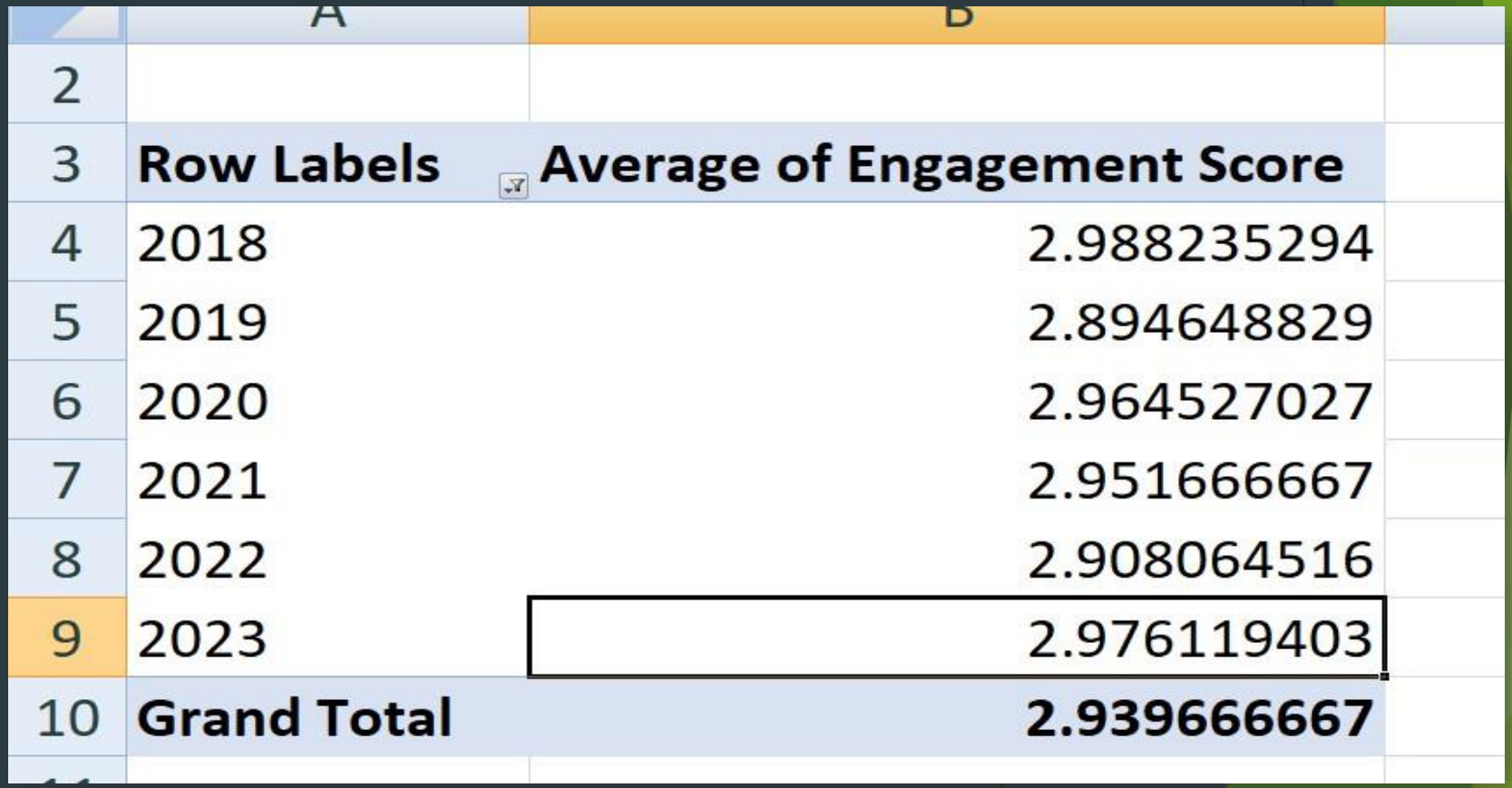
Row Labels	Sum of Training Cost
Communication Skills	365023.24
Customer Service	320575.04
Leadership Development	323902.03
Project Management	343313.17
Technical Skills	323072.61
Grand Total	**1675886.09**



15. Apply advanced conditional formatting to highlight the top 10% and bottom 10% of employees based on "Current Employee Rating."

	R	S	T	U	V	W	X	Y	Z	AA
1	DOB	State	JobFunctionDescription	GenderCode	LocationCode	RaceDesc	MaritalDesc	Performance Score	Current Employee Rating	Work-Life Bala
2	10-07-1969	MA	Accounting	Female	34904	White	Widowed	Fully Meets	4	
3	30-08-1965	MA	Labor	Male	6593	Hispanic	Widowed	Fully Meets	3	
4	10-06-1991	MA	Assistant	Male	2330	Hispanic	Widowed	Fully Meets	4	
5	04-04-1998	ND	Clerk	Male	58782	Other	Single	Fully Meets	2	
6	29-08-1969	FL	Laborer	Female	33174	Other	Married	Fully Meets	3	
7	04-03-1949	CT	Driver	Male	6050	Black	Married	Fully Meets	3	
8	07-01-1942	CA	Technician	Female	90007	Hispanic	Divorced	Exceeds	4	
9	03-07-1957	OR	Engineer	Female	97756	White	Divorced	Fully Meets	2	
10	15-05-1974	TX	Executive Assistant	Male	78789	Black	Widowed	Exceeds	3	
11	11-11-1949	TX	Engineer	Male	78207	Asian	Widowed	Fully Meets	5	
12	26-01-1964	IN	Technician	Female	46204	Other	Single	Fully Meets	5	
13	04-06-1948	GA	Technician	Female	30428	Asian	Married	Fully Meets	3	
14	24-11-1981	CO	Splicer	Male	80820	Other	Single	Fully Meets	3	
15	11-06-1951	KY	Controller	Female	40220	White	Divorced	Fully Meets	3	
16	21-11-1989	NV	Lineman	Male	89139	Asian	Widowed	Exceeds	4	
17	24-11-1952	MA	Laborer	Male	2810	Black	Single	Exceeds	2	
18	04-08-1994	KY	Coordinator	Male	2621	Asian	Widowed	Fully Meets	3	
19	15-11-1983	KY	Director	Male	44553	Other	Widowed	Fully Meets	3	
20	12-07-1985	KY	Supervisor	Female	5360	Other	Married	Exceeds	4	
21	05-01-1996	TX	Driller	Female	16325	White	Divorced	Exceeds	2	
22	17-02-1964	TX	Technician	Female	43481	Asian	Widowed	Fully Meets	3	
23	05-12-1958	TX	Specialist	Male	50705	Asian	Widowed	Fully Meets	3	
24	18-09-1992	CO	Technician	Male	5168	Black	Single	Fully Meets	5	
25	08-11-1994	CO	Operator	Male	11765	Other	Single	Exceeds	2	

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



	A	B
2		
3	**Row Labels**	**Average of Engagement Score**
4	2018	2.988235294
5	2019	2.894648829
6	2020	2.964527027
7	2021	2.951666667
8	2022	2.908064516
9	2023	2.976119403
10	**Grand Total**	**2.939666667**

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

Yes, I can build a Macro that automates the process of updating and refreshing the pivot table Here I am summarizing the Total training cost of training programs.

Training program Name	Total Training Cost
Communication Skills	3,65,023.24
Customer Service	3,20,575.04
Leadership Development	3,23,902.03
Project Management	3,43,313.17
Technical Skills	3,23,072.61
Grand Total	**16,75,886.09**

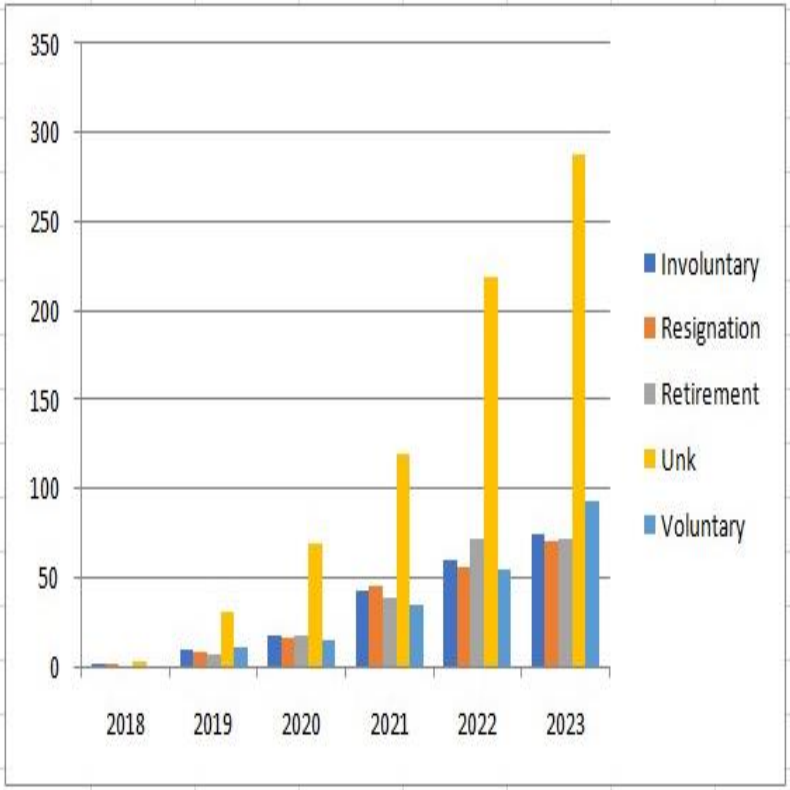
Now, I will create a macro that will refresh the table. First of all, I will turn on the developer option and then I will record a macro and refresh the pivot table by clicking any cell in the pivot table and then I will stop recording a macro. I will insert a button for refreshing the table. After that, From the source table, I will delete the communication training program. I will come back to the pivot table and click on the Refresh button.

Training program Name	Total Training Cost
Customer Service	3,20,575.04
Leadership Development	3,23,902.03
Project Management	3,43,313.17
Technical Skills	3,23,072.61
(blank)	3,65,023.24
Grand Total	**16,75,886.09**

Refresh

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

Count of Employee ID	Termination Ty					
Exit Year	Involuntary	Resignation	Retirement	Unk	Voluntary	Grand Total
2018	1	1		2		4
2019	9	7	6	30	10	62
2020	17	15	17	69	15	133
2021	42	45	38	119	34	278
2022	60	55	71	219	55	460
2023	74	70	71	288	93	596
Grand Total	**203**	**193**	**203**	**727**	**207**	**1533**

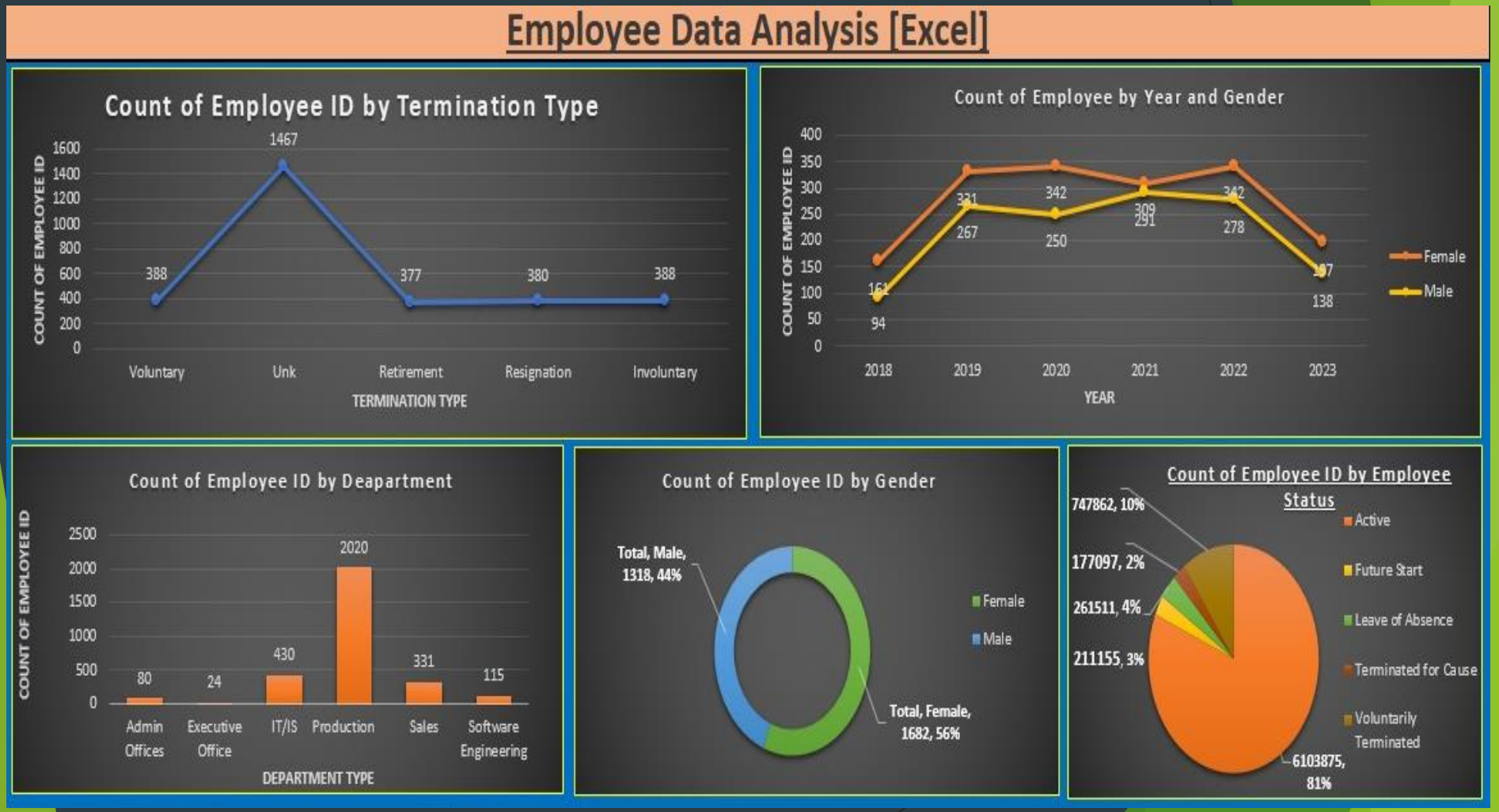


19. Utilize the SUMPRODUCT function to calculate the total training cost for employees in a specific location.

	A	B	C	D
1				
2				
3	**Row Labels**	**Sum of Training Cost**		SUMPRODUCT
4	Aaronborough	841.22		2950.36
5	Aaronburgh	633.96		
6	**Grand Total**	**1475.18**		
7				

1			
2			
3	**Row Labels**	**Sum of Training Cost**	SUMPRODUCT
4	Brittneyfort	747.74	7374.38
5	Brittneyside	963.23	
6	Brittneystad	615.7	
7	Brookefort	586.89	
8	Brookeport	773.63	
9	**Grand Total**	**3687.19**	

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



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