

Employee Data Analysis

Presentation by Srinithi Jaikumar

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Objective

- Gain proficiency in data visualization principles and the skill to extrapolate meaningful insights from extensive datasets.
- Extract actionable conclusions concerning turnover rates, employee engagement, and training expenditures.
- Acquire the ability to swiftly adopt new methodologies and convey discoveries clearly.
- Enhance analytical proficiency through immersive, hands-on experiences to progress within the realm of data analysis.

Data Overview

The dataset under analysis comprises 3000 rows and 26 columns, each representing a distinct aspect of the workforce.

EmployeeID: Likely an identifier or an index for the dataset.

FirstName: Employee's first name.

LastName: Employee's last name.

StartDate: Date the employee started working.

ExitDate: Date the employee left the company (if applicable).

Title: Job title of the employee.

Supervisor: Name of the employee's supervisor.

ADEmail: Email address of the employee.

BusinessUnit: Business unit or department the employee belongs to.

EmployeeStatus: Current status of the employee (e.g., active, terminated).

Data Overview

EmployeeType: Type of employee (e.g., full-time, part-time).

PayZone: Pay zone or salary grade of the employee.

EmployeeClassificationType: Classification type of the employee (e.g., permanent, temporary).

TerminationType: Type of termination (if applicable, e.g., voluntary, involuntary).

TerminationDescription: Description or reason for termination (if applicable).

DepartmentType: Type of department the employee belongs to.

Division: Division within the organization the employee belongs to.

DOB: Date of birth of the employee.

State: State where the employee is located.

Data Overview

JobFunctionDescription: Description of the employee's job function.

GenderCode: Gender of the employee.

LocationCode: Code representing the employee's location.

RaceDesc: Description of the employee's race.

MaritalDesc: Marital status of the employee.

Performance Score: Score representing the employee's performance.

Current Employee Rating: Current rating of the employee.

Data Overview

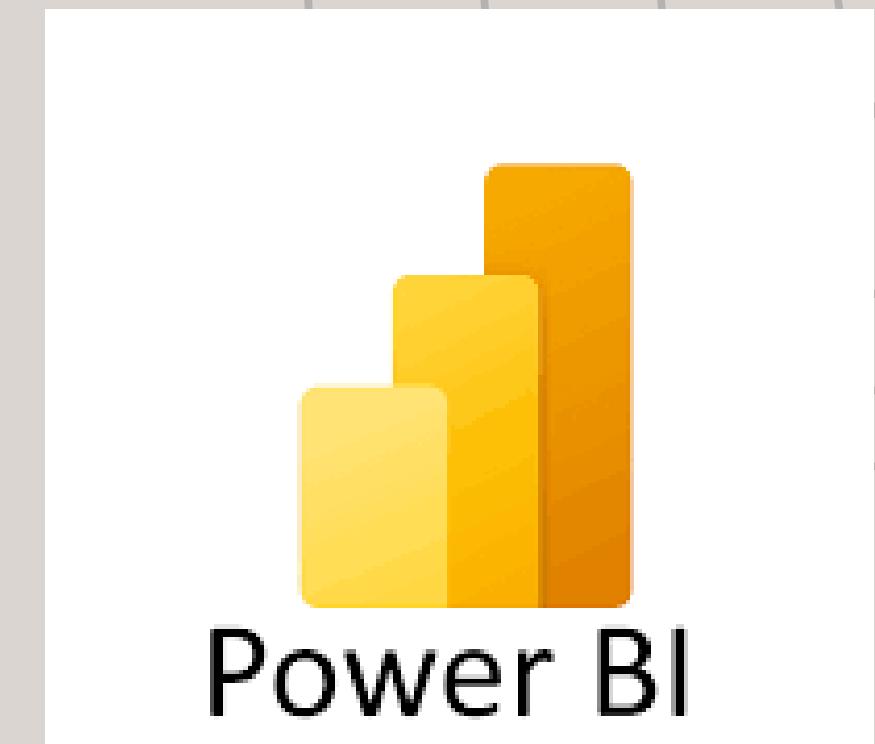
Column1	FirstName	LastName	StartDate	ExitDate	Title	Supervisor	ADM	Business	EmployeeS	EmployeeT	PayZo	EmployeeClassification	Termination	TerminationDescr	Department	Divisi	DOB	State	JobFunctionDesc	GenderC	LocationC	RaceD	MaritalD	Performance	Current Employee
3427 Uriah	Bridges	#####	Producti	Peter Oneill uriah.bridg CCSR	Active	Contract	Zone C	Temporary	Unk			Production	Finance	10-07-1969	MA	Accounting	Female	34904	White	Widowed	Fully Meets	4			
3428 Paula	Small	11-Feb-23	Producti	Renee Moco paula.sma EW	Active	Contract	Zone A	Part-Time	Unk			Production	Aerial	30-08-1965	MA	Labor	Male	6593	Hispanic	Widowed	Fully Meets	3			
3429 Edward	Buck	10-Dec-18	Area Sal	Crystal Walk edward.bu PL	Active	Full-Time	Zone B	Part-Time	Unk			Sales	General	10-06-1991	MA	Assistant	Male	2330	Hispanic	Widowed	Fully Meets	4			
3430 Michael	Riordan	21-Jun-21	Area Sal	Rebekah Wi michael.ri CCSR	Active	Contract	Zone A	Full-Time	Unk			Sales	Finance	04-04-1998	ND	Clerk	Male	58782	Other	Single	Fully Meets	2			
3431 Jasmine	Onque	29-Jun-19	Area Sal	Jason Kim jasmine.or TNS	Active	Contract	Zone A	Temporary	Unk			Sales	General	29-08-1969	FL	Laborer	Female	33174	Other	Married	Fully Meets	3			
3432 Maruk	Fraval	17-Jan-20	Area Sal	Sheri Campi maruk.frav BPC	Active	Contract	Zone B	Full-Time	Unk			Sales	Field Ope	04-03-1949	CT	Driver	Male	6050	Black	Married	Fully Meets	3			
3433 Latia	Costa	#####	Area Sal	Jacob Braui latia.costa WBL	Active	Full-Time	Zone B	Temporary	Involuntary	Me see picture nature di	Sales	General	07-01-1942	CA	Technician	Female	90007	Hispanic	Divorced	Exceeds	4				
3434 Sharlene	Terry	#####	Area Sal	Tracy Marqu sharlene.t CCSR	Active	Contract	Zone C	Full-Time	Involuntary	Blue community type ski	Sales	Engineers	03-07-1957	OR	Engineer	Female	97756	White	Divorced	Fully Meets	2				
3435 Jac	McKinzie	18-Aug-18	Area Sal	Sharon Bec jac.mckin NEL	Active	Contract	Zone B	Part-Time	Unk			Sales	Executive	15-05-1974	TX	Executive Assistant	Male	78789	Black	Widowed	Fully Meets	3			
3436 Joseph	Martins	21-Jan-22	Area Sal	George Jen joseph.me BPC	Active	Part-Time	Zone B	Temporary	Resignation	Summer personal bag.	Sales	Engineers	11-11-1949	TX	Engineer	Male	78207	Asian	Widowed	Fully Meets	5				
3437 Myriam	Givens	#####	Area Sal	Troy White myriam.giv SVG	Active	Contract	Zone B	Temporary	Unk			Sales	Field Ope	26-01-1964	IN	Technician	Female	46204	Other	Single	Fully Meets	5			
3438 Dheepa	Nguyen	10-Aug-18	Area Sal	Brian Miller dheepa.ng MSC	Active	Full-Time	Zone C	Temporary	Retirement	Alone once than. More	Sales	General	04-06-1948	GA	Technician	Female	30428	Asian	Married	Fully Meets	3				
3439 Bartholem	Khemmich	#####	Area Sal	Charles Parl bartholem Ew	Active	Full-Time	Zone A	Temporary	Involuntary	Foot in theory minute rec	Sales	Splicing	24-11-1981	CO	Splicer	Male	80820	Other	Single	Fully Meets	3				
3440 Xana	Potts	#####	Area Sal	Gregory Wa xana.potts CCSR	Active	Contract	Zone A	Full-Time	Resignation	Degree wish science wk	Sales	Finance	11-06-1951	KY	Controller	Female	40220	White	Divorced	Fully Meets	3				
3441 Prater	Jeremy	28-Apr-19	Area Sal	Tyler Lewis prater.jere BPC	Active	Part-Time	Zone A	Part-Time	Unk			Sales	General	21-11-1989	NV	Lineman	Male	89139	Asian	Widowed	Exceeds	4			
3442 Kaylah	Moon	09-Jul-19	Area Sal	Ashley Scot kaylah.mo PYZ	Active	Full-Time	Zone A	Full-Time	Retirement	Fear particular method s	IT/IS	Field Ope	24-11-1952	MA	Laborer	Male	2810	Black	Single	Exceeds	2				
3443 Kristen	Tate	05-Apr-21	Area Sal	Lauren Jonk kristen.tat WBL	Active	Full-Time	Zone C	Part-Time	Voluntary	Wall body wonder succ	IT/IS	Project M	04-08-1994	KY	Coordinator	Male	2621	Asian	Widowed	Fully Meets	3				
3444 Bobby	Rodgers	#####	Area Sal	Matthew Jac bobby.rod NEL	Active	Contract	Zone A	Part-Time	Voluntary	Visit foot nearly radio tre	Sales	Engineers	15-11-1983	KY	Director	Male	44553	Other	Widowed	Fully Meets	3				
3445 Reid	Park	16-Jan-21	Area Sal	Michelle Mit reid.park@ PL	Active	Contract	Zone C	Full-Time	Unk			Sales	Project M	12-07-1985	KY	Supervisor	Female	5360	Other	Married	Exceeds	4			
3446 Hector	Dalton	#####	Area Sal	Sydney Fier hector.dal BPC	Active	Part-Time	Zone A	Part-Time	Unk			Sales	Field Ope	05-01-1996	TX	Driller	Female	16325	White	Divorced	Exceeds	2			
3447 Mariela	Schultz	#####	Area Sal	Michelle Eva mariela.sc CCSR	Future Start	Part-Time	Zone C	Part-Time	Involuntary	Unit pass office souther	Sales	General	17-02-1964	TX	Technician	Female	43481	Asian	Widowed	Fully Meets	3				
3448 Angela	Molina	01-Oct-19	Area Sal	Patricia Coc angela.mc SVG	Future Start	Full-Time	Zone A	Temporary	Retirement	List class mind.	Sales	Engineers	05-12-1958	TX	Specialist	Male	50705	Asian	Widowed	Fully Meets	3				
3449 Gerald	Preston	#####	Area Sal	Ashley Reeve gerald.pre Ew	Future Start	Contract	Zone B	Temporary	Involuntary	Price third parent evenir	Sales	General	18-03-1992	CO	Technician	Male	5168	Black	Single	Fully Meets	5				
3450 Reilly	Moyer	#####	Area Sal	Stanley Harr reilly.moye MSC	Active	Contract	Zone C	Temporary	Resignation	Cause military a sense.	Sales	Field Ope	08-11-1994	CO	Operator	Male	11765	Other	Single	Exceeds	2				
3451 Carlee	French	18-Feb-21	Area Sal	Michael Bra carlee.freer TNS	Active	Contract	Zone C	Full-Time	Voluntary	Station another son pos	Sales	General	15-01-1968	CO	Technician	Male	71071	Other	Divorced	Exceeds	3				
3452 Jaydon	Blackburn	#####	Area Sal	Debbie Cros jaydon.bl PYZ	Active	Part-Time	Zone A	Part-Time	Unk			Sales	General	01-07-1947	IN	Foreman	Male	12122	Black	Divorced	Fully Meets	2			
3453 Bridger	Carter	13-Oct-22	Area Sal	Elizabeth Ta bridger.ca WBL	Active	Contract	Zone C	Part-Time	Unk			Sales	Fielders	04-07-1982	MA	Engineer	Male	87065	White	Widowed	Fully Meets	4			
3454 Leon	Beard	11-Sep-22	Area Sal	Brian Dunlap leon.bea PYZ	Active	Full-Time	Zone C	Full-Time	Unk			IT/IS	General	29-01-1970	KY	Foreman	Male	10415	Hispanic	Married	Needs Improvement	4			
3455 Charity	Miranda	29-Jun-21	Area Sal	Daniel Rodri charity.mir WBL	Active	Full-Time	Zone C	Temporary	Resignation	Pm local take example fi	Sales	Project M	18-01-1999	KY	Manager	Male	3763	Other	Widowed	Exceeds	4				
3456 Axel	Howe	#####	Area Sal	Martin Hamr axel.how NEL	Active	Full-Time	Zone A	Temporary	Unk			Sales	Field Ope	25-03-1946	KY	Technician	Female	79623	Black	Divorced	Fully Meets	3			
3457 Milton	Wall	#####	Area Sal	Sara Bell milton.wall PL	Active	Full-Time	Zone B	Temporary	Unk			Sales	Engineers	23-08-1947	KY	Technician	Female	69189	White	Divorced	Needs Improvement	3			
3458 Cory	Robinson	#####	Area Sal	Elizabeth Ar cory.robin BPC	Future Start	Contract	Zone A	Full-Time	Voluntary	Several young whether	Sales	Field Ope	08-12-1996	TX	Laborer	Female	5194	Hispanic	Single	Needs Improvement	3				
3459 Saniya	Yu	18-Apr-21	Area Sal	Erin Bailey saniya.yu CCSR	Future Start	Part-Time	Zone A	Full-Time	Retirement	Science end approach	Sales	General	02-03-1944	TX	Splicer	Male	8779	Black	Widowed	Exceeds	2				
3460 Alisa	James	#####	Area Sal	Dennis Hen alisa.jame SVG	Active	Full-Time	Zone A	Full-Time	Unk			Sales	Aerial	02-10-1944	TX	Lineman	Male	74682	Asian	Married	Fully Meets	3			
3461 Lincoln	Compton	18-Jul-19	Area Sal	Tammy Con lincoln.co Ew	Future Start	Full-Time	Zone C	Part-Time	Resignation	Base scene central unit	Sales	General	23-12-1997	CO	Foreman	Male	78046	Hispanic	Married	Needs Improvement	1				
3462 Aliana	Nolan	13-Sep-18	Area Sal	Brianna Mat aliana.nol. MSC	Active	Contract	Zone A	Full-Time	Involuntary	Yourself book budget pr	Sales	Field Ope	08-03-1942	CO	Coordinator	Male	27270	Hispanic	Divorced	Needs Improvement	3				
3463 Kayden	Dodson	18-Jul-21	Area Sal	Jessica Peti kayden.de TNS	Active	Part-Time	Zone A	Temporary	Retirement	Paper can score else in	Sales	Field Ope	21-06-1951	IN	Tower Hand	Male	12703	Hispanic	Single	Fully Meets	1				
3464 James	Duke	#####	Area Sal	Mark Harris james.duk PYZ	Active	Contract	Zone B	Full-Time	Involuntary	Stuff different color how	Sales	Shop Fle	17-06-1998	MA	Mechanic	Male	66835	Black	Widowed	Needs Improvement	5				
3465 Willow	Stuart	#####	Area Sal	Elizabeth Ta willow.stua WBL	Active	Full-Time	Zone B	Full-Time	Unk			Sales	General	01-07-1962	MA	Flagger	Male	66150	Asian	Divorced	Needs Improvement	3			
3466 Clark	Ull	10-Aug-22	Area Sal	John Ull clark.uu CCSR	Active	Part-Time	Zone C	Full-Time	Unk			IT/IS	General	06-01-1970	KY	Painter	Male	61280	Other	Married	Fully Meets	4			

Tools Used



MS Excel

Excel will provide a familiar platform for initial data cleaning, exploration, and basic visualizations.



Power BI

Power BI will then come into play, allowing us to create sophisticated dashboards and interactive reports that bring our findings to life

Questions

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

The screenshot shows a Microsoft Excel interface with a PivotTable created on the 'Sheet2' tab. The PivotTable summarizes the count of employee IDs by department type. The data is as follows:

Row Labels	Count of Employee ID
Admin Offices	80
Executive Office	24
IT/IS	430
Production	2020
Sales	331
Software Engineering	115
Grand Total	3000

The PivotTable Fields pane on the right indicates that the 'DepartmentType' field is selected under the 'Values' category, contributing to the count of employee IDs.

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

The screenshot shows a Microsoft Excel spreadsheet titled "employee_data". The spreadsheet contains three columns: X (MaritalDesc), Y (Performance Score), and Z (Current Employee Rating). The data includes various marital statuses and performance scores. A conditional formatting rule is being applied to the "Performance Score" column (Y).

The "New Formatting Rule" dialog box is open, showing the following settings:

- Select a Rule Type:** "Format only cells that contain".
- Edit the Rule Description:** "Format values where this formula is true: $=\$Z2 < 3$ ".
- Preview:** A red box with white text "AaBbCcYyZz" is shown.
- Buttons:** OK and Cancel.

The Excel ribbon is visible at the top, showing tabs like File, Home, Insert, Draw, Page Layout, Formulas, Data, Review, View, Help, and Table Design. The "Home" tab is selected. The status bar at the bottom shows "Ready" and "Accessibility: Investigate".

X	Y	Z	
1	MaritalDesc	Performance Score	Current Employee Rating
2	Widowed	Fully Meets	4
3	Widowed	Fully Meets	3
4	Widowed	Fully Meets	4
5	Single	Fully Meets	2
6	Married	Fully Meets	3
7	Married	Fully Meets	3
8	Divorced	Exceeds	4
9	Divorced	Fully Meets	2
10	Widowed	Exceeds	3
11	Widowed	Fully Meets	5
12	Single	Fully Meets	5
13	Married	Fully Meets	3
14	Single	Fully Meets	3
15	Divorced	Fully Meets	3
16	Widowed	Exceeds	4
17	Single	Exceeds	2
18	Widowed	Fully Meets	3
19	Widowed	Fully Meets	3

A5 : X ✓ fx 3430

	Employee ID	FirstName	LastName	StartDate	ExitDate	Title	Supervisor	ADEmail	BusinessUnit	EmployeeStatus	EmployeeType	PayZone	EmployeeClassificationType	TerminationType	TerminationDescription
2	3427	Uriah	Bridges	20-Sep-19		Production	Peter Oneill	uriah.bridge@CCDR	CCDR	Active	Contract	Zone C	Temporary	Unk	
3	3428	Paula	Small	11-Feb-23		Production	Renee Mccor	paula.small@EW	EW	Active	Contract	Zone A	Part-Time	Unk	
4	3429	Edward	Buck	10-Dec-18		Area Sales	Crystal Walke	edward.buck@PL	PL	Active	Full-Time	Zone B	Part-Time	Unk	
5	3430	Michael	Riordan	21-Jun-21		Area Sales	Rebekah Wrig	michael.rio@CCDR	CCDR	Active	Contract	Zone A	Full-Time	Unk	
6	3431	Jasmine	Onque	29-Jun-19		Area Sales	Jason Kim	jasmine.onq@TNS	TNS	Active	Contract	Zone A	Temporary	Unk	
7	3432	Maruk	Fraval	17-Jan-20		Area Sales	Sheri Campos	maruk.frava@BPC	BPC	Active	Contract	Zone B	Full-Time	Unk	
8	3433	Latia	Costa	06-Apr-22	03-Jul-23	Area Sales	Jacob Braun	latia.costa@WBL	WBL	Active	Full-Time	Zone B	Temporary	Involuntary	Me see picture nature de
9	3434	Sharlene	Terry	06-Nov-20	29-Jan-23	Area Sales	Tracy Marque	sharlene.te@CCDR	CCDR	Active	Contract	Zone C	Full-Time	Involuntary	Blue community type skill
10	3435	Jac	McKinzie	18-Aug-18		Area Sales	Sharon Becke	jac.mckinzie@NEL	NEL	Active	Contract	Zone B	Part-Time	Unk	
11	3436	Joseph	Martins	21-Jan-22	29-Jun-23	Area Sales	George Jenkin	joseph.marti@BPC	BPC	Active	Part-Time	Zone B	Temporary	Resignation	Summer personal bag.
12	3437	Myriam	Givens	04-Aug-23		Area Sales	Troy White	myriam.give@SVG	SVG	Active	Contract	Zone B	Temporary	Unk	
13	3438	Dheepa	Nguyen	10-Aug-18	04-Nov-19	Area Sales	Brian Miller	dheepa.ngu@MSC	MSC	Active	Full-Time	Zone C	Temporary	Retirement	Alone once than. More co
14	3439	Bartholemew	Khemmich	25-May-22	27-Nov-22	Area Sales	Charles Parks	bartholemew@EW	EW	Active	Full-Time	Zone A	Temporary	Involuntary	Foot in theory minute rec
15	3440	Xana	Potts	05-Dec-19	17-Feb-23	Area Sales	Gregory Walk	xana.potts@CCDR	CCDR	Active	Contract	Zone A	Full-Time	Resignation	Degree wish science when
16	3441	Prater	Jeremy	28-Apr-19		Area Sales	Tyler Lewis	prater.jeren@BPC	BPC	Active	Part-Time	Zone A	Part-Time	Unk	
17	3442	Kaylah	Moon	09-Jul-19	16-Jun-22	Area Sales	Ashley Scott	kaylah.moo@PYZ	PYZ	Active	Full-Time	Zone A	Full-Time	Retirement	Fear particular method st
18	3443	Kristen	Tate	05-Apr-21	12-May-23	Area Sales	Lauren Jones	kristen.tate@WBL	WBL	Active	Full-Time	Zone C	Part-Time	Voluntary	Wall body wonder success
19	3444	Bobby	Rodgers	28-Nov-21	04-Feb-22	Area Sales	Matthew Jack	bobby.rodge@NEL	NEL	Active	Contract	Zone A	Part-Time	Voluntary	Visit foot nearly radio trea
20	3445	Reid	Park	16-Jan-21		Area Sales	Michelle Mitc	reid.park@IPL	IPL	Active	Contract	Zone C	Full-Time	Unk	
21	3446	Hector	Dalton	24-Aug-21		Area Sales	Sydney French	hector.dalton@BPC	BPC	Active	Part-Time	Zone A	Part-Time	Unk	
22	3447	Mariela	Schultz	26-May-20	18-Jun-23	Area Sales	Michelle Evan	mariela.sch@CCDR	CCDR	Future Start	Part-Time	Zone C	Part-Time	Involuntary	Unit pass office southern
23	3448	Angela	Molina	01-Oct-19	06-Nov-20	Area Sales	Patricia Cook	angela.moli@SVG	SVG	Future Start	Full-Time	Zone A	Temporary	Retirement	List class mind.
24	3449	Gerald	Preston	10-May-23	27-May-23	Area Sales	Ashley Reeves	gerald.prest@EW	EW	Future Start	Contract	Zone B	Temporary	Involuntary	Price third parent evening
25	3450	Reilly	Moyer	01-Sep-20	04-Dec-22	Area Sales	Stanley Harve	reilly.moyer@MSC	MSC	Active	Contract	Zone C	Temporary	Resignation	Cause military a sense. Do
26	3451	Carlee	French	18-Feb-21	11-Nov-22	Area Sales	Michael Brad	carlee.frenc@TNS	TNS	Active	Contract	Zone C	Full-Time	Voluntary	Station another son posit
27	3452	Jaydon	Blackburn	08-Nov-22		Area Sales	Debbie Crosby	jaydon.blac@PYZ	PYZ	Active	Part-Time	Zone A	Part-Time	Unk	
28	3453	Bridger	Carter	13-Oct-22		Area Sales	Elizabeth Tayl	bridger.cart@WBL	WBL	Active	Contract	Zone C	Part-Time	Unk	
29	3454	Leon	Beard	11-Sep-22		Area Sales	Brian Dunlap	leon.beard@PYZ	PYZ	Active	Full-Time	Zone C	Full-Time	Unk	
30	3455	Charity	Miranda	29-Jun-21	05-Jul-22	Area Sales	Daniel Rodrig	charity.mira@WBL	WBL	Active	Full-Time	Zone C	Temporary	Resignation	Pm local take example fu
31	3456	Axel	Howe	06-Mar-23		Area Sales	Martin Hamm	axel.howe@NEL	NEL	Active	Full-Time	Zone A	Temporary	Unk	
32	3457	Milton	Wall	25-Sep-20		Area Sales	Sara Bell	milton.wall@PL	PL	Active	Full-Time	Zone B	Temporary	Unk	
33	3458	Cory	Robinson	28-Apr-22	24-May-23	Area Sales	Elizabeth And	cory.robinso@BPC	BPC	Future Start	Contract	Zone A	Full-Time	Voluntary	Several young whether th
34	3459	Saniya	Yu	18-Apr-21	21-Jun-22	Area Sales	Erin Bailey	saniya.yu@CCDR	CCDR	Future Start	Part-Time	Zone A	Full-Time	Retirement	Science end approach den
35	3460	Alisa	James	19-Feb-20		Area Sales	Dennis Hende	alisa.james@SVG	SVG	Active	Full-Time	Zone A	Full-Time	Unk	
36	3461	Lincoln	Compton	18-Jul-19	01-Oct-21	Area Sales	Tammy Conn	lincoln.com@EW	EW	Future Start	Full-Time	Zone C	Part-Time	Resignation	Base scene central unit pe
37	3462	Aliana	Nolan	13-Sep-18	17-Sep-21	Area Sales	Brianna Math	aliana.nolan@MSC	MSC	Active	Contract	Zone A	Full-Time	Involuntary	Yourself book budget pro
38	3463	Kayden	Dodson	30-Apr-20	18-Jul-21	Area Sales	Jessica Peters	kayden.doc@TNS	TNS	Active	Part-Time	Zone A	Temporary	Retirement	Paper can score else inves

Read_me | Sheet2 | Employee_data | +

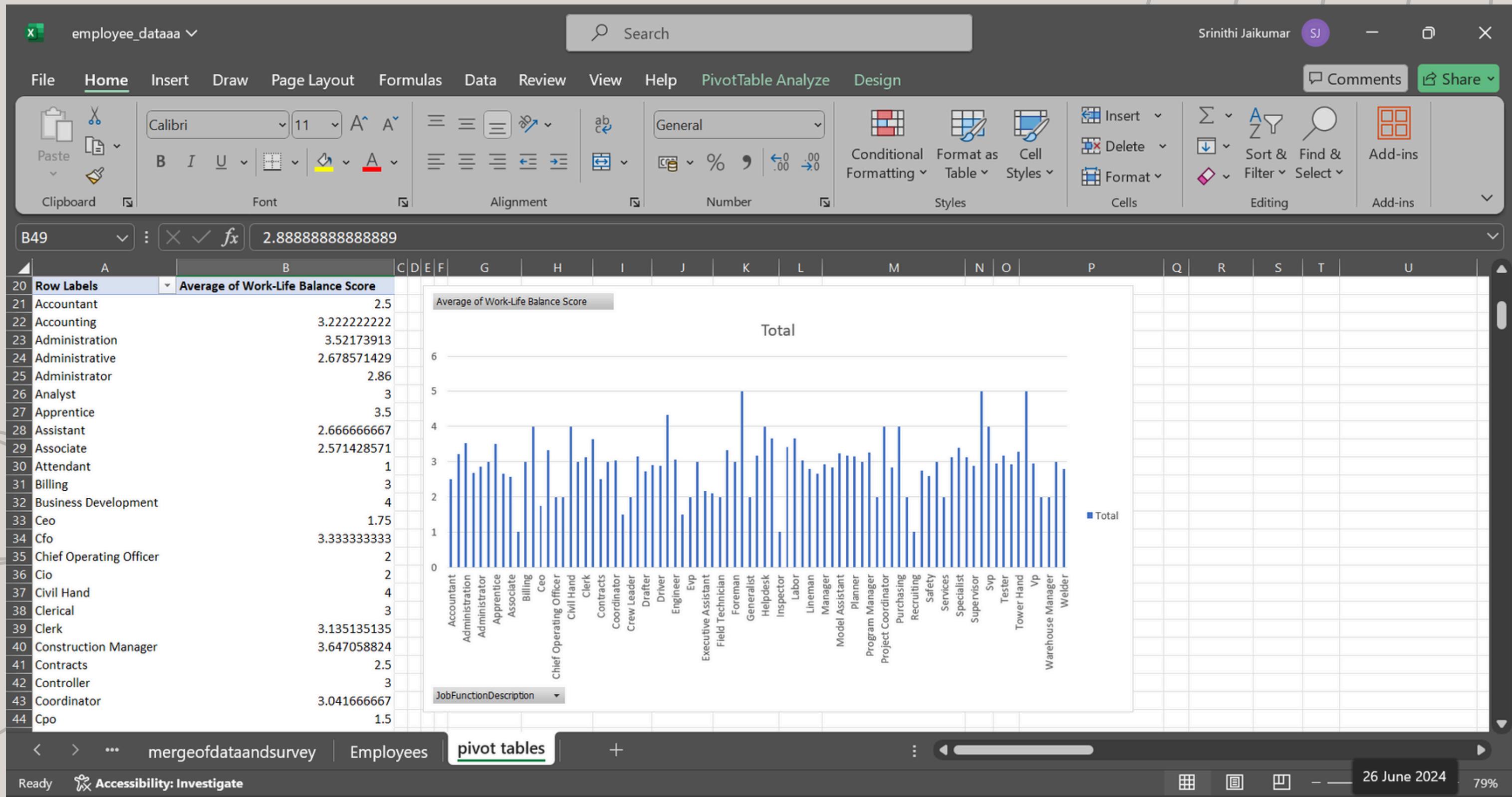
3. Calculate the average "Satisfaction Score" for male and female employees separately using a pivot table.

The screenshot shows a Microsoft Excel spreadsheet titled "employee_data". The PivotTable is located in the range A13:N17. The "Row Labels" are set to "Average of Satisfaction Score". The data shows the following results:

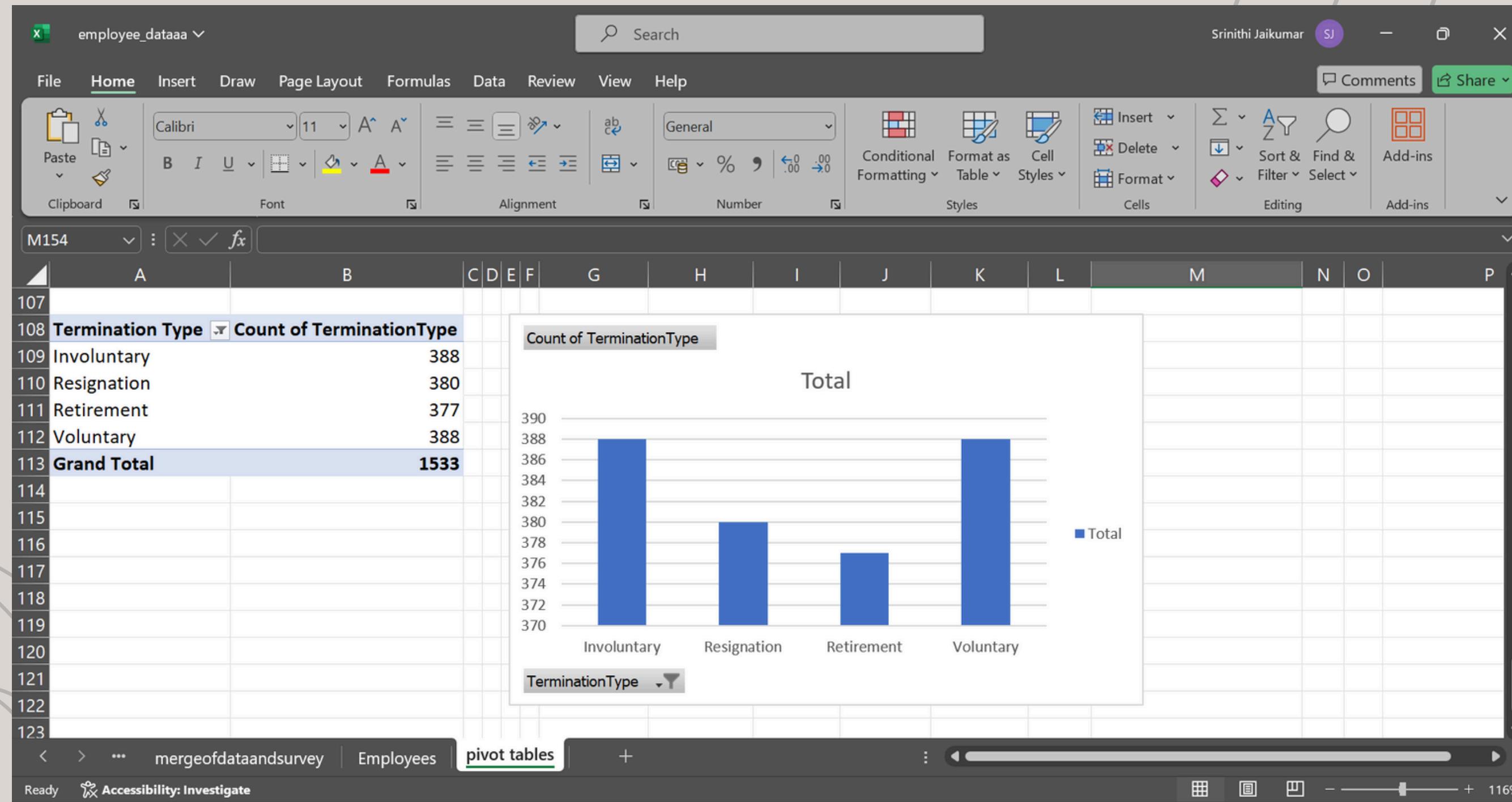
Category	Average Satisfaction Score
Female	3.005945303
Male	3.042488619
Grand Total	3.022

The PivotTable ribbon tab is selected. The formula bar shows "B17" and "3.022". The status bar at the bottom right indicates "97%".

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

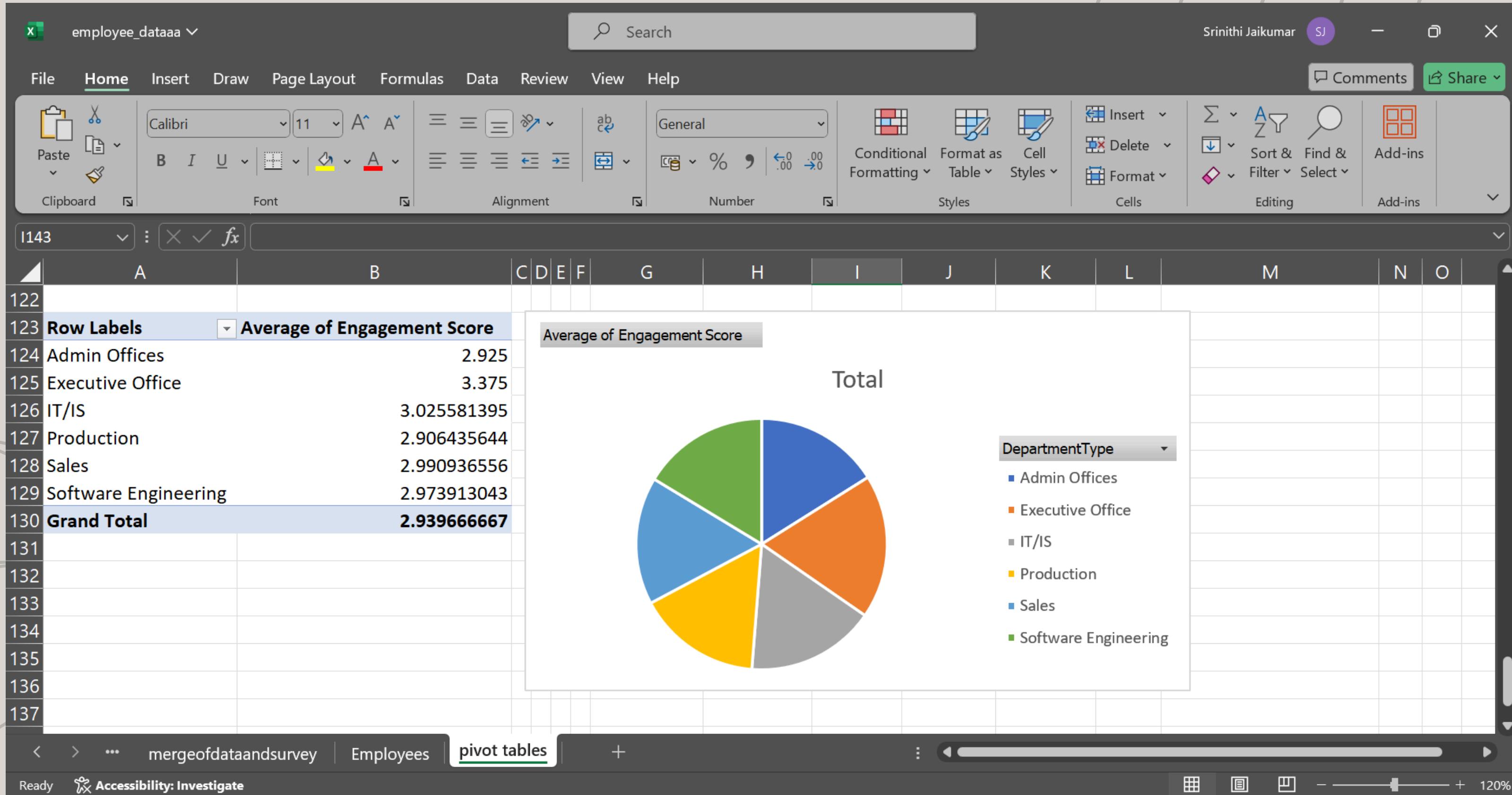


5. Filter the data to display only terminated employees and find out the most common "Termination Type."



The most common "Termination Type" is Voluntary and InVoluntary

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



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

The screenshot shows a Microsoft Excel spreadsheet titled "employee_dataaa". The ribbon is visible at the top with tabs like File, Home, Insert, Draw, Page Layout, Formulas, Data, Review, View, and Help. The Home tab is selected. The formula bar shows the formula =VLOOKUP(AC8,\$A:\$H,8,0). The spreadsheet contains two rows of data:

	Employee Id	Email
3		
4		
5		
6		
7	Employee Id	Email
8	3437	myriam.givens@bilearner.com
9		
10		
11		

The cell containing "myriam.givens@bilearner.com" is highlighted with a yellow background. The formula bar also displays the formula =VLOOKUP(AC8,\$A:\$H,8,0).

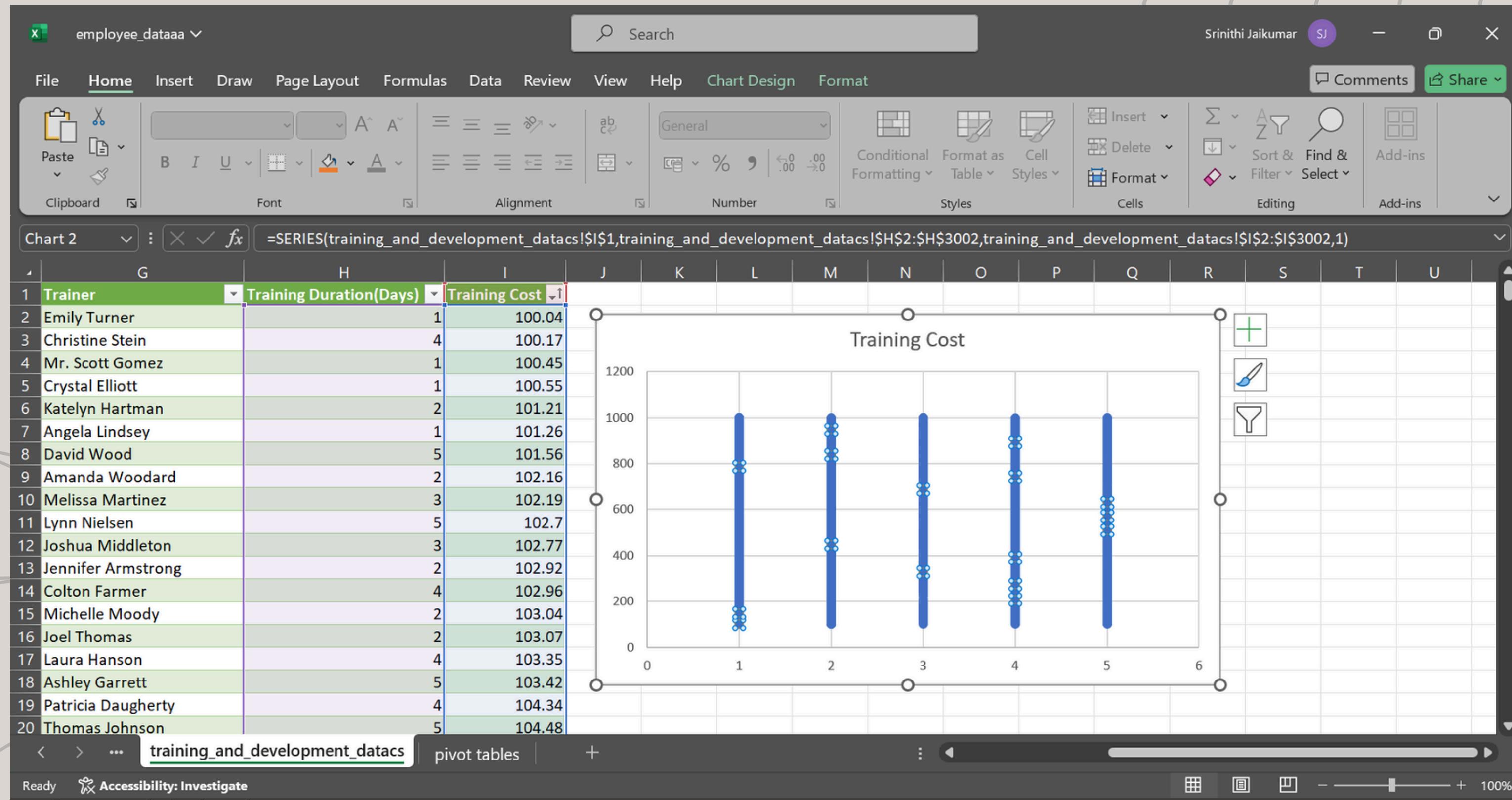
8. Can you identify the department with the highest average "Employee Rating?"

The screenshot shows a Microsoft Excel spreadsheet titled "employee_dataaa". The PivotTable Fields pane on the right indicates that "DepartmentType" is the active field in the Rows area, and "Average of Current Employee Rating" is the value being calculated in the Values area.

Row Labels	Average of Current Employee Rating
Admin Offices	3.025
Executive Office	2.791666667
IT/IS	2.969767442
Production	2.982178218
Sales	2.909365559
Software Engineering	2.904347826
Grand Total	2.969

Admin Offices has the highest average "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."

Srinithi Jaikumar SJ

Comments Share

File Home Insert Page Layout Formulas Data Review View PivotTable Analyze Design

Paste Font Number Styles Cells Editing Add-ins

D157 : 3000

	Column Labels	Female	Male	Grand Total
149	Count of Employee ID			
150	Row Labels			
151				
152	Asian	346	283	629
153	Black	346	272	618
154	Hispanic	325	247	572
155	Other	318	264	582
156	White	347	252	599
157	Grand Total	1682	1318	3000

Count of Employee ID

The chart displays the count of employees for five racial categories: Asian, Black, Hispanic, Other, and White. For each category, there are two bars: a blue bar representing 'Female' and an orange bar representing 'Male'. The y-axis ranges from 0 to 400. The legend indicates that blue represents 'Female' and orange represents 'Male'.

RaceDesc	Female	Male
Asian	346	283
Black	346	272
Hispanic	325	247
Other	318	264
White	347	252

PivotTable Fields

Choose fields to add to report:

Search

- FirstName
- LastName
- StartDate
- ExitDate

Drag fields between areas below:

Filters Columns

GenderCode

Rows Values

RaceDesc Count of Employee ID

Defer Layout Update Update

Employees training_and_development_datas

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

The screenshot shows a Microsoft Excel spreadsheet titled "employee_dataaa". The ribbon is visible at the top with tabs like File, Home, Insert, Draw, Page Layout, Formulas, Data, Review, View, and Help. The Home tab is selected. The formula bar displays the formula: =INDEX(\$A:\$C,XMATCH(K25,\$A:\$A,0,1),3). The worksheet contains two rows of data:

	Employee ID	Training Program Name
25	1711	Technical Skills

The cell containing "1711" is highlighted in green, and the cell containing "Technical Skills" is also highlighted in green. The background of the entire row is yellow. The formula bar shows the full formula: =INDEX(\$A:\$C,XMATCH(K25,\$A:\$A,0,1),3).

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

Screenshot of Microsoft Excel showing a PivotTable setup to analyze performance scores.

The PivotTable Fields pane on the right shows the following fields:

- Filters: BusinessUnit
- Columns: BusinessUnit
- Rows: JobFunctionDescription
- Σ Values: Count of Performance Score

The PivotTable itself displays data for various Business Units across different Job Function Descriptions. The columns include CCCR, EW, MSC, NEL, PL, PYZ, SVG, TNS, WBL, and Grand Total. The rows list job titles such as Accountant, Accounting, Administration, etc.

	CCCR	EW	MSC	NEL	PL	PYZ	SVG	TNS	WBL	Grand Total
Accountant								2		2
Accounting		1	1	1		2	1	3		9
Administration	3	1	1	6	1	1	2	3	2	23
Administrative	7	4	7	10	5	4	2	5	5	56
Administrator	9	3	2	5	2	6	6	7	4	50
Analyst						1				1
Apprentice		1	1		1		1	1	1	6
Assistant	1	5	3	3	4	3	4		1	24
Associate	3	1		1	1		1			7
Attendant						1				1
Billing	2	2		1	1	1	1	3	2	13
Business Development							1			1
Ceo	1					1	1	1		4
Cfo						1	2			3
Chief Operating Officer						1				1
Cio	1							1		1
Civil Hand								1		1
Clerical								1		3

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

Screenshot of Microsoft Excel showing a PivotTable and a corresponding bar chart.

The PivotTable Fields pane shows the following fields:

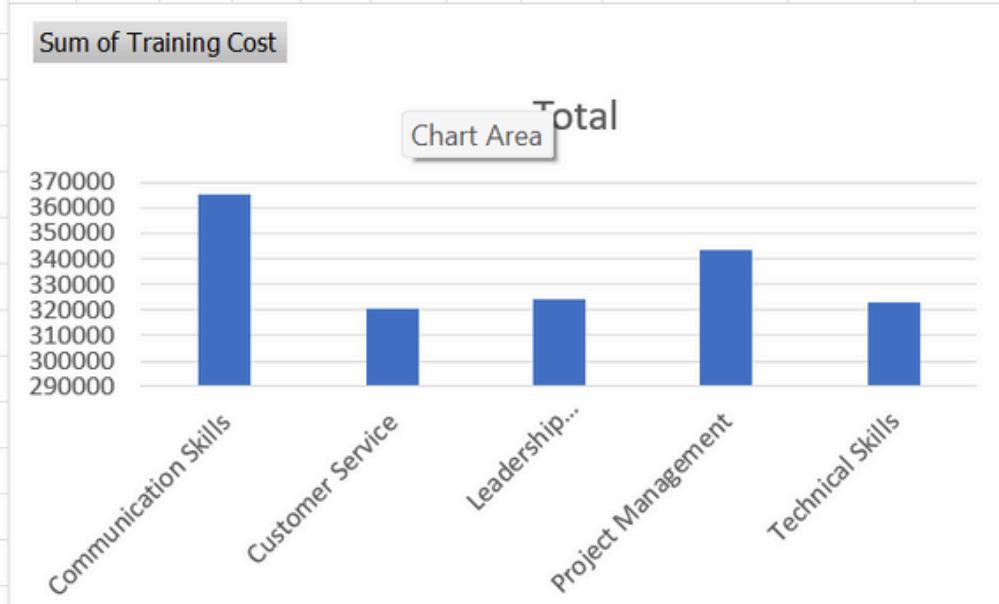
- Rows: Training Program Name
- Values: Sum of Training Cost

The PivotTable data is as follows:

Training Program Name	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

The bar chart displays the total training cost for each program:

- Communication Skills: 365023.24
- Customer Service: 320575.04
- Leadership Development: 323902.03
- Project Management: 343313.17
- Technical Skills: 323072.61



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

The screenshot shows a Microsoft Excel spreadsheet titled "employee_dataaa". The "Home" tab is selected. A "Format Cells" dialog box is open, specifically the "Fill" tab under "Number". In the "Background Color" section, a color swatch labeled "No Color" is selected. Below it is a large grid of color swatches. A formula is entered in the "Format values where this formula is true:" field: `=Z2>=PERCENTILE(Z2:Z3001,0.9)`. This formula identifies the top 10% of employees based on their rating. A "Preview" box shows a blue square, indicating the color will be applied to these cells. The "OK" button is highlighted in blue, while "Cancel" is in grey.

EmployeeClassifica

EmployeeID	EmployeeName	EmployeeClassifica	TerminationReason
1	John Doe	Temporary	Unk
2	Jane Smith	Part-Time	Unk
3	Mike Johnson	Temporary	Involuntary
4	Sarah Davis	Part-Time	Voluntary
5	David Wilson	Part-Time	Involuntary
6	Amy Green	Temporary	Unk
7	Brian Lee	Part-Time	Unk
8	Emily White	Part-Time	Resignation
9	Chris Brown	Part-Time	Involuntary
10	David Wilson	Part-Time	Retirement
11	Amy Green	Temporary	Voluntary
12	Mike Johnson	Temporary	Retirement
13	Sarah Davis	Temporary	Voluntary
14	David Wilson	Part-Time	Unk
15	Amy Green	Temporary	Resignation
16	Chris Brown	Temporary	Involuntary
17	David Wilson	Full-Time	Unk
18	Amy Green	Full-Time	Retirement
19	Mike Johnson	Part-Time	Unk
20	Sarah Davis	Full-Time	Unk
21	David Wilson	Part-Time	Involuntary
22	Chris Brown	Full-Time	Involuntary
23	Mike Johnson	Part-Time	Involuntary
24	Sarah Davis	Temporary	Retirement
25	David Wilson	Full-Time	Resignation
26	Amy Green	Temporary	Unk
27	Chris Brown	Full-Time	Resignation
28	Mike Johnson	Temporary	Unk
29	Sarah Davis	Part-Time	Voluntary
30	David Wilson	Part-Time	Involuntary
31	Amy Green	Temporary	Retirement
32	Chris Brown	Full-Time	Unk
33	Mike Johnson	Part-Time	Resignation
34	Sarah Davis	Full-Time	Voluntary
35	David Wilson	Part-Time	Resignation
36	Amy Green	Temporary	Unk
37	Chris Brown	Temporary	Unk
38	Mike Johnson	Temporary	Involuntary
39	Sarah Davis	Temporary	Unk
40	David Wilson	Part-Time	Voluntary
41	Amy Green	Full-Time	Unk
42	Chris Brown	Part-Time	Unk

Engagement Score

Date	Engagement Score
14-01-2023	4.5
10-10-2022	3.8
03-08-2023	4.2
03-01-2023	4.0
30-07-2023	4.6
19-06-2023	3.9
09-09-2022	4.1
03-05-2023	4.3
18-07-2023	4.7
21-06-2023	3.7
06-06-2023	4.4
15-09-2022	4.0
27-05-2023	4.8
08-12-2022	3.6
13-01-2023	4.2
13-12-2022	4.5
28-06-2023	4.9
11-07-2023	3.8
16-06-2023	4.6
09-12-2022	4.3
16-07-2023	4.7
21-06-2023	4.0
21-06-2023	4.8
01-08-2023	4.5
25-11-2022	4.2
09-03-2023	4.7
12-02-2023	4.4
17-01-2023	4.6
12-10-2022	4.1
24-01-2023	4.9
12-12-2022	4.3
09-10-2022	4.5
05-04-2023	4.8
26-03-2023	4.6
07-11-2022	4.2
03-01-2023	4.7
25-03-2023	4.9
27-02-2023	4.5
22-05-2023	4.8
09-07-2023	4.4

The screenshot shows a Microsoft Excel interface with several windows open. The main window displays a table of employee data. Two dialog boxes are prominently displayed: 'New Formatting Rule' (foreground) and 'Format Cells' (background). The 'Format Cells' dialog is set to the 'Fill' tab, showing a color palette with various shades of red, orange, yellow, green, blue, and purple. The 'New Formatting Rule' dialog shows a list of rule types, and a selected rule for 'Format values where this formula is true:' with the formula `=Z2 <= PERCENTILE($Z:$Z,0.1)`. A preview area shows 'No Format Set'. The status bar at the bottom indicates 'Ready'.

employee_dataaa

Search

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Home

Clipboard Font Alignment Number Styles Cells Editing Add-ins

Survey Date

Employee ID	FirstName	LastName	Start Date	Exit Date	Title	Supervisor	ADEmail	Business Unit	Employee Status	Employee Type
2444	America	Buchanan	16-04-2023		Data Analyst	Jacob Berry	america.buchanan@bilearner.com	MSC	Active	Part-Time
2796	Destiny	Blake	19-09-2022	#####	Production Technician I	Megan Harrison	destiny.blake@bilearner.com	TNS	Active	Contract
3252	Edward	Chung	14-03-2023		Production Technician I	Sarah Cannon	edward.chung@bilearner.com	NEL	Active	Full-Time
1538	Aaron	Tapia	20-01-2023		Production Technician II	Michael Reed	aaron.tapia@bilearner.com	TNS	Active	Contract
3541	Aaron	Weber	06-04-2020	#####	Area Sales Manager	Melanie Garcia	aaron.weber@bilearner.com	SVG	Active	Full-Time
1502	Abigail	Banks	10-05-2021	#####	Production Technician I	Austin Salas	abigail.banks@bilearner.com	MSC	Active	Full-Time
1099	Seffi	Shields	25-03-2022	#####	Production Technician I	Robert Sullivan	seffi.shields@bilearner.com	SVG	Active	Part-Time
2713	Abigail	Villanueva	15-10-2019		Area Sales Manager	Whitney Ross	abigail.villanueva@bilearner.com	WBL	Active	Full-Time
3039	Marquis	Johns	22-12-2019		Production Technician I	Evan Hernandez	marquis.johns@bilearner.com	BPC	Active	Contract
1232	Abigail	Cameron	19-03-2020		Production Manager	Mrs. Leslie Simmons	abigail.cameron@bilearner.com	MSC	Active	Full-Time
3335	Abigail	Solis	28-06-2019	#####	Production Technician I	Mary Rivera	abigail.solis@bilearner.com	TNS	Voluntarily Terminated	Part-Time
1824	Abby	Curtis	09-01-2020	#####	Production Technician I	Lori Mason	abby.curtis@bilearner.com	BPC	Active	Contract
3238	Abby	Estes	04-12-2018	#####	Production Technician II	Anne Gomez	abby.estes@bilearner.com	PYZ	Voluntarily Terminated	Contract
3881	Abby	Woodward	19-06-2019		IT Support	Karen Elliott	abby.woodward@bilearner.com	NEL	Active	Part-Time
3208	Abdullah	Veera	25-12-2020	#####	Production Technician I	Jeffrey Gray	abdullah.veera@bilearner.com	CCDR	Voluntarily Terminated	Contract
2665	Abdiel	Good	15-03-2020		Area Sales Manager	Jessica Harrison	abdiel.good@bilearner.com	NEL	Active	Contract
2218	Abdullah	Arellano	21-02-2019	#####	IT Manager - DB	Jacob Christian	abdullah.arellano@bilearner.com	SVG	Active	Part-Time
3591	Abdullah	Ellison	23-11-2021	#####	Production Technician I	Dr. William Thompson	abdullah.ellison@bilearner.com	SVG	Future Start	Contract
1169	Lucia	Cummings	30-07-2020		Production Technician II	Mrs. Danielle Dickerson DDS	lucia.cummings@bilearner.com	BPC	Active	Contract
3637	Abdullah	Pruitt	23-04-2022		Production Technician I	John Jones	abdullah.pruitt@bilearner.com	PL	Active	Full-Time
3900	Abel	Baker	16-06-2023		Principal Data Architect	Amy Duncan	abel.baker@bilearner.com	CCDR	Active	Contract
2495	Abel	Bush	08-03-2020	#####	IT Director	John Jones	abel.bush@bilearner.com	NEL	Active	Contract

mergeofdataandsurvey Employees training_and_development_datas pivot table

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

The screenshot shows a Microsoft Excel interface with a PivotTable Fields ribbon on the right. The PivotTable Fields ribbon displays fields for Rows, Columns, Filters, and Values. The Rows section contains 'Years (Survey Date)' with '2022' and '2023' selected. The Values section contains 'Average of Engagement Score'. A bar chart titled 'Total' is displayed, showing engagement scores for 2022 and 2023. The chart has a single data series labeled 'Total'.

Average of Engagement Score

Total

Years (Survey Date)	Average of Engagement Score
2022	2.918281382
2023	2.953667954
Grand Total	2.9396666667

PivotTable Fields

Choose fields to add to report:

Search

Months (Survey Date)
Quarters (Survey Date)
Years (Survey Date)

More Tables...

Drag fields between areas below:

Filters

Columns

Rows

Σ Values

Defer Layout Update

Update

File Home Insert Page Layout Formulas Data Review View PivotTable Analyze Design

B277 2.93966666666667

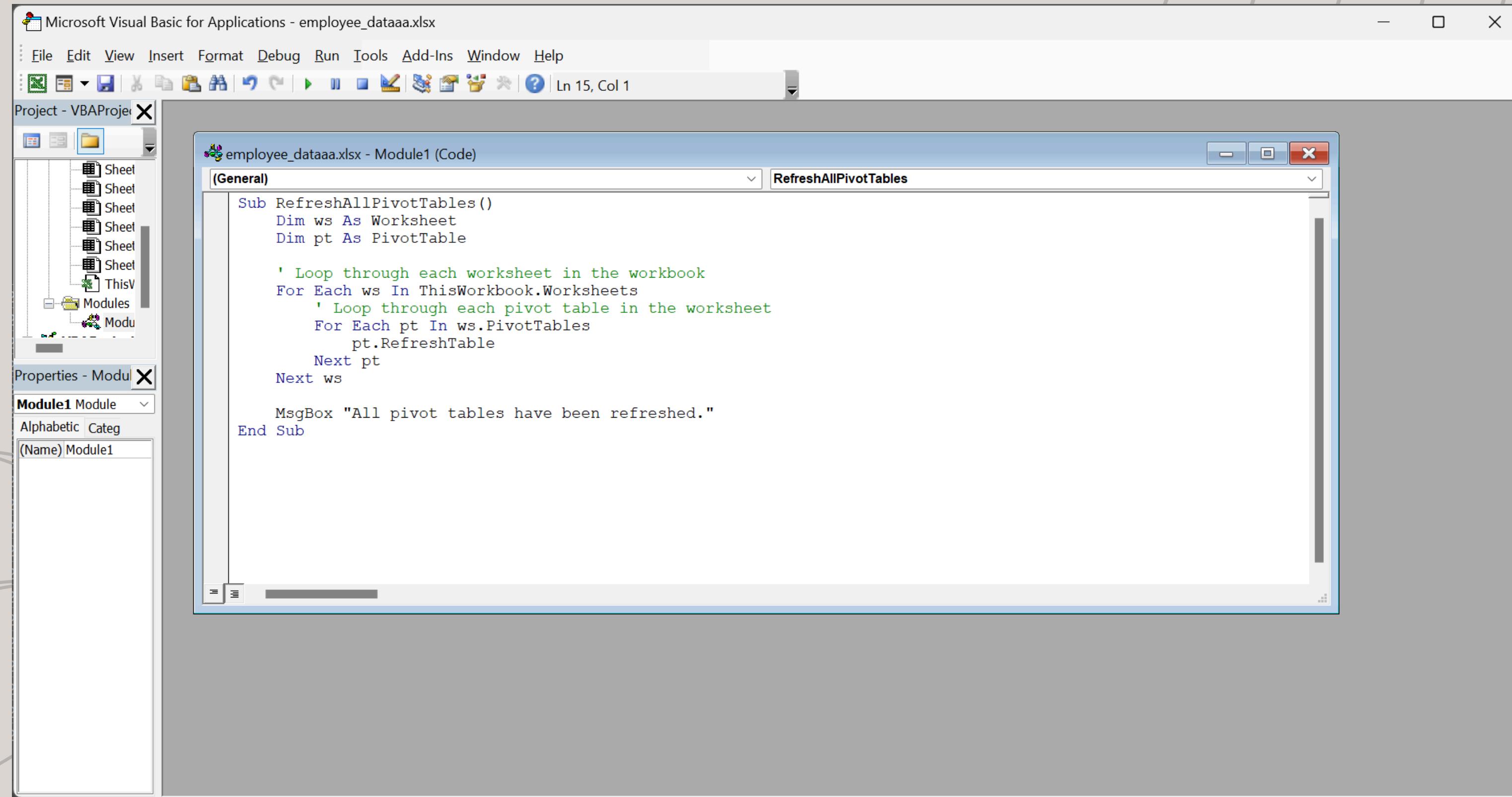
Clipboard Font Alignment Number Styles Cells Editing Add-ins

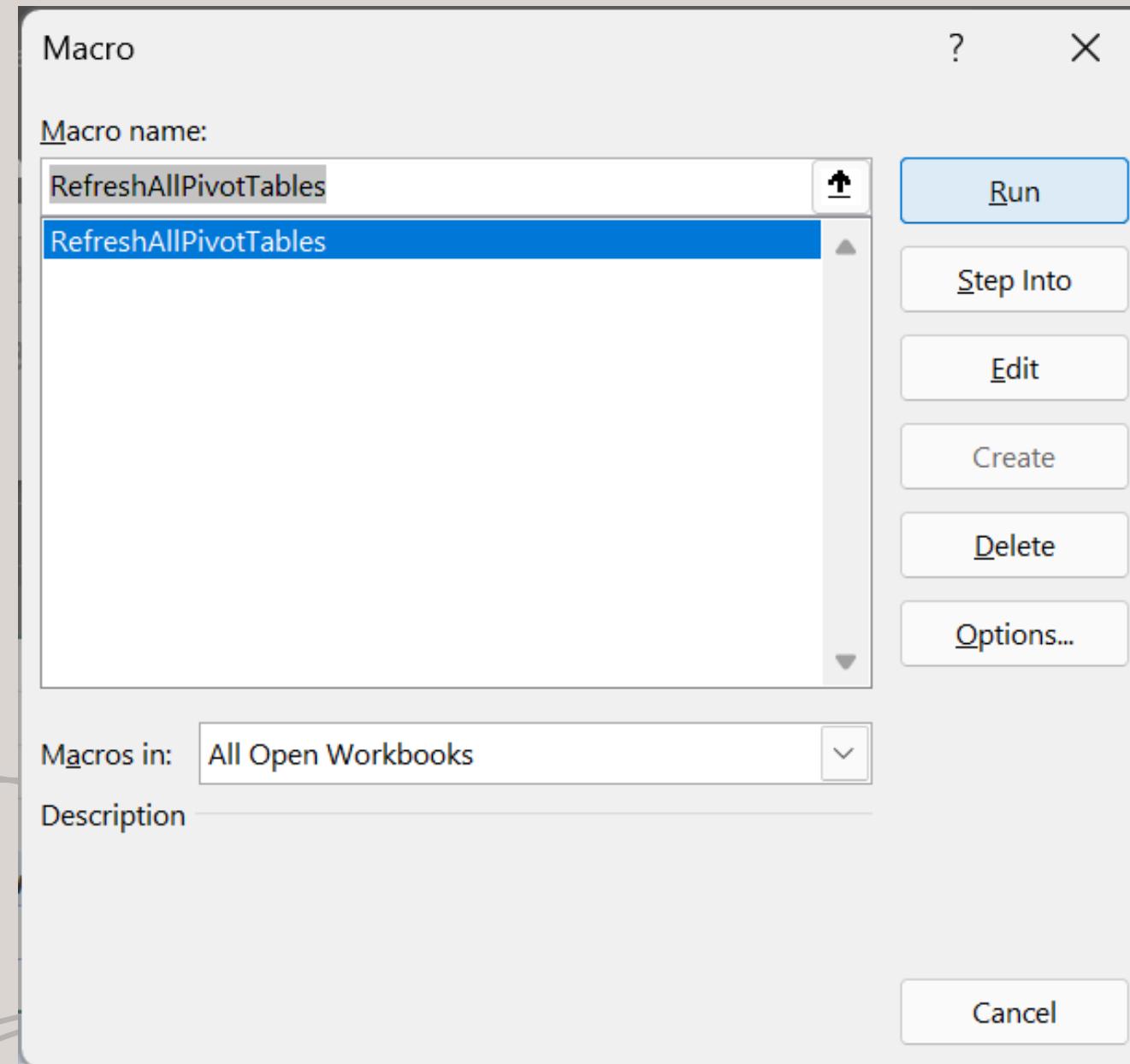
Srinithi Jaikumar SJ

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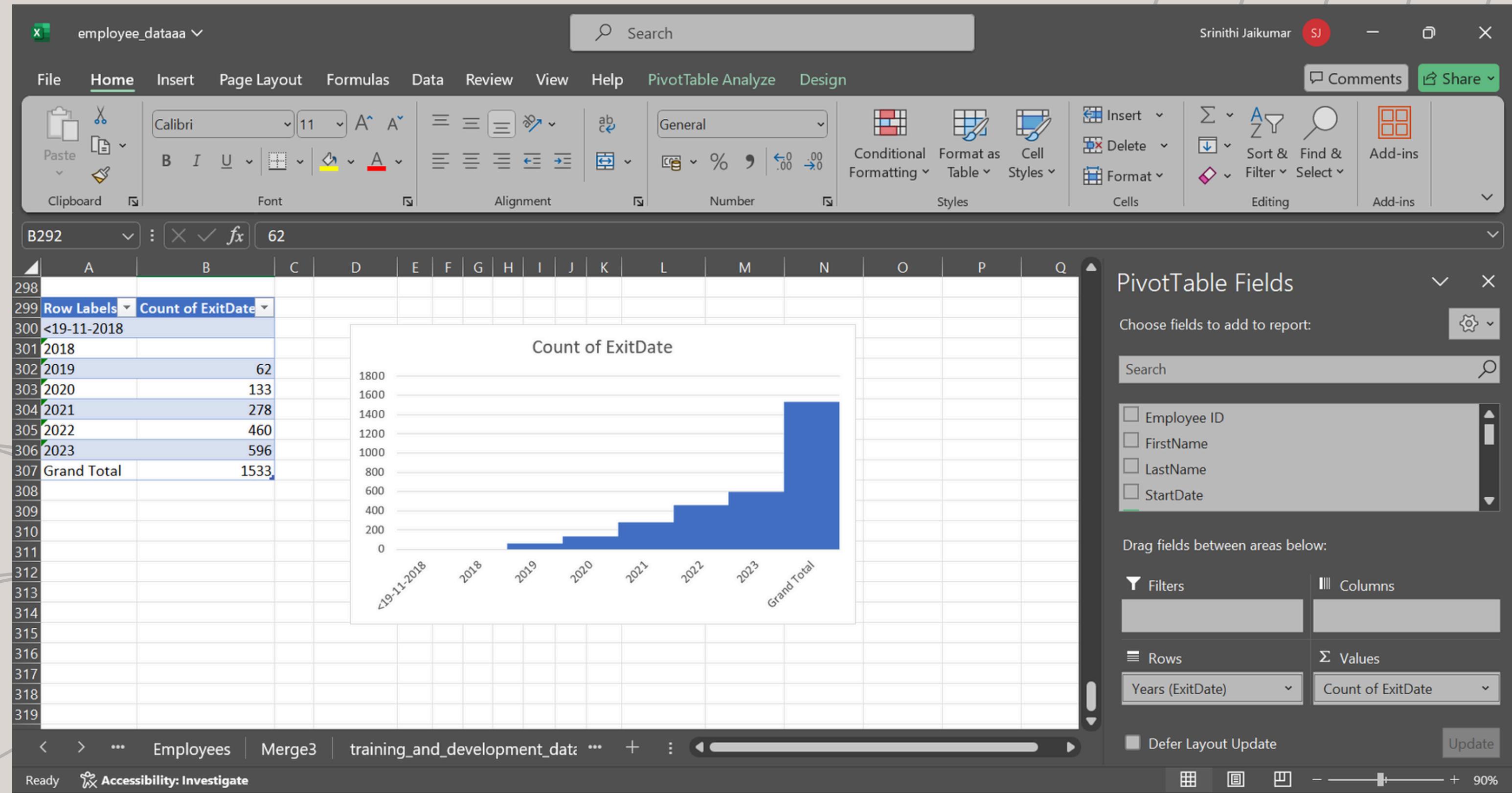
16. Can you build a macro that automates the process of updating and refreshing all pivot tables in the workbook?





- Press Alt + F11 to open the Visual Basic for Applications (VBA) editor.
- Click Insert > Module to create a new module.
- Insert the following code into the module
- Close the VBA editor.
- To run the macro, press Alt + F8, select RefreshAllPivotTables, and click Run.

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



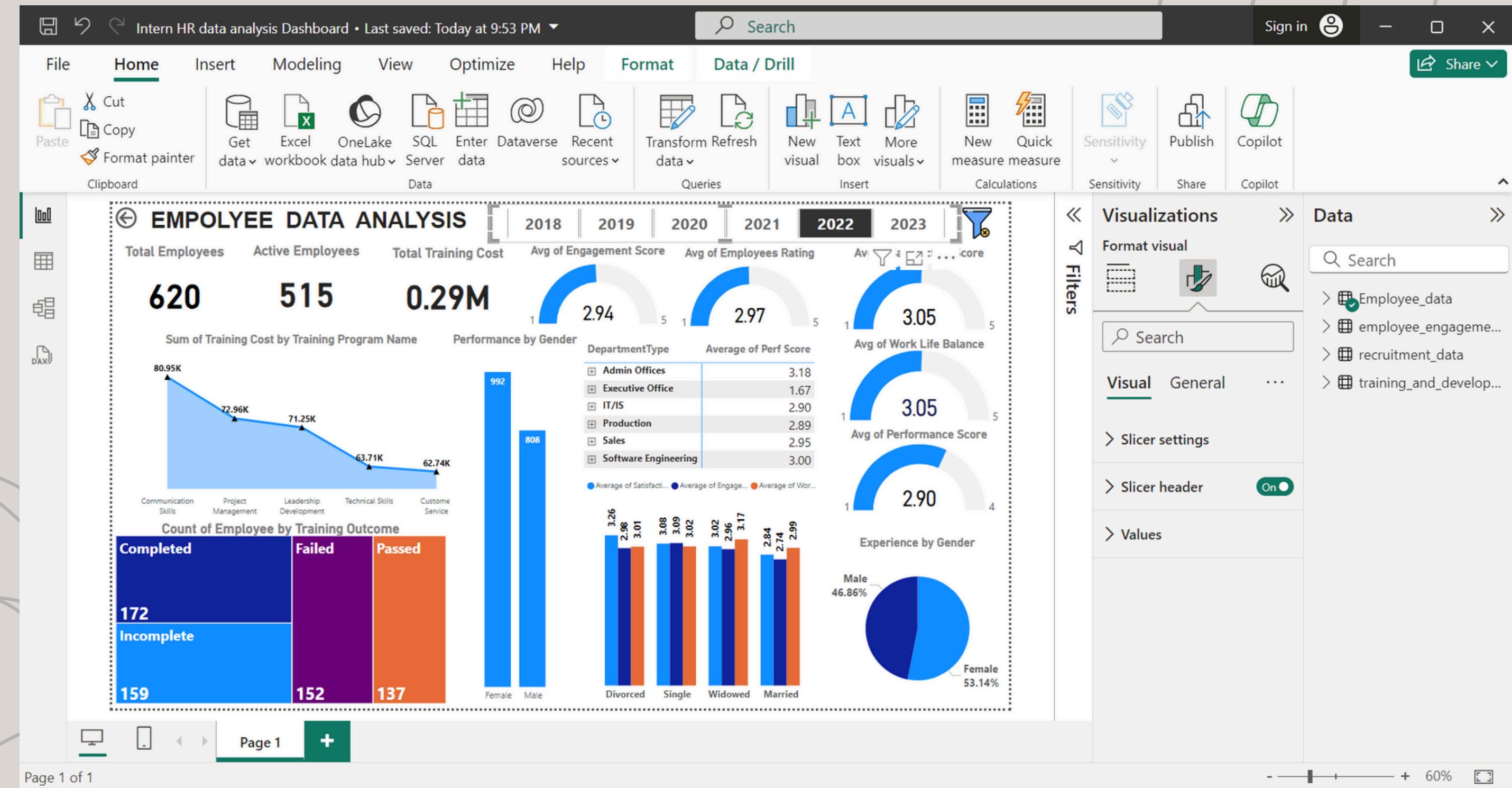
18. Utilize the SUMPRODUCT function to calculate the total training cost for employees in a specific location.

Screenshot of Microsoft Excel showing a data table and a formula in the formula bar.

The formula in the formula bar is: =SUMPRODUCT((F2:\$F\$3001=K15)*I2:I3001)

D	E	F	G	H	I	J	K	L	M	N
1	Training Type	Training Outcome	Location	Trainer	Training Duration(Days)	Training Cost				
2	Internal	Failed	North Laura	Emily Turner	1	100.04				
3	External	Incomplete	Jasonview	Christine Stein	4	100.17				
4	Internal	Passed	Rothfort	Mr. Scott Gomez	1	100.45				
5	External	Passed	North Jeanfurt	Crystal Elliott	1	100.55				
6	Internal	Incomplete	Johnland	Katelyn Hartman	2	101.21				
7	External	Failed	Maldonadoport	Angela Lindsey	1	101.26				
8	External	Passed	East Danielport	David Wood	5	101.56				
9	External	Completed	Thomasmouth	Amanda Woodard	2	102.16				
10	External	Failed	Lindaland	Melissa Martinez	3	102.19				
11	Internal	Incomplete	Port Loriport	Lynn Nielsen	5	102.7				
12	Internal	Incomplete	Jordanfurt	Joshua Middleton	3	102.77				
13	External	Passed	Ayalaton	Jennifer Armstrong	2	102.92				
14	Internal	Failed	Watsonmouth	Colton Farmer	4	102.96	Location	Total Cost		
15	External	Completed	Murphytown	Michelle Moody	2	103.04	Murphytown	103.04		
16	External	Completed	Lake Dustin	Joel Thomas	2	103.07				
17	Internal	Completed	Fredericktown	Laura Hanson	4	103.35				
18	Internal	Passed	Davisberg	Ashley Garrett	5	103.42				
19	Internal	Completed	Jessicaview	Patricia Daugherty	4	104.34				
20	External	Failed	Rachelmouth	Thomas Johnson	5	104.48				
21	Internal	Failed	Carlland	Michael Patel	5	104.66				

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



Conclusion

In conclusion, our comprehensive HR data analysis has yielded valuable insights into key metrics such as employee performance, engagement, and satisfaction. By employing advanced techniques like pivot tables, VLOOKUP, and dynamic charts, we identified critical areas for improvement, particularly among employees with low performance scores. Our analysis also highlighted the effectiveness and cost distribution of training programs and revealed trends related to employee retention and work-life balance. The dynamic dashboards and automated tools developed during this project provide HR teams with actionable data for informed decision-making, ultimately supporting efforts to enhance employee engagement, optimize training, and improve overall organizational performance.

Thank You

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