



PSYLIQ

EMPLOYEE DATA ANALYSIS

BY:-
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DATA PROBLEM

Data exists in Excel File.
The data consist of 1,80,127 records and 45 attributes.
The Excel file consist the following data-

- ❖ Employee_data
- ❖ Employee_engagement_survey_data
- ❖ Recruitment_data
- ❖ Training_and_development_data

TASK ASSIGNED

To Handle the dataset and show the insights via
Excel and Power Bi Tool.

CAN YOU CREATE A PIVOT TABLE TO SUMMARIZE THE TOTAL NUMBER OF EMPLOYEES IN EACH DEPARTMENT?

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

APPLY CONDITIONAL FORMATTING TO HIGHLIGHT EMPLOYEES WITH A "PERFORMANCE SCORE" BELOW 3 IN RED.

Termination Type	Termination Description	Department Type	Division	DOB	State	Job Function Description	Gender Code	Location Code	Race Desc	Marital Desc	Performance Score	P_SCORE	Current Employee Rating
1173	Resignation	Production	General - Con	28613	MA	Groundman	Female	8372	Black	Divorced	Needs Improvement	2	3
1174	Resignation	Production	Field Operations	13-11-1975	MA	Laborer	Male	82257	White	Divorced	Exceeds	4	3
1175	Unk	Production	General - Con	19-05-1993	MA	Technician	Female	23314	Hispanic	Married	Exceeds	4	3
1176	Resignation	Production	Engineers	33095	MA	Engineer	Male	45740	Asian	Single	Exceeds	4	3
1177	Voluntary	Production	General - Con	36809	MA	Technician	Female	60262	Asian	Married	Exceeds	4	3
1178	Unk	Production	General - Con	25-12-1968	MA	Locator	Male	29223	White	Single	Exceeds	4	3
1179	Unk	Production	General - Con	19-10-1976	MA	Operator	Male	80948	Asian	Married	Exceeds	4	3
1180	Resignation	Production	Field Operations	20-10-1956	MA	Laborer	Female	95266	Black	Single	Exceeds	4	3
1181	Unk	Production	Field Operations	16226	MA	Laborer	Female	33304	White	Divorced	Exceeds	4	3
1182	Unk	Production	Shop (Fleet)	32062	MA	Shop	Female	36632	Hispanic	Married	Needs Improvement	2	3
1183	Unk	Production	Field Operations	24-02-1997	MA	Technician	Female	20625	White	Widowed	PIP	1	3
1184	Retirement	Production	General - Eng	26-11-1953	MA	Engineer	Male	26283	Black	Married	PIP	1	3
1185	Involuntary	Production	General - Con	28-01-1986	MA	Flagger	Female	67750	White	Single	Needs Improvement	2	3
1186	Voluntary	Production	Project Management - Con	25-01-1962	MA	Coordinator	Female	53913	Hispanic	Widowed	Needs Improvement	2	3
1187	Retirement	Production	General - Sga	28-05-1993	MA	Lineman	Male	76052	White	Single	Needs Improvement	2	3
1188	Voluntary	Production	Field Operations	34765	MA	Laborer	Female	61768	Other	Single	Exceeds	4	3
1189	Unk	Production	Field Operations	19-03-1951	MA	Director	Male	33335	Asian	Divorced	Needs Improvement	2	3
1190	Unk	Production	General - Con	16-01-1960	MA	Foreman	Male	69290	White	Married	Exceeds	4	3
1191	Unk	Production	Field Operations	33303	MA	Laborer	Female	65106	Black	Divorced	Needs Improvement	2	3
1192	Unk	Production	Aerial	27-12-1991	MA	Lineman	Female	12740	Black	Divorced	Needs Improvement	2	3
1193	Unk	Production	Field Operations	16-06-1977	MA	Laborer	Male	58121	White	Widowed	Needs Improvement	2	3
1194	Retirement	Production	General - Con	23597	MA	Foreman	Female	95591	Black	Widowed	Needs Improvement	2	3
1195	Unk	Production	Executive	24565	MA	Executive Assistant	Male	70072	Asian	Single	Needs Improvement	2	3
1196	Involuntary	Production	Field Operations	27649	MA	Supervisor	Male	2134	Other	Divorced	Needs Improvement	2	3
1197	Retirement	IT/S	Aerial	21-01-1942	MA	Director	Male	2134	Asian	Single	Needs Improvement	2	3
1198	Voluntary	IT/S	Finance & Accounting	17-06-2001	MA	Intern	Male	2045	Other	Divorced	Needs Improvement	2	3
1199	Resignation	IT/S	Field Operations	22-10-1996	MA	Top Hand	Male	1887	White	Widowed	Needs Improvement	2	3
1200	Unk	IT/S	Shop (Fleet)	16-09-1977	MA	Manager	Male	2056	Other	Single	Exceeds	4	3
1201	Resignation	IT/S	General - Con	17506	MA	Technician	Female	2056	Other	Married	Needs Improvement	2	3
1202	Unk	IT/S	Field Operations	14-01-1966	MA	Technician	Female	2110	Other	Divorced	Exceeds	4	3
1203	Retirement	IT/S	Catv	27367	MA	Foreman	Female	1886	Asian	Single	Needs Improvement	2	3
1204	Voluntary	IT/S	Field Operations	16893	MA	Engineer	Female	2970	Hispanic	Married	Fully Meets	3	3
1205	Involuntary	IT/S	General - Con	16194	MA	Foreman	Female	13058	Other	Single	Fully Meets	3	3

CALCULATE THE AVERAGE "SATISFACTION SCORE" FOR MALE AND FEMALE EMPLOYEES SEPARATELY USING A PIVOT TABLE.

	A	B	C	D	E	F	G	H	I
3									
4	Row Labels	Average of Satisfaction Score							
5	Female	3.020214031							
6	Male	3.024279211							
7	Grand Total	3.022							
8									
9									
10									
11									
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31									

PivotTable Fields

Choose fields to add to report:

Search

- ☐ DOB
- ☐ State
- ☐ JobFunctionDescription
- ☒ GenderCode
- ☐ LocationCode
- ☐ RaceDesc
- ☐ MaritalDesc
- ☐ Performance Score
- ☐ Current Employee Rating
- ☒ Satisfaction Score

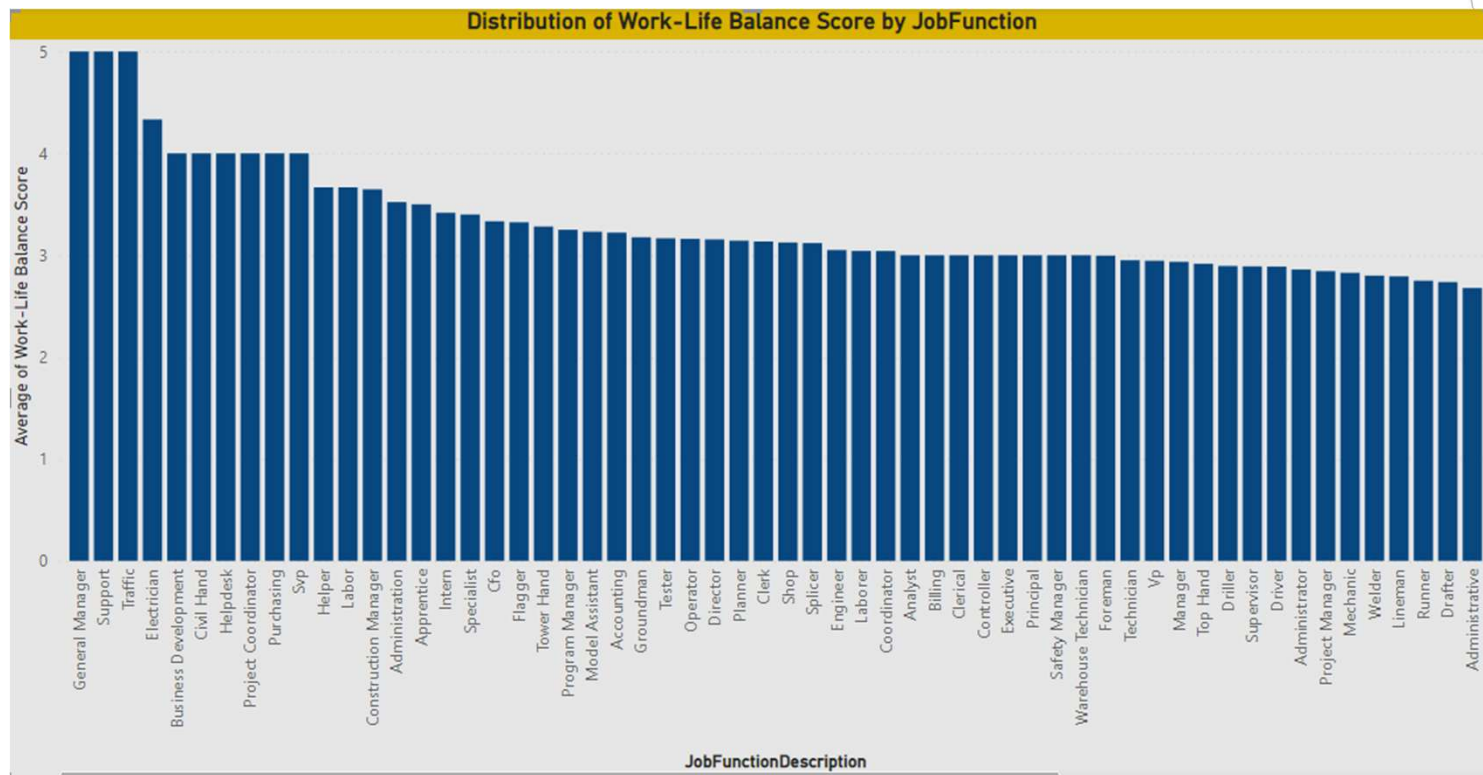
More Tables...

Drag fields between areas below:

Filters	Columns
Rows	Values
GenderCode	Average of Satisfaction...

☐ Defer Layout Update

CREATE A CHART TO VISUALIZE THE DISTRIBUTION OF "WORK-LIFE BALANCE SCORE" FOR DIFFERENT JOB FUNCTIONS.




FILTER THE DATA TO DISPLAY ONLY TERMINATED EMPLOYEES AND FIND OUT THE MOST COMMON "TERMINATION TYPE."

Row Labels	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
Involuntary Count	107
Resignation Count	96
Retirement Count	86
Voluntary Count	98
Grand Total	387

- In terms of terminated for cause the most common type of termination is Resignation.
- In terms of voluntarily terminated the most common type of termination is Involuntary.

CALCULATE THE AVERAGE "ENGAGEMENT SCORE" FOR EACH DEPARTMENT USING A PIVOT TABLE.


Department	 Average of Engagement Score
Admin Offices	3
Executive Office	2.875
IT/IS	2.934883721
Production	2.95049505
Sales	2.876132931
Software Engineering	2.92173913
Grand Total	2.939666667

USE VLOOKUP TO FIND THE SUPERVISOR'S EMAIL ADDRESS FOR A SPECIFIC EMPLOYEE.

File Home Insert Page Layout Formulas Data Review View Help								
H1		=VLOOKUP(A2,A1:H14,8,0)						
	A	B	C	D	E	F	G	H
1	Employee	Application	First Name	Last Name	Gender	Date of Birth	Phone Number	perezjanet@example.org
2	1001	03-Jun-23	Scott	Sheppard	Male	#####	421-429-7	perezjanet@example.org
3	1002	#####	Stanley	Lewis	Male	#####	+1-451-57	grossmark@example.com
4	1003	#####	Javier	Li	Female	#####	(858)901-5	katiemaldonado@example.com
5	1004	28-Jul-23	Christophe	Johnston	Other	#####	(853)681-1	sheila73@example.com
6	1005	05-Jun-23	Melissa	Hicks	Other	#####	364-575-8	emilypatterson@example.org
7	1006	26-Jul-23	Christian	Maddox	Female	#####	(894)940-2	pvelasquez@example.net
8	1007	09-Jun-23	Paul	Hammond	Female	#####	#####	aclayton@example.net
9	1008	15-Jul-23	Madison	Williams	Male	#####	001-902-9	jeffreyellis@example.com
10	1009	16-Jun-23	Rachael	Duran	Male	#####	+1-738-58	hamptontimothy@example.net
11	1010	#####	Sherri	Taylor	Male	#####	915.372.0	cshaw@example.net
12	1011	#####	Jennifer	Weaver	Other	#####	852.435.8	sloankrista@example.org
13	1012	04-Jun-23	Kyle	Blake	Other	#####	001-527-9	shelia63@example.net
14	1013	23-Jul-23	James	Bailey	Female	#####	(606)926-6	fraziermichelle@example.net
15	1014	12-Jun-23	Heidi	Wood	Male	#####	(209)368-2	brentswanson@example.org
16	1015	04-Jul-23	Johnny	Nguyen	Other	#####	001-970-5	clarkdawn@example.net
17	1016	26-Jul-23	Olivia	Watson	Female	#####	#####	rachel98@example.com
18	1017	#####	Anita	Jenkins	Male	#####	409-660-9	charles11@example.net
19	1018	12-Jun-23	John	Coleman	Female	#####	332.925.0	smithashley@example.org
20	1019	26-Jun-23	Adam	Best	Other	#####	(592)449-4	joe34@example.net
21	1020	#####	Cheryl	Peterson	Male	#####	001-466-8	corey49@example.net
22	1021	03-Jul-23	Rebecca	Jensen	Female	#####	573-612-6	jennifer31@example.com
23	1022	#####	Gabriel	Norris	Female	#####	+1-336-34	gibbsjacob@example.net
24	1023	#####	Anne	Murphy	Other	#####	853-255-8	kristinross@example.net
25	1024	25-Jun-23	Thomas	Phillips	Other	#####	(305)772-2	melvinzimmerman@example.org
26	1025	#####	Nicholas	Conley	Other	#####	600.967.3	jameslucas@example.com
27	1026	07-Jul-23	Jennifer	Austin	Other	#####	001-487-8	prodriguez@example.com
28	1027	22-Jun-23	Cory	Miller	Other	#####	427.370.2	sandraferrell@example.net
29	1028	#####	Barbara	Lopez	Other	#####	#####	lisalee@example.com
30	1029	15-Jun-23	Maria	Campbell	Male	#####	(960)528-9	juliecarter@example.net
31	1030	06-Jul-23	Duane	Lee	Other	#####	001-266-4	jgarrett@example.com
32	1031	27-Jul-23	Danny	Jones	Male	#####	001-259-8	mhenderson@example.com
33	1032	02-Jun-23	Hannah	Moore	Other	#####	294.389.4	debra21@example.net
34	1033	#####	Mckenzie	Howe	Male	#####	230.888.7	debra17@example.net

recruitment data

CAN YOU IDENTIFY THE DEPARTMENT WITH THE HIGHEST AVERAGE
"EMPLOYEE RATING?"

Department	 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

Sales department has the highest average Employee rating.

CREATE A SCATTER PLOT TO EXPLORE THE RELATIONSHIP BETWEEN "TRAINING DURATION (DAYS)" AND "TRAINING COST."



BUILD A PIVOT TABLE THAT SHOWS THE COUNT OF EMPLOYEES BY "RACEDESC" AND "GENDERCODE."

RaceDesc by gender code		Count of Employee ID
[-] Asian		629
	Female	346
	Male	283
[-] Black		618
	Female	346
	Male	272
[-] Hispanic		572
	Female	325
	Male	247
[-] Other		582
	Female	318
	Male	264
[-] White		599
	Female	347
	Male	252
Grand Total		3000

USE INDEX AND MATCH FUNCTIONS TO FIND THE "TRAINING PROGRAM NAME" FOR AN EMPLOYEE WITH A SPECIFIC ID.

J2	=INDEX(A1:I14,MATCH(A2,A1:A14,0),3)									
	A	B	C	D	E	F	G	H	I	J
1	Employee ID	Training Date	Training Program Name	Training Type	Training Outcome	Location	Trainer	Training Duration(Days)	Training Cost	column1
2	1001	21-Sep-22	Customer Service	Internal	Failed	Port Greg	Amanda Daniels	4	510.83	Customer Service
3	1002	19-Jul-23	Leadership Development	Internal	Failed	Brandonview	Brittany Chambers	2	582.37	Leadership Development
4	1003	24-Feb-23	Technical Skills	Internal	Incomplete	Port Briannahaven	Mark Roberson	4	777.06	Technical Skills
5	1004	12-Jan-23	Customer Service	Internal	Completed	Knightborough	Richard Fisher	2	824.3	Customer Service
6	1005	12-May-23	Communication Skills	External	Passed	Bruceshire	Heather Shaffer	4	145.99	Communication Skills
7	1006	08-May-23	Project Management	Internal	Failed	Erinfort	Michael Duke	2	838.07	Project Management
8	1007	14-May-23	Leadership Development	External	Failed	New Christopher	Virginia Clayton DVM	2	667.32	Leadership Development
9	1008	02-Aug-23	Technical Skills	External	Incomplete	Lowemouth	Erica Maxwell	2	758.18	Technical Skills
10	1009	21-Aug-22	Customer Service	Internal	Incomplete	Johnland	Katelyn Hartman	2	101.21	Customer Service
11	1010	19-Aug-22	Communication Skills	External	Incomplete	Lake Kimfurt	Rhonda Clark	5	332.25	Communication Skills
12	1011	06-Nov-22	Communication Skills	Internal	Completed	Smithshire	Natalie Fields	1	803.98	Communication Skills
13	1012	28-Mar-23	Technical Skills	External	Failed	Howardburgh	Theresa Martinez	3	887.08	Technical Skills
14	1013	08-Apr-23	Project Management	External	Incomplete	East Jessicatown	Michael Marks	2	657.85	Project Management
15	1014	21-Feb-23	Customer Service	External	Incomplete	Watersview	Rachel Jones	2	895.49	Customer Service
16	1015	13-May-23	Leadership Development	External	Passed	Port Ninaland	Jennifer Olson	1	539	Leadership Development
17	1016	30-Apr-23	Communication Skills	External	Completed	Lake Stuartfurt	Eric Johnson	2	606.68	Communication Skills
18	1017	14-Nov-22	Technical Skills	External	Passed	Cooleybury	Joseph McIntyre	3	265.73	Technical Skills
19	1018	25-Mar-23	Project Management	Internal	Incomplete	Larsonborough	Whitney Morgan DVM	2	673.29	Project Management
20	1019	26-Oct-22	Project Management	External	Passed	Powellland	Jon Garcia	5	436.98	Project Management
21	1020	30-Dec-22	Technical Skills	External	Passed	Chadport	Nicole Taylor	4	578.58	Technical Skills
22	1021	10-Mar-23	Technical Skills	Internal	Failed	Patrickhaven	Crystal Nelson	1	647.16	Technical Skills
23	1022	12-Jan-23	Project Management	Internal	Failed	Lindseyburgh	Kevin Nichols	1	664.23	Project Management
24	1023	19-Oct-22	Project Management	Internal	Failed	West Justinborough	Angela Good	4	893.07	Project Management
25	1024	11-Oct-22	Project Management	External	Completed	Hullmouth	Keith Curtis	5	868.98	Project Management
26	1025	13-Jan-23	Project Management	Internal	Incomplete	Thompsonbury	Nina Rodriguez	5	761.95	Project Management
27	1026	17-Apr-23	Communication Skills	External	Incomplete	Cynthiachester	Jennifer Robinson	4	431.57	Communication Skills
28	1027	16-Mar-23	Communication Skills	External	Incomplete	East Jackstad	Mr. Robert Byrd MD	4	357.57	Communication Skills
29	1028	19-Jan-23	Technical Skills	Internal	Incomplete	East Christopher	Gina Moore	3	804.06	Technical Skills
30	1029	25-Feb-23	Project Management	Internal	Failed	Lake Anthonyton	Christopher Rowland	5	729.41	Project Management
31	1030	04-Jan-23	Communication Skills	Internal	Completed	Longton	Wendy Gibson	1	169.46	Communication Skills
32	1031	26-Dec-22	Communication Skills	Internal	Failed	New Williamland	Ashley Gonzalez	1	833.28	Communication Skills
33	1032	07-Dec-22	Technical Skills	External	Completed	New Jackie	Cynthia Bradley	3	482.23	Technical Skills
34	1033	20-Jun-23	Communication Skills	Internal	Incomplete	Smithshire	William Smith	4	169.85	Communication Skills

training_and_development_data

12. CREATE A MULTI-LEVEL PIVOT TABLE TO ANALYZE THE "PERFORMANCE SCORE" BY "BUSINESSUNIT" AND "JOBFUNCTIONDESCRIPTION."

Business Unit A/c	Performance Score & P.Score	Count of Employee ID
BPC		303
CCDR		300
EW		302
MSC		296
NEL		304
PL		301
PYZ		299
SVG		304
TNS		297
WBL		294
Grand Total		3000

Choose fields to add to report:

Search

- ☐ Division
- ☐ DOB
- ☐ State
- ☒ JobFunctionDescription
- ☐ GenderCode
- ☐ LocationCode
- ☐ RaceDesc
- ☐ MaritalDesc
- ☒ Performance Score
- ☐ Current Employee Rating

More Tables...

Drag fields between areas below:

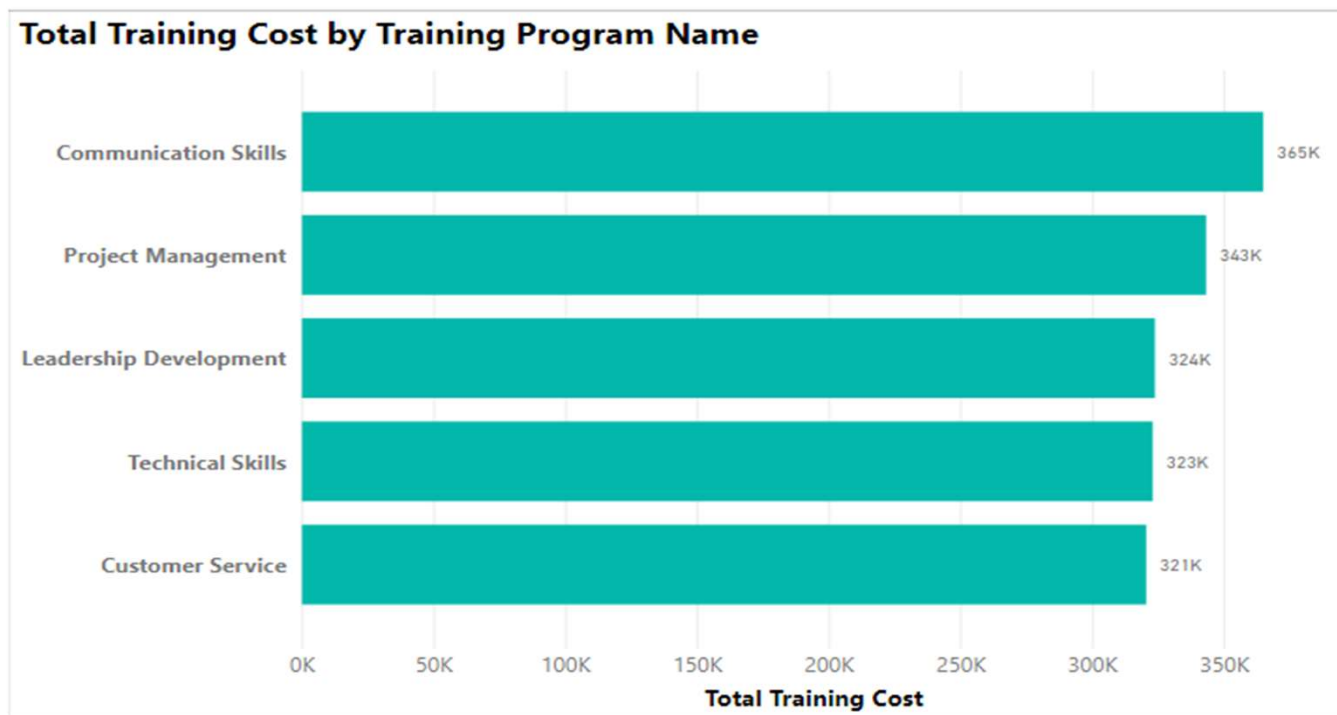
Filters	Columns
Rows	Values
BusinessUnit	Count of Employee ID
JobFunctionDescription	
Performance Score	

As seen from above table if we expand the BusinessUnit we will get the Jobfunctiondescription and its performance Score.

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.



APPLY ADVANCED CONDITIONAL FORMATTING TO HIGHLIGHT THE TOP 10% AND BOTTOM 10% OF EMPLOYEES BASED ON "CURRENT EMPLOYEE RATING."

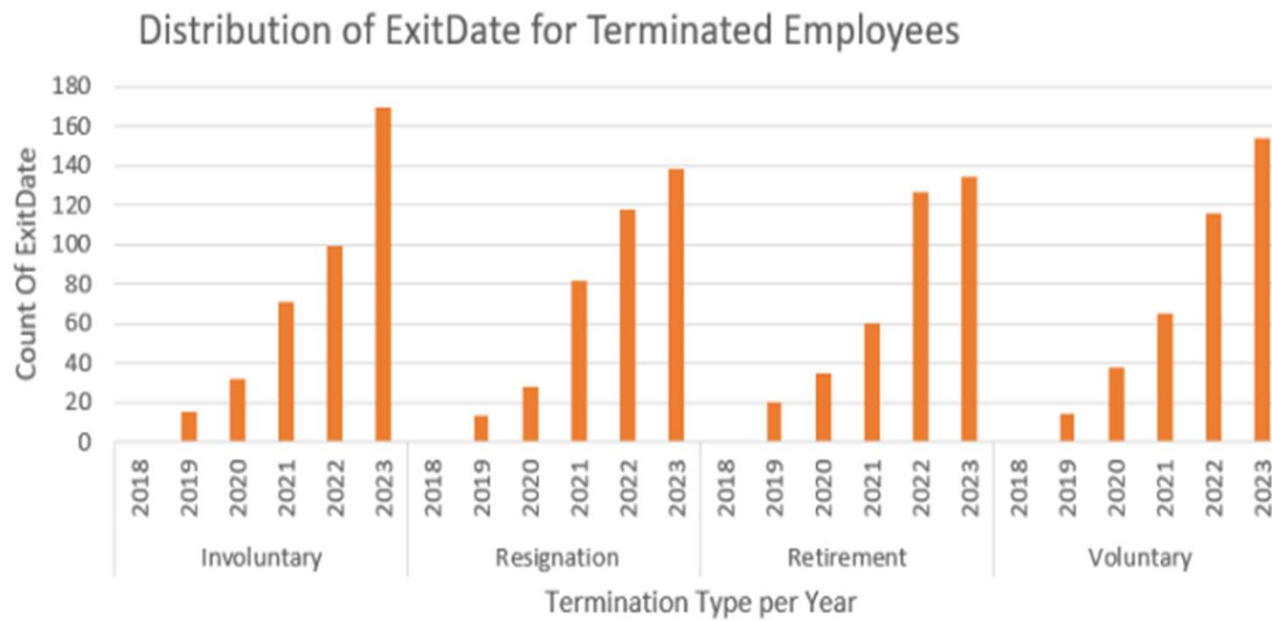
File Home Insert Page Layout Formulas Data Review View Help													Share
W32													
	O	P	Q	R	S	T	U	V	W	X	Y	Z	
1	TerminationDescription	DepartmentType	Division	DOB	State	JobFunctionDescription	GenderCode	LocationCode	RaceDesc	MaritalDesc	Performance Score	Current Employee Rating	
2		Production	Finance & Accounting	10-07-1969	MA	Accounting	Female	34904	White	Widowed	Fully Meets	4	
3		Production	Aerial	30-08-1965	MA	Labor	Male	6593	Hispanic	Widowed	Fully Meets	3	
4		Sales	General - Sga	10-06-1991	MA	Assistant	Male	2330	Hispanic	Widowed	Fully Meets	4	
5		Sales	Finance & Accounting	04-04-1998	ND	Clerk	Male	58782	Other	Single	Fully Meets	2	
6		Sales	General - Con	29-08-1969	FL	Laborer	Female	33174	Other	Married	Fully Meets	3	
7		Sales	Field Operations	04-03-1949	CT	Driver	Male	6050	Black	Married	Fully Meets	3	
8	Me see picture nature degree benefit.	Sales	General - Eng	07-01-1942	CA	Technician	Female	90007	Hispanic	Divorced	Exceeds	4	
9	Blue community type skill story.	Sales	Engineers	03-07-1957	OR	Engineer	Female	97756	White	Divorced	Fully Meets	2	
10		Sales	Executive	15-05-1974	TX	Executive Assistant	Male	78789	Black	Widowed	Exceeds	3	
11	Summer personal bag.	Sales	Engineers	11-11-1949	TX	Engineer	Male	78207	Asian	Widowed	Fully Meets	5	
12		Sales	Field Operations	26-01-1964	IN	Technician	Female	46204	Other	Single	Fully Meets	5	
13	Alone once than. More condition pay far.	Sales	General - Con	04-06-1948	GA	Technician	Female	30428	Asian	Married	Fully Meets	3	
14	Foot in theory minute recognize test.	Sales	Splicing	24-11-1981	CO	Splicer	Male	80820	Other	Single	Fully Meets	3	
15	Degree wish science when thing week old.	Sales	Finance & Accounting	11-06-1951	KY	Controller	Female	40220	White	Divorced	Fully Meets	3	
16		Sales	General - Con	21-11-1989	NV	Lineman	Male	89139	Asian	Widowed	Exceeds	4	
17	Fear particular method stage.	IT/IS	Field Operations	24-11-1952	MA	Laborer	Male	2810	Black	Single	Exceeds	2	
18	Wall body wonder successful.	IT/IS	Project Management - Con	04-08-1994	KY	Coordinator	Male	2621	Asian	Widowed	Fully Meets	3	
19	Visit foot nearly radio treatment.	Sales	Engineers	15-11-1983	KY	Director	Male	44553	Other	Widowed	Fully Meets	3	
20		Sales	Project Management - Con	12-07-1985	KY	Supervisor	Female	5360	Other	Married	Exceeds	4	
21		Sales	Field Operations	05-01-1996	TX	Driller	Female	16325	White	Divorced	Exceeds	2	
22	Unit pass office southern break one.	Sales	General - Con	17-02-1964	TX	Technician	Female	43481	Asian	Widowed	Fully Meets	3	
23	List class mind.	Sales	Engineers	05-12-1958	TX	Specialist	Male	50705	Asian	Widowed	Fully Meets	3	
24	Price third parent evening.	Sales	General - Eng	18-09-1992	CO	Technician	Male	5168	Black	Single	Fully Meets	5	
25	Cause military a sense. Doctor property may.	Sales	Field Operations	08-11-1994	CO	Operator	Male	11765	Other	Single	Exceeds	2	
26	Station another son positive.	Sales	General - Con	15-01-1968	CO	Technician	Male	71071	Other	Divorced	Exceeds	3	
27		Sales	General - Con	01-07-1947	IN	Foreman	Male	12122	Black	Divorced	Fully Meets	2	
28		Sales	Fielders	04-07-1982	MA	Engineer	Male	87065	White	Widowed	Fully Meets	4	
29		IT/IS	General - Con	29-01-1970	KY	Foreman	Male	10415	Hispanic	Married	Needs Improvement	4	
30	Pm local take example fund. Small heavy listen.	Sales	Project Management - Eng	18-01-1999	KY	Manager	Male	3763	Other	Widowed	Exceeds	4	
31		Sales	Field Operations	25-09-1946	KY	Technician	Female	79623	Black	Divorced	Fully Meets	3	
32		Sales	Engineers	23-08-1947	KY	Technician	Female	69189	White	Divorced	Needs Improvement	3	
33	Several young whether that expert.	Sales	Field Operations	08-12-1996	TX	Laborer	Female	5194	Hispanic	Single	Needs Improvement	3	
34	Science end approach democratic treatment.	Sales	General - Con	02-09-1944	TX	Splicer	Male	8779	Black	Widowed	Exceeds	2	

The red highlight shows top 10% of employees based on Current Employee rating.
The Green highlight shows bottom 10% employees based on current Employee rating.

USE A CALCULATED FIELD IN A PIVOT TABLE TO DETERMINE THE AVERAGE "ENGAGEMENT SCORE" PER YEAR.

Year	Average of Engagement Score
2018	2.90
2019	3.07
2020	2.94
2021	2.89
2022	2.94
2023	2.83
Total	2.94

CREATE A HISTOGRAM TO UNDERSTAND THE DISTRIBUTION OF "EXITDATE" FOR TERMINATED EMPLOYEES?



DEVELOP A DASHBOARD THAT PROVIDES AN OVERVIEW OF KEY HR METRICS, INCLUDING HEADCOUNT, PERFORMANCE, AND TRAINING COSTS, USING CHARTS AND PIVOT TABLES.

Employee Dashboard Analysis



THANKYOU