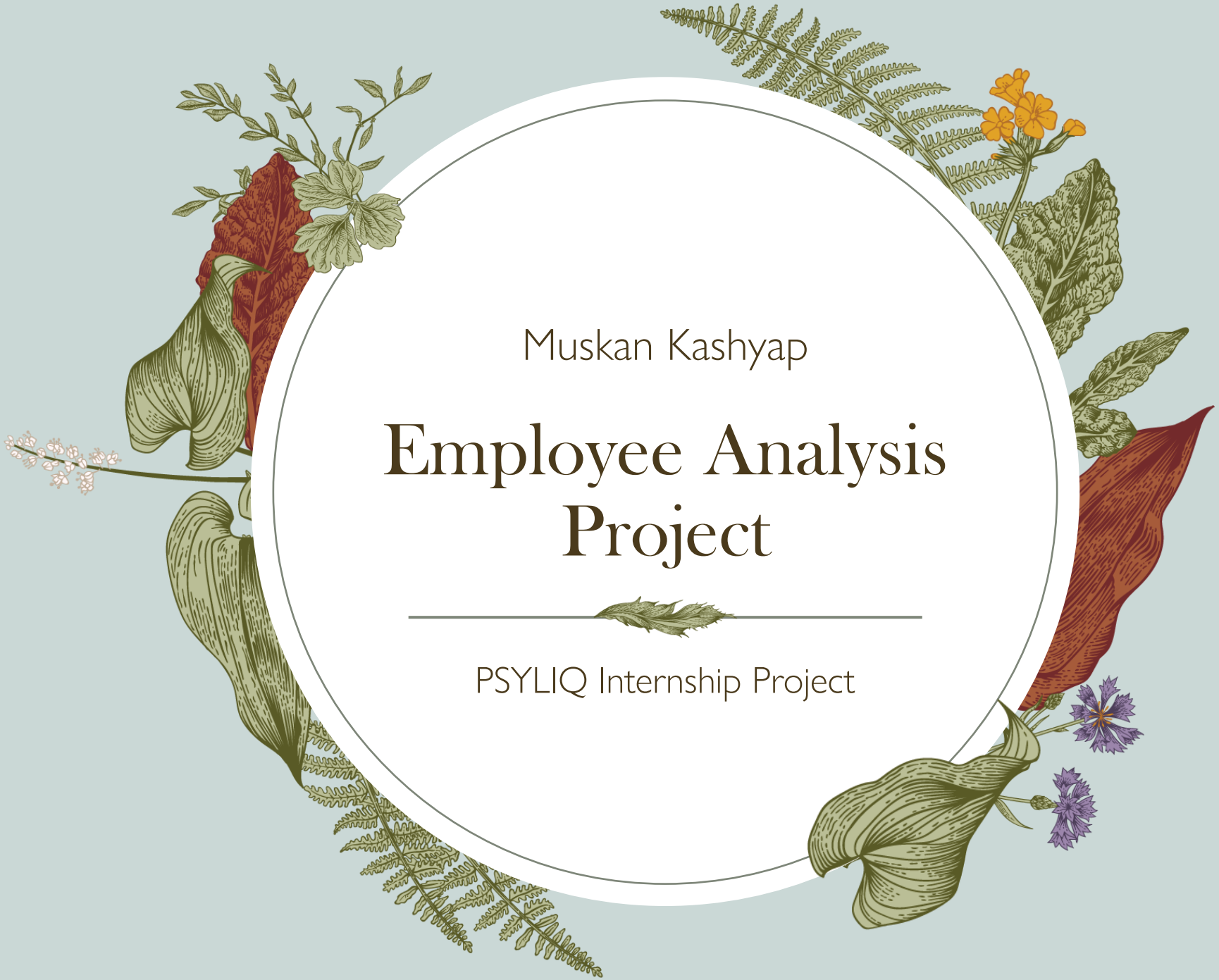


Muskan Kashyap

Employee Analysis Project

PSYLIQ Internship Project

Introduction

In this presentation, I'll walk you through a comprehensive project involving diverse data tasks, from creating pivot tables to crafting dynamic charts. I've explored key HR questions in a dataset of 4000 employees, addressing topics such as departmental headcounts, performance analysis, and macro automation.

Project Questions

And Solutions

Q1: Create a pivot table to summarize the total number of employees in each department.

Department	Total No. of Employees
Admin Offices	80
Executive Office	24
IT/IS	430
Production	2020
Sales	331
Software Engineering	115
Grand Total	**3000**

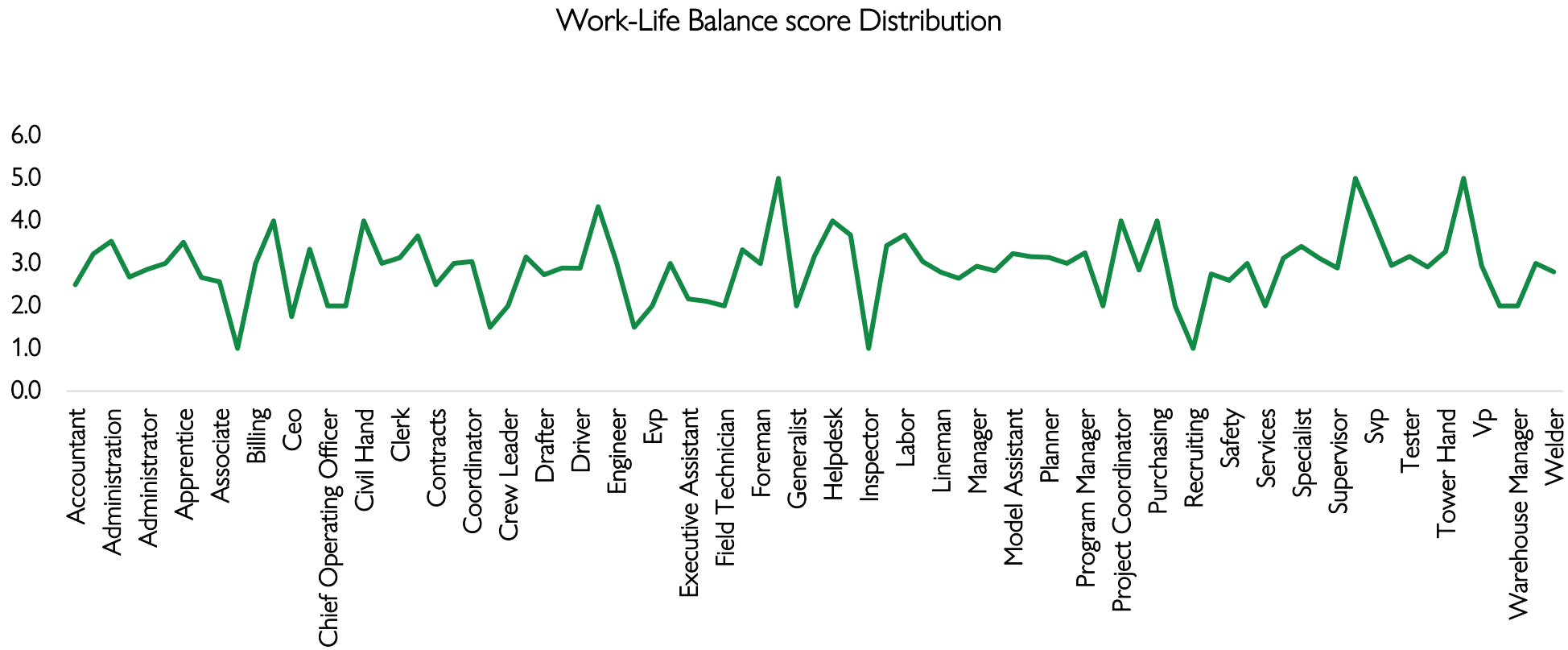
Q2: Apply conditional formatting to highlight employees with a "Performance Score" below 3 in red.

	Division	DOB	State	JobFunctionDescription	GenderCode	LocationCode	RaceDesc	MaritalDesc	Performance Score	Current Employee Rating
1182	Field Operations	13-08-1991	MA	Foreman	Female	94011	Black	Single	PIP	5
1183	General - Eng	20-01-1992	MA	Engineer	Female	96129	Black	Widowed	Exceeds	4
1184	Finance & Accounting	12/9/1949	MA	Manager	Female	81415	White	Divorced	Exceeds	5
1185	Aerial	20-02-1984	MA	Laborer	Female	22258	Other	Divorced	Exceeds	2
1186	Aerial	21-04-1959	MA	Groundman	Female	13138	Asian	Single	Exceeds	5
1187	Field Operations	17-05-1997	MA	Technician	Male	74447	Hispanic	Married	Exceeds	1
1188	Engineers	26-01-1998	MA	Program Manager	Female	31571	Hispanic	Married	Exceeds	5
1189	Field Operations	21-02-1965	MA	Laborer	Female	1509	Black	Married	Exceeds	2
1190	Shop (Fleet)	4/7/1944	MA	Shop	Female	15861	White	Divorced	Needs Improvement	5
1191	General - Con	20-01-1985	MA	Laborer	Female	46637	Asian	Single	Needs Improvement	5
1192	Engineers	19-11-1971	MA	Engineer	Female	47342	Asian	Married	Needs Improvement	5
1193	General - Con	29-06-1945	MA	Administration	Female	41219	Black	Divorced	Needs Improvement	1
1194	Field Operations	1/8/1963	MA	Laborer	Male	67704	White	Married	Needs Improvement	4
1195	Field Operations	18-02-1992	MA	Laborer	Female	57434	Other	Widowed	Needs Improvement	2
1196	Underground	31-10-1954	MA	Laborer	Female	46366	Black	Single	Needs Improvement	2
1197	Underground	25-06-1983	MA	Operator	Male	15989	White	Single	Needs Improvement	5
1198	Wireline Construction	12/4/1983	MA	Operator	Female	77437	Asian	Divorced	Needs Improvement	4
1199	Field Operations	1/7/1963	MA	Driver	Female	63184	White	Single	Exceeds	1
1200	General - Con	10/7/1977	MA	Manager	Female	15120	White	Divorced	Exceeds	4
1201	Field Operations	15-03-1954	MA	Laborer	Female	4751	Asian	Single	Exceeds	4
1202	Project Management -	27-06-1990	MA	Technician	Male	37225	Other	Married	Exceeds	2
1203	Project Management -	1/1/1969	MA	Project Manager	Female	92017	Asian	Married	Exceeds	4
1204	General - Con	5/4/1986	MA	Technician	Female	42742	Asian	Married	Exceeds	1
1205	Shop (Fleet)	23-10-1984	MA	Supervisor	Female	58905	Other	Divorced	Needs Improvement	2
1206	General - Sga	13-01-1944	MA	Administrator	Female	32235	Black	Divorced	Needs Improvement	4
1207	Field Operations	9/1/1942	MA	Tower Hand	Female	40461	Other	Widowed	Needs Improvement	5
1208	Field Operations	6/6/1953	MA	Welder	Female	97669	Black	Divorced	Needs Improvement	5

Q3: Calculate the average "Satisfaction Score" for male and female employees separately using a pivot table.

Gender	Average Satisfaction Score
Female	3.01
Male	3.04

Q4: Create a chart to visualize the distribution of "Work-Life Balance Score" for different job functions.



Q5: Filter the data to display only terminated employees and find out the most common "Termination Type."

Termination Type	Total Employees
Unk	1467
Involuntary	388
Voluntary	388
Resignation	380
Retirement	377

The most common Termination Type : "Unk"

Q6: Calculate the average "Engagement Score" for each department using a pivot table.

Department	Average Engagement Score
Admin Offices	2.9
Executive Office	3.4
IT/IS	3.0
Production	2.9
Sales	3.0
Software Engineering	3.0

Q7: Use VLOOKUP to find the supervisor's email address for a specific employee.

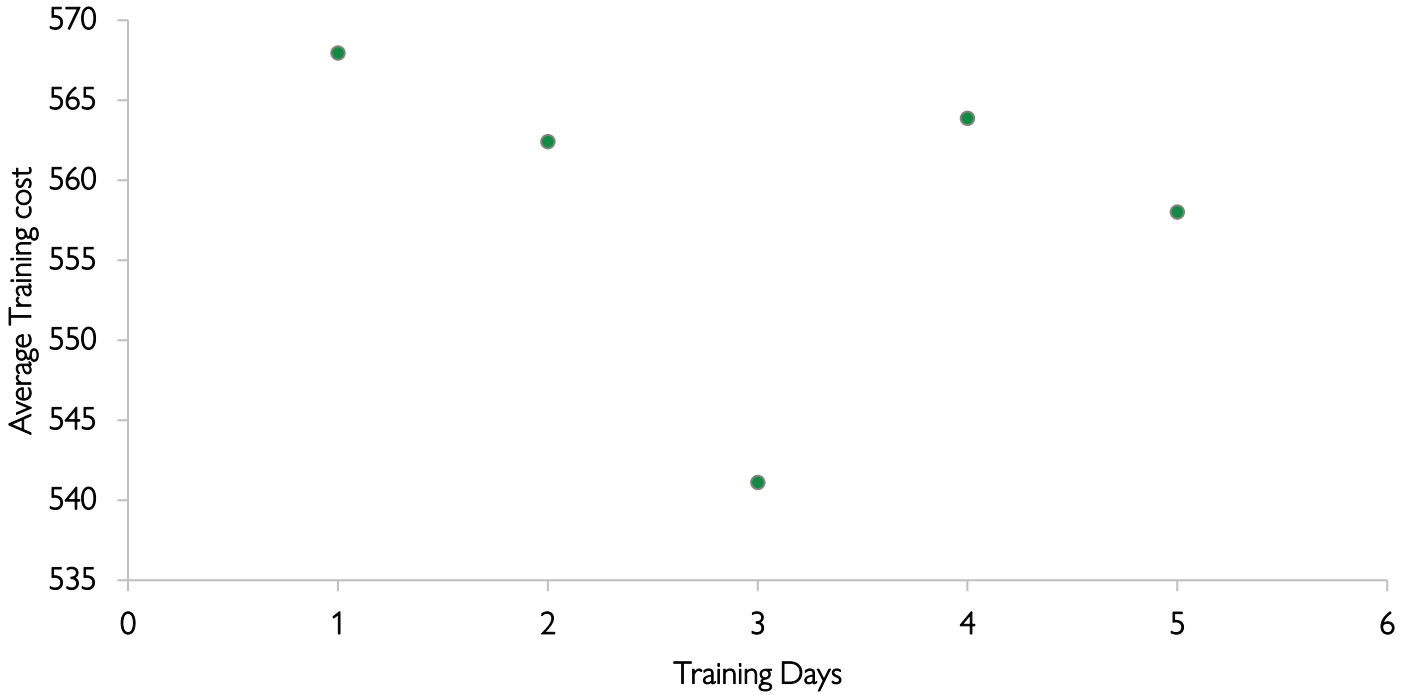
	A	B
1	Employee ID	Supervisor email
2	1001	susan.exantus@bilearner.com
3	1002	sandra.martin@bilearner.com
4	1003	keyla.del bosque@bilearner.com
5	1004	andrew.szabo@bilearner.com
6	1005	luke.patronick@bilearner.com
7	1006	colby.andreola@bilearner.com
8	1007	edward.true@bilearner.com
9	1008	judith.carabbio@bilearner.com
10	1009	adell.saada@bilearner.com
11	1010	kamari.hunter@bilearner.com
12	1011	sarah.malone@bilearner.com
13	1012	skyler.blackwell@bilearner.com
14	1013	jasmin.shah@bilearner.com
15	1014	kole.quinn@bilearner.com
16	1015	ansley.jackson@bilearner.com
17	1016	jayda.reese@bilearner.com
18	1017	julien.whitehead@bilearner.com
19	1018	alan.haynes@bilearner.com
20	1019	kamryn.herrera@bilearner.com
21	1020	kelvin.foster@bilearner.com
22	1021	joe.fletcher@bilearner.com
23	1022	frederick.howe@bilearner.com
24	1023	nickolas.davila@bilearner.com
25	1024	kasey.boyer@bilearner.com
26	1025	giovanni.jenkins@bilearner.com
27	1026	alexis.moss@bilearner.com

Q8: Can you identify the department with the highest average "Employee Rating?"

Department	Average Employee Rating
Admin Offices	3.03
Production	2.98
IT/IS	2.97
Sales	2.91
Software Engineering	2.90
Executive Office	2.79

Highest Average "Employee Rating" : Admin Offices

Q9: Create a scatter plot to explore the relationship between "Training Duration (Days)" and "Training Cost."



Q10: Build a pivot table that shows the count of employees by "RaceDesc" and "GenderCode."

Employee Count	Race				
Gender	Asian	Black	Hispanic	Other	White
Female	346	346	325	318	347
Male	283	272	247	264	252

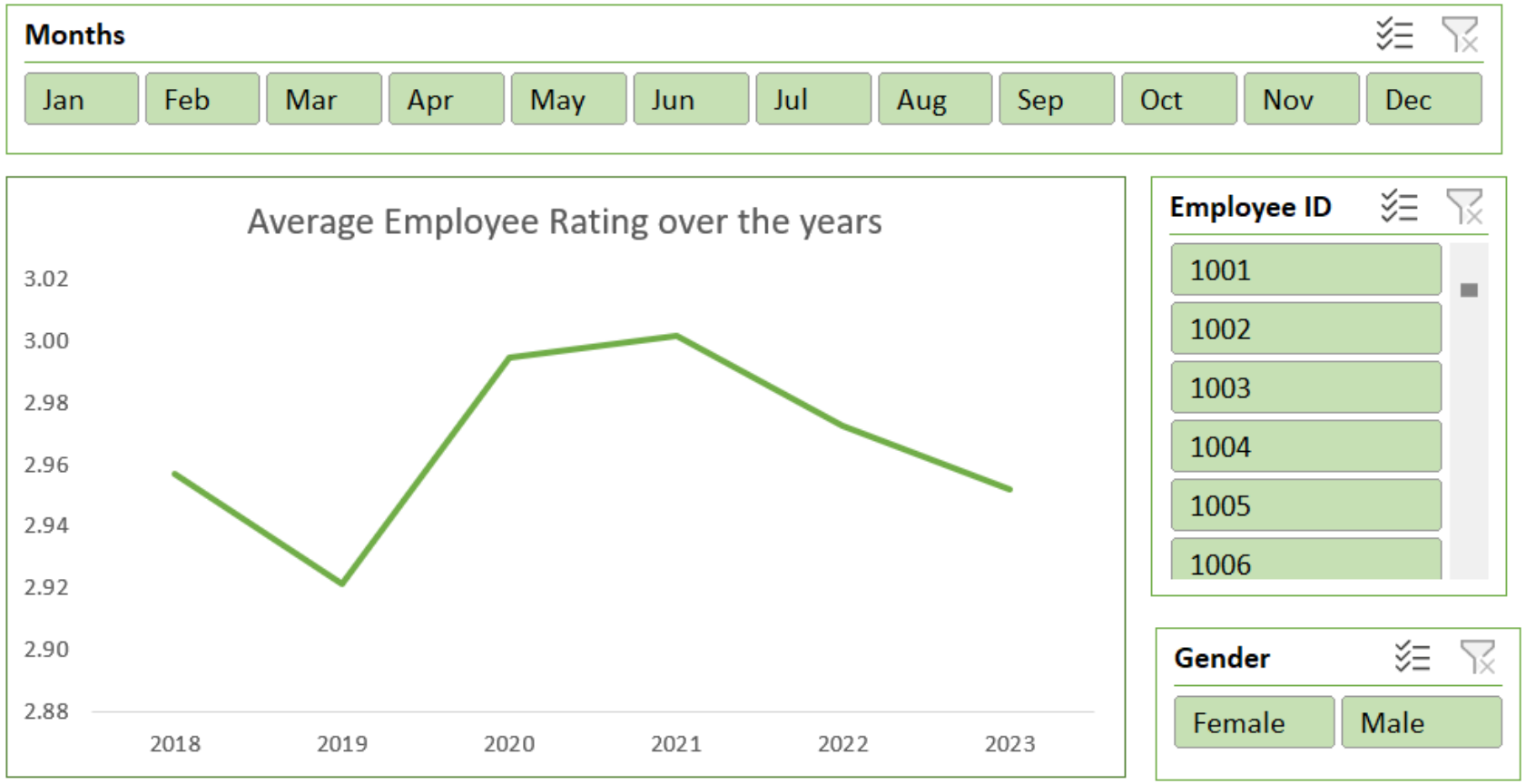
Q11: Use INDEX and MATCH functions to find the "Training Program Name" for an employee with a specific ID.

Employee ID	Training Program Name
1001	Customer Service
1002	Leadership Development
1003	Technical Skills
1004	Customer Service
1005	Communication Skills
1006	Project Management
1007	Leadership Development
1008	Technical Skills
1009	Customer Service
1010	Communication Skills
1011	Communication Skills
1012	Technical Skills
1013	Project Management
1014	Customer Service
1015	Leadership Development
1016	Communication Skills
1017	Technical Skills
1018	Project Management
1019	Project Management
1020	Technical Skills

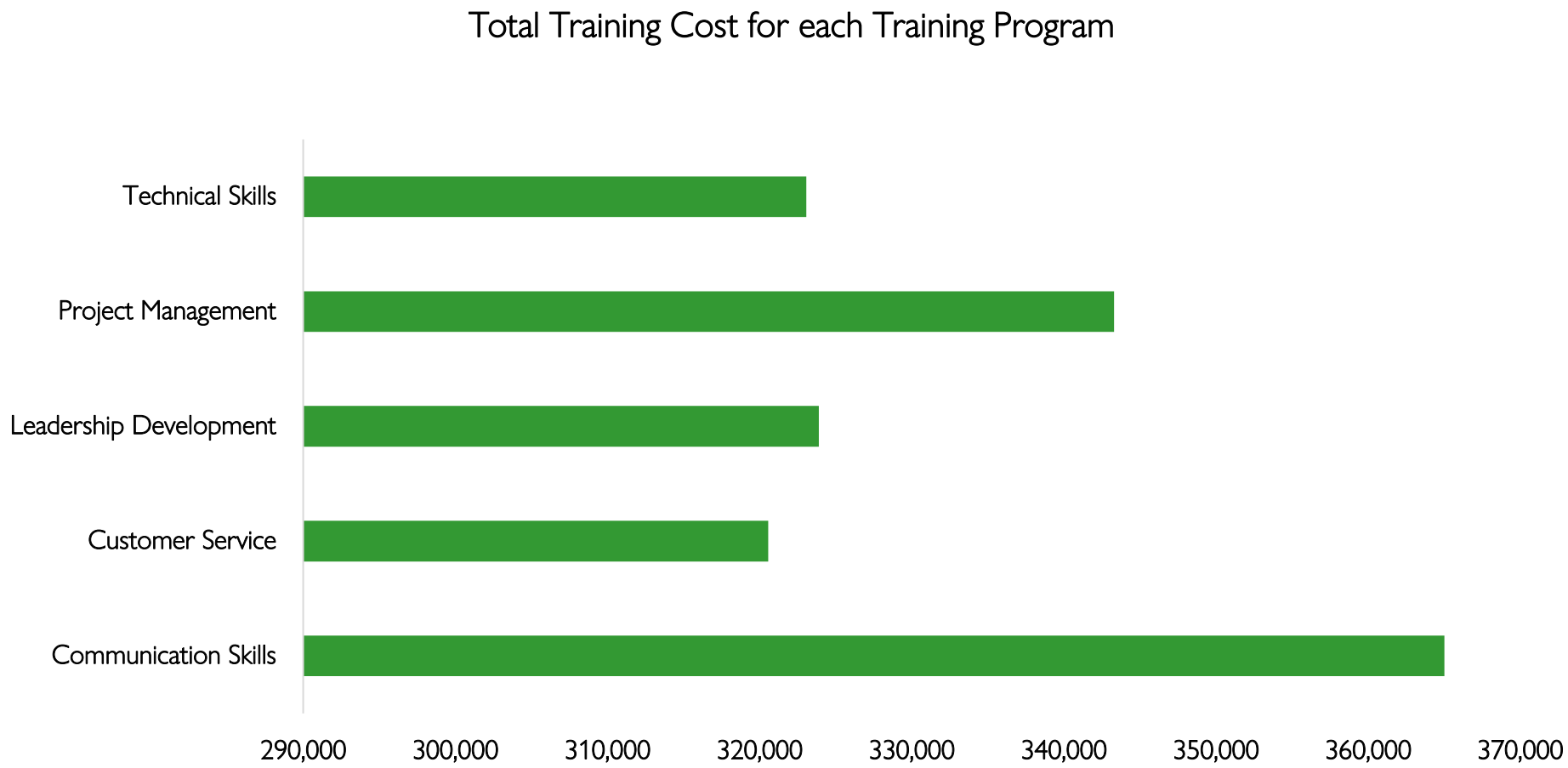
Q12: Create a multi-level pivot table to analyze the "Performance Score" by "BusinessUnit" and "JobFunctionDescription."

Department / Business Unit	Performance Score Count
Accountant	**2**
WBL	2
Accounting	**9**
CCDR	1
MSC	1
NEL	1
PYZ	2
SVG	1
TNS	3
Administration	**23**
BPC	3
CCDR	1
EW	1
MSC	6
NEL	1
PL	1
PYZ	2
SVG	3
TNS	2
WBL	3
Administrative	**56**
BPC	7
CCDR	4
EW	7
MSC	10
NEL	5

Q13: Design a dynamic chart that allows users to select and visualize the performance of any employee over time.



Q14: Calculate the total training cost for each "Training Program Name" and display it in a bar chart.



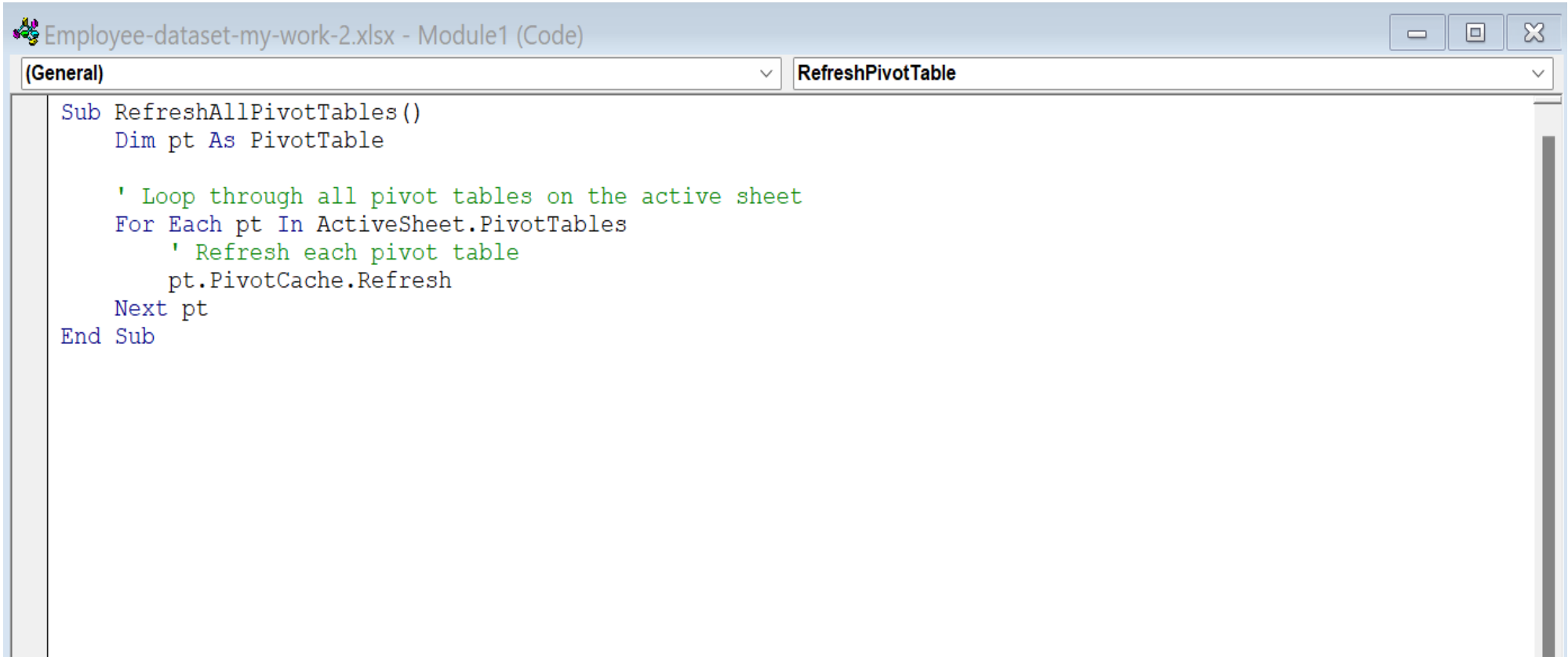
Q15: Apply advanced conditional formatting to highlight the top 10% and bottom 10% of employees based on "Current Employee Rating."

	Division	DOB	State	LocationCode	RaceDesc	MaritalDesc	Performance Score	Current Employee Rating
1176	Field Operations	2/10/1987	MA	71740	Hispanic	Widowed	Exceeds	2
1177	Field Operations	22-12-1988	MA	4056	Asian	Married	Exceeds	2
1178	Catv	2/9/1951	MA	35807	Asian	Single	PIP	4
1179	Fielders	30-08-1990	MA	86281	Hispanic	Married	PIP	4
1180	Project Management -	4/1/1996	MA	28181	Black	Widowed	PIP	4
1181	Field Operations	10/8/1980	MA	74027	Hispanic	Widowed	PIP	5
1182	Field Operations	13-08-1991	MA	94011	Black	Single	PIP	5
1183	General - Eng	20-01-1992	MA	96129	Black	Widowed	Exceeds	4
1184	Finance & Accounting	12/9/1949	MA	81415	White	Divorced	Exceeds	5
1185	Aerial	20-02-1984	MA	22258	Other	Divorced	Exceeds	2
1186	Aerial	21-04-1959	MA	13138	Asian	Single	Exceeds	5
1187	Field Operations	17-05-1997	MA	74447	Hispanic	Married	Exceeds	1
1188	Engineers	26-01-1998	MA	31571	Hispanic	Married	Exceeds	5
1189	Field Operations	21-02-1965	MA	1509	Black	Married	Exceeds	2
1190	Shop (Fleet)	4/7/1944	MA	15861	White	Divorced	Needs Improvement	5
1191	General - Con	20-01-1985	MA	46637	Asian	Single	Needs Improvement	5
1192	Engineers	19-11-1971	MA	47342	Asian	Married	Needs Improvement	5
1193	General - Con	29-06-1945	MA	41219	Black	Divorced	Needs Improvement	1
1194	Field Operations	1/8/1963	MA	67704	White	Married	Needs Improvement	4
1195	Field Operations	18-02-1992	MA	57434	Other	Widowed	Needs Improvement	2
1196	Underground	31-10-1954	MA	46366	Black	Single	Needs Improvement	2

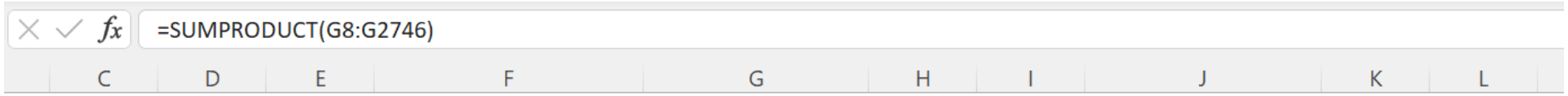
Q16: Use a calculated field in a pivot table to determine the average "Engagement Score" per year.

Year	Average Engagement Score
2022	2.92
2023	2.95

Q17: Can you build a macro that automates the process of updating and refreshing all pivot tables in the workbook?



Q18: Utilize the SUMPRODUCT function to calculate the total training cost for employees in a specific location.



Location	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

Total Training Cost = 1675886

Employee Analysis Dashboard

PayZone: Zone A | Zone B | Zone C

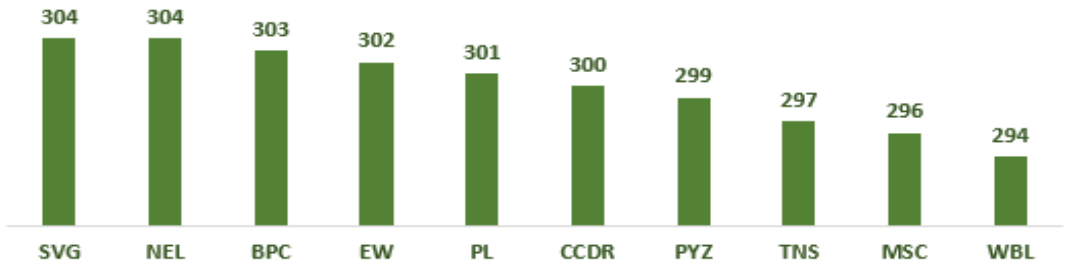
Gender: Female | Male

Months: Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec

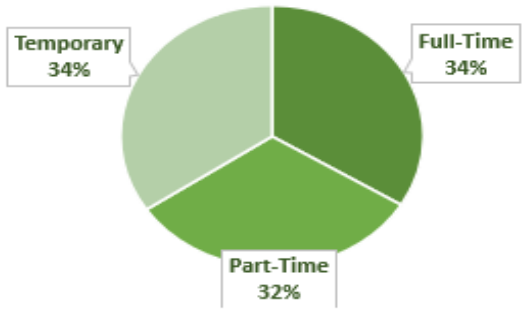
Title: Accountant I | Administrative Assistant | Area Sales Manager | BI Developer | BI Director | CIO

Employee ID: 1001 | 1002

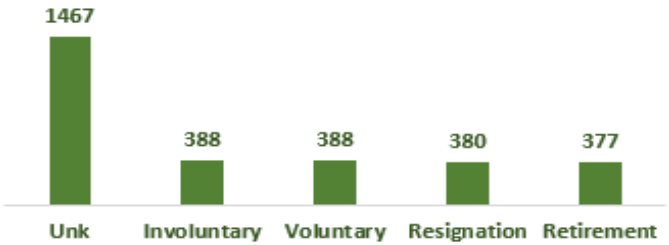
Employee Count by Business Unit



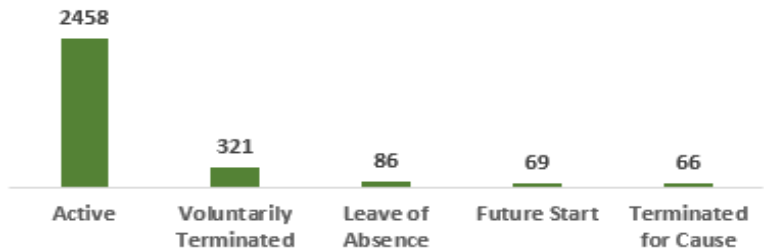
Employee count by Employement Type



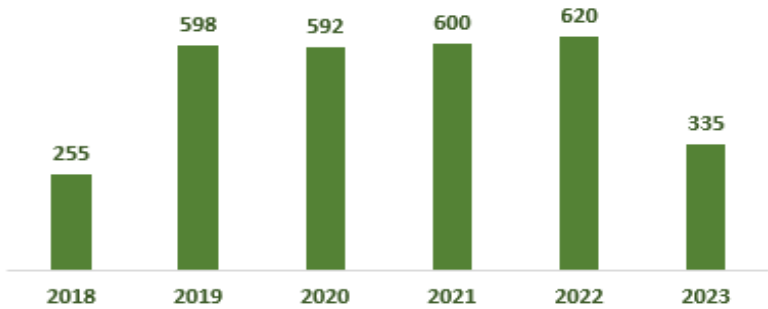
Employee count by Termination Type



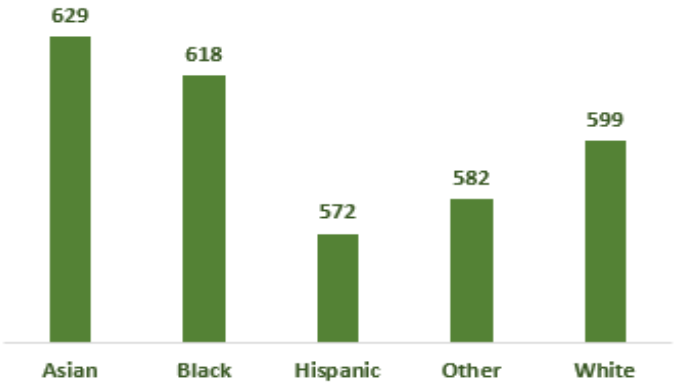
Employee count by Employee Status



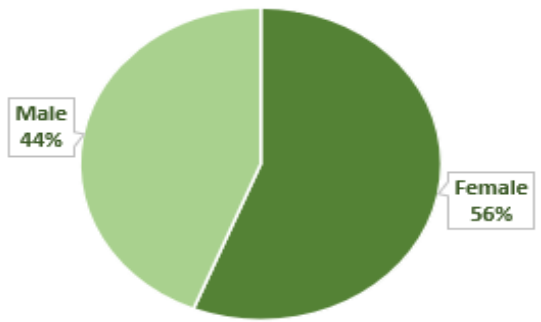
Employee count over the years



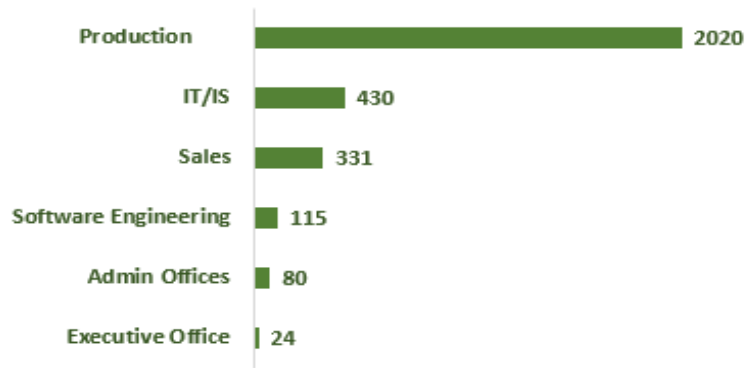
Employee count by Race



Gender Distribution



Employee Count by Department



Excel Concepts Used

- Conditional Formatting
- VLOOKUP / XLOOKUP
- Filtering data
- Pivot Tables
- Charts
- INDEX
- MATCH
- Multi-level Pivot Table
- Dynamic charts (slicers)
- Calculated fields
- Advanced Conditional Formatting
- Macros
- Dashboards
- Sorting

Summary

This internship project equipped me with invaluable skills in data analysis, visualization, and automation. Through addressing real-world HR questions, I honed my ability to leverage tools like pivot tables, VLOOKUP, and creating dashboard. This experience not only enhanced my technical proficiency but also underscored the critical role of data analytics in making informed business decisions

Thank you

Muskan Kashyap

- Data Analyst Intern at Psyliq