

# Project:

## Using the Number of Sick Leave Hours(from the given dataset), to Determine & Understand Medical Insurance (provided by Bupa) for DIM employees.



Course: MIS 350  
DSS Decision Support System and Export Systems  
Supervised by Dr. Shartaj Fatima

# Section No:41459

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## Screenshot of our Excel Dataset:

To give a brief of the current dataset, emphasize the columns and the type of data enlisted below it.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q		
1	EmployeeKey	ParentEmployeeKey	EmployeeNationalIDAlternateKey	SalesTerritoryKey	FirstName	LastName	MiddleName	NameStyle	Title	HireDate	BirthDate	LoginID	EmailAddress	Phone	MaritalStatus	wifeName	wifePhone	
2	1	18	54417807	11	Guy	Gilbert	R	0	Production Technician - WC00	2000-07-31	15/05/1976	adventure-works\guy1	guy1@adventure-works.com	320-555-0195	M	OLIVIA	654-555-0188	G
3	2	2	553022876	11	Kevin	Brown	F	0	Marketing Assistant	2001-02-26	1981-06-03	adventure-works\kevin0	kevin0@adventure-works.com	150-555-0189	S			K
4	3	3	54555174	11	Roberto	Tamburello		0	Customer Support Rep	2000-12-22	1974-12-22	adventure-works\rrob0	rrob0@adventure-works.com	213-555-0187	M	ISLA	343-555-0190	R
5	4	4	512457891	11	Bob	Walters		0	Senior Tool Designer	2002-05-05	1969-04-13	adventure-works\bob0	rob0@adventure-works.com	123-555-0190	S			R
6	5	5	512457891	11	Bob	Walters		0	Senior Tool Designer	2002-01-23	1969-04-13	adventure-works\bob0	rob0@adventure-works.com	612-555-0100	S			R
7	6	6	26748016828	11	Thierry	D'liers	B	0	Tool Designer	2002-01-11	1953-08-29	adventure-works\thierry0	thierry0@adventure-works.com	168-555-0183	M	LILY	876-555-0193	T
8	7	7	1125476624	11	David	Bradley	M	0	Marketing Manager	2002-01-19	1969-04-19	adventure-works\david0	david0@adventure-works.com	913-555-0172	S			D
9	8	8	1125475624	11	David	Bradley	M	0	Marketing Manager	2002-01-20	1969-04-19	adventure-works\david0	david0@adventure-works.com	913-555-0172	S			D
10	9	9	2954573532	11	Jolynn	Oliver	M	0	Production Supervisor - WC00	2000-07-26	1980-02-26	adventure-works\jolynn0	jolynn0@adventure-works.com	903-555-0186	S			J
11	10	10	1890697218	11	Ruth	Elberblock	Ann	0	Production Technician - WC00	2002-02-06	1956-04-06	adventure-works\ruth0	ruth0@adventure-works.com	145-555-0130	M			R
12	11	11	3955156508	11	Gail	Erickson	A	0	Design Engineer	2002-02-06	1946-10-29	adventure-works\gail0	gail0@adventure-works.com	849-555-0139	M			G
13	12	12	189512265825	11	Barry	Johnson	K	0	Production Technician - WC10	2002-02-07	1950-04-27	adventure-works\barry0	barry0@adventure-works.com	206-555-0180	S			B
14	13	13	399820692	11	Josef	Goldsberry	H	0	Design Engineer	2002-02-02	1953-04-11	adventure-works\josef0	josef0@adventure-works.com	122-555-0189	M	GRACE	084-555-0200	J
15	14	14	1125479767	11	Terry	Duffy	Lee	0	Vice President of Engineering	2002-03-04	1965-09-01	adventure-works\terry0	terry0@adventure-works.com	819-555-0175	S			T
16	15	15	1890697218	11	Sidney	Hanson	M	0	Production Supervisor - WC00	2000-07-26	1980-04-26	adventure-works\sidney0	sidney0@adventure-works.com	145-555-0183	M			S
17	16	16	2353009392	11	Taylor	Maxwell	R	0	Production Supervisor - WC00	2000-03-11	1950-05-03	adventure-works\taylor0	taylor0@adventure-works.com	508-555-0185	M	EVIE	578-555-0202	S
18	17	17	1895247483	11	Jeffrey	Ford	L	0	Production Technician - WC10	2002-03-23	1950-08-12	adventure-works\jeffrey0	jeffrey0@adventure-works.com	984-555-0185	S			J
19	18	18	2354466105	11	Jo	Brown	A	0	Production Supervisor - WC00	2002-03-09	1950-11-09	adventure-works\jo0	jo0@adventure-works.com	632-555-0129	S			J
20	19	19	1895009017	11	Don	Hartwig	M	0	Production Technician - WC10	2002-04-11	1950-05-04	adventure-works\don0	don0@adventure-works.com	328-555-0150	M			D
21	20	20	1894170742	11	John	Campbell	T	0	Production Technician - WC00	2002-04-18	1950-09-06	adventure-works\john0	john0@adventure-works.com	435-555-0113	M	MALI	123-555-0207	J
22	21	21	189512265817	11	Douglas	R	M	0	Production Technician - WC10	2002-04-18	1950-09-15	adventure-works\douglas0	douglas0@adventure-works.com	202-555-0120	M			Z
23	22	22	17757737473	11	Steven	Selkoff	T	0	Production Technician - WC10	2003-01-02	1971-04-15	adventure-works\steven0	steven0@adventure-works.com	925-555-0114	M	ISABELLE	054-555-0205	S
24	23	23	2053460180	11	Peter	Krebs	J	0	Production Control Manager	2003-01-02	1976-12-04	adventure-works\peter0	peter0@adventure-works.com	913-555-0196	M	EMILY	888-555-0210	P
25	24	24	2053460180	11	Stuart	Munson	V	0	Production Technician - WC00	2003-01-03	1956-10-14	adventure-works\stuart0	stuart0@adventure-works.com	413-555-0136	S			S
26	25	25	2057685951	11	Greg	Alderson	F	0	Production Technician - WC45	2003-01-03	1964-11-14	adventure-works\greg0	greg0@adventure-works.com	332-555-0150	S			G
27	26	26	18950138869	11	David	Johnson	N	0	Production Technician - WC10	2003-01-03	1973-12-03	adventure-works\david0	david0@adventure-works.com	166-555-0162	S			D
28	27	27	2154466105	11	Zheng	Mu	W	0	Production Technician - WC10	2003-01-03	1973-12-03	adventure-works\zheng0	zheng0@adventure-works.com	135-555-0171	S			Z
29	28	28	11156409218	11	Ivan	Wong	W	0	Production Supervisor - WC00	2003-01-05	1976-02-04	adventure-works\ivan0	ivan0@adventure-works.com	135-555-0179	M	PHOEBE	909-555-0215	S
30	29	29	8918412788	11	Paul	Komisinski	B	0	Production Technician - WC40	2003-01-05	1974-12-15	adventure-works\paul0	paul0@adventure-works.com	147-555-0160	S			P
31	30	30	15494389530	11	Ashvini	Sharma	R	0	Network Administrator	2003-01-05	1971-04-28	adventure-works\ashvini0	ashvini0@adventure-works.com	656-555-0119	S			A
32	31	31	16571658797	11	Kendall	Kell	C	0	Production Administrator - WC10	2003-01-06	1980-06-30	adventure-works\kendall0	kendall0@adventure-works.com	138-555-0128	M	ISABELLE	765-555-0218	K
33	32	32	1493514551	11	Paula	Barretto	I	0	Human Resources Manager	2003-01-07	1970-03-14	adventure-works\paula0	paula0@adventure-works.com	523-555-0175	M			P
34	33	33	21456197960	11	Alejandro	McGee	E	0	Production Technician - WC40	2003-01-07	1983-01-06	adventure-works\alejandro0	alejandro0@adventure-works.com	668-555-0130	S			A
35	34	34	18950138869	11	Garrett	Reinke	R	0	Production Technician - WC10	2003-01-07	1983-01-06	adventure-works\garrett0	garrett0@adventure-works.com	222-555-0156	S			G
36	35	35	1386709325	11	Jian	Shuo	Wang	0	Production Technician - WC00	2003-01-08	1977-08-27	adventure-works\jianshuo0	jianshuo0@adventure-works.com	952-555-0178	S			J
37	36	36	87586486572	11	Susan	Eaton	W	0	Stockier	2003-01-08	1972-03-20	adventure-works\susan0	susan0@adventure-works.com	943-555-0196	S			S
38	37	37	87537752649	11	Vamsi	Kuppa	N	0	Shipping and Receiving Clerk	2003-01-08	1971-04-19	adventure-works\vamsi0	vamsi0@adventure-works.com	937-555-0137	M	MLA	367-555-0224	V
39	38	38	401369504	11	Alice	Ciccu	O	0	Production Technician - WC10	2003-01-08	1972-02-27	adventure-works\alice0	alice0@adventure-works.com	333-555-0173	S			A
40	39	39	16571658797	11	Simon	Rapier	P	0	Production Technician - WC10	2003-01-09	1971-04-28	adventure-works\simon0	simon0@adventure-works.com	963-555-0134	S			S
41	40	40	2573019410	11	Jay	Wong	K	0	Production Supervisor - WC00	2003-01-09	1973-03-09	adventure-works\jay0	jay0@adventure-works.com	705-555-0140	S			J
42	41	41	18654337468	11	Michael	Hines	T	0	Production Technician - WC20	2003-01-10	1978-12-19	adventure-works\michael0	michael0@adventure-works.com	218-555-0126	S			M
43	42	42	16571630343	11	Yvonne	McKay	S	0	Production Technician - WC45	2003-01-10	1983-05-17	adventure-works\yvonne0	yvonne0@adventure-works.com	286-555-0189	M			Y
44	43	43	20458505826	11	Peng	Wu	J	0	Quality Assurance Supervisor	2003-01-10	1970-04-19	adventure-works\peng0	peng0@adventure-works.com	164-555-0164	M	SEREN	556-555-0230	P
45	44	44	1125479767	11	Jean	Trenary	E	0	Information Services Manager	2003-01-12	1970-01-13	adventure-works\jean0	jean0@adventure-works.com	685-555-0120	S			J

N	O	P	Q	R	S	T	U	V	W	X	Y	AA	AB	AC	AD	AE	AF	AG	AH	AI	
1	Phone	MaritalStatus	wifeName	EmergencyContacPerson	EmergencyPhone	BirthDate	SalariedFl	Gender	VacationDays	SickLeaveHours	DepartmentName	EndDate	Status	Chronic疾症	Chronic疾病	Pay request	BaseRate	CurrentAvgSales	PersonAvgSales	city	
2	320-555-0195	M	OLIVIA	654-555-0188	Guy Gilbert	1970-07-31	0	M	21	30	Production	Current	Yes	Obesity		1	12.45	-1	0	new york	
3	150-555-0189	S		Kevin Brown	1950-05-18	12000	0	M	42	41	Marketing	Current	Yes	Asthma		2	13.46	-1	0	new york	
4	212-555-0187	M	ISLA	343-555-0190	Roberto Tamburello	2000-02-26	1981-06-03	F	2	21	Engineering	Current	Yes	Diabetes		2	43.27	-1	0	new york	
5	612-555-0187	S		Rob Winters	1970-07-26	1950-01-01	M	48	47	Product Design	2004-06-30	Yes	Heart diseases		2	29.85	-1	0	new york		
6	165-555-0180	S		Rob Winters	1970-07-26	1950-01-01	M	48	48	Tool Design	Current	No			2	25.00	-1	0	new york		
7	168-555-0183	M	LILY	876-555-0193	Thierry Olyers	1968-05-18	12000	0	M	9	24	Tool Design	Current	No		2	37.50	-1	0	new york	
8	819-555-0175	S		David Bradley	1913-05-17	12000	-1	M	40	40	Marketing	2003-08-15	No			2	37.50	-1	0	new york	
9	913-555-0172	S		David Bradley	1913-05-17	12000	-1	M	40	40	Marketing	Current	No			2	25.00	-1	0	new york	
10	903-555-0145	S		Jolynn Dolney	1903-05-14	12000	0	F	83	82	61 Production	Current	Yes	Hypertension		2	25.00	-1	0	new york	
11	146-555-0130	M		Ruth Hartwig	1945-05-13	12000	0	F	83	81	61 Production	Current	No			1	13.45	-1	0	new york	
12	165-555-0139	M		Gail Erickson	1950-05-09	12000	0	F	86	86	63 Production	Current	No			1	13.45	-1	0	new york	
13	206-555-0180	S		Betsy Johnson	1950-05-08	12000	0	M	88	84	64 Production	Current	No			1	13.45	-1	0	new york	
14	122-555-0189	M	GRACE	084-555-0200	Josef Goldberg	1922-05-18	12000	-1	M	6	23	Engineering	Current	No			2	32.69	-1	0	new york
15</td																					

## Data Identification and Description

Currently, the data set we are working on is stored as an Excel worksheet containing all crucial data about DIM employees and their employment information. With such information, it is important to understand what is presented and ask questions to further analyze the information as much as possible.

1. Data Type in each column(attributes)
2. Are the data able to support decisions to be made?
3. are there attributes with relationships between them?
4. Are there any null values presented in the table?
5. If so, does its existence negatively affect the rest of the data?

## **Further Inspection of our columns and the attributes**

In addition to the previous screenshot of the data set, we must clarify mentioned columns in the dataset sheet and the type of data available within. There are 31 columns available for every employee to fill out. One might think that is a lot to ask from someone.

But on the contrary, the more information you have your employee fill out about themselves the better understanding you have of our resources(employees). Therefore, asking these questions is a must for the business to support urgent decisions such as Insurance.

## **Executive summary**

### **PROJECT BACKGROUND:**

In this report, we'll mention the number of (employees, department names, chronic diseases, etc...).

- Find solutions for the company with employees that need insurance and direct them to Bupa company.
- To be efficient with the data provided and solve the maximum number of problems and opportunities presented.

### **COMPANY BACKGROUND:**

The owner of the company DIM has noticed an increase in sick leave hours and requests from employees for medical insurance.

When skimming through the chosen dataset (from DIM company) we noticed required action need to be made to the data because some of the data were incomplete and duplicated.

### **PROJECT ROLES:**

A data analyst collects, cleans, and interprets datasets to answer a question or solve a problem.

project manager plans, coordinates, oversees and controls projects while ensuring that they are completed within the specified time range.

Project members ensure that the project achieves its objectives and goals.

### **OBJECTIVES AND SCOPE:**

The main goal of our project is to analyze and understand the dataset and provide solutions and information that will benefit both companies (Bupa and DIM).

## **Opportunity presented:**

Exploring our data set of choice (Data Set: DIM Employees) revealed to us numerous general entities that every employee is asked to fill out when applying for work at their employers, no matter the size and nature of the company.

Among these entities, we have procured an opportunity for specific *Sick Days (Hours)*. This specific entity gave us the marvelous idea to use this data set for medical insurance.

Employees (all 290 of them) need medical attention. Their different positions, departments, different pay rates, and marital status among them all provide a wide range for the said insurance companies to be able to provide different packages depending on such factors.

## **Opportunities:**

- 1- One of the first things we noticed with our dataset was the number of sick leave hours, each employee (from every department) has used, this made us believe that the employees need medical insurance to organize them in the company.
- 2- The importance of geolocation to consumers Locating consumers is an opportunity for the insurance company to locate a larger number of centers and hospitals near them to be a competitive advantage for the company.
- 3- Different departments must have different insurance, for example, the engineering department needs stronger insurance than the human resources department due to the different nature of work and the different degrees of risk, which provides an opportunity for the insurance company to highlight their ability to diversify the degree of insurance for the company
- 4- Salaries information's important, by knowing the salary we know what level of insurance we should provide.

## **Problems:**

1. Chronic diseases of employees were not identified in the database, which will cause a problem because Insurance companies need full information about the chronic diseases of the employees.

## **Solution:**

We revised with the employees concerning their medical conditions (including chronic diseases) and recorded them.

2. The emergency numbers of employees are the same as their numbers, which makes the dataset unorganized and more complicated.

## **Solution:**

To make our data set accurate and simple we rechecked every employee their contact information to make sure there was no repetition.

3. several duplicated columns within the dataset can confuse readers, for example, the hire date and start date.

## **Solution:**

We decided to eliminate the duplicated columns (start date).

4. When analyzing our dataset, we found that many of the employees that are married don't have the spouse's information, it must be added.

## **Solution:**

We asked the married employees to fill out a form about their spouses' names and phone numbers.

## Story

David is an employee of company A. He just started his job. He was happy and excited. The job is great and has many features such as health care insurance. The insurance was a VIP, so your family is included.

But on another side, there is another job offer with a higher salary and no insurance. David was confused. "Should I continue with my current job or go to another one?" Ahmad said. David decided to stay at his job.

After two weeks. He decided to go with his family to the Zoo.

His daughter Lana loves monkeys.

when she played with a monkey, she throws juice at the monkey's head. the monkey felt insulted and angry 😠.

The monkey decided to return it by throwing a rock at her.

Lana is bleeding. All family was scared. The father Holds his daughter and runs to the hospital. Because he has good insurance, He can go to any hospital he wants. The doctor stitched up the wound very expertly.

The daughter now is healthy and her family happy.

After a week, the father decided to visit a zoo again to make a peace between his daughter and the monkey.

Lana: I am sorry my monkey, I will never do it again.

Monkey: ....

The father: he is just a little shame of what he did.

Lana: it's ok

Now all family happy and feel credited to the insurance company.



below the story, we attached a picture of Lana and the monkey.

## *Hypothetical Client*

Bupa Arabia Insurance will be able to help all these women and men in need of medical attention.

1. What is the division of your employees in terms of marital status?

In terms of marital status, we have 146 employees with the marital status of M(married) and the rest of the 144 have a marital status of S(single)

2. What are the employees you want to be insured for medical needs?

We would like to ensure all 290 working employees.

3. Currently, what is the ratio of females to males?

71% (in a total of 206) of our employees are male and 29% (in total 84) are females.

4. What is the average of Sick Days (in hours) your employee takes?

Among the employees, it ranges from 20 hours to a maximum of 69 hours

5. What is the age range among females? Males?

Within Females, the age ranges from 37 to 85 years old.

While among Males, their age ranges from 37 to 88 years old.

6. In terms of categorizing your employees' medical insurance, would you base it on years of work or department divisions and salaries?

Salaries information's important, by knowing the salary we know what level of insurance we should provide.

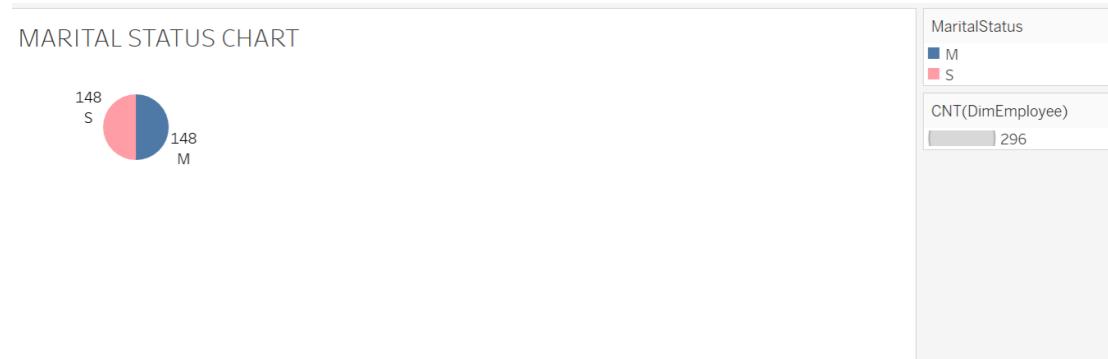
## **Data visualization (using tableau software)**

### **What is Tableau?**

**Tableau is a powerful and fastest-growing data visualization tool used in the business intelligence industry. It allows you to simplify raw data into a very easily understandable format.**

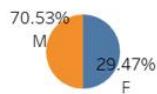
**Here are important features of Tableau:**

- No need for technical knowledge**
- Real-time analysis**
- Toggle view and drag-and-drop**
- List of native data connectors**
- Highlight and filter data**
- Share dashboards with users**
- Tableau reader for data viewing**
- Translate queries to visualizations**
- Import all ranges and sizes of data**



- The graph shows the number of employees that are married and single.
- As analysts, we needed a graph to represent the marital status of the company's employees. As shown above, the optimal graph to use in this situation is the Pie Chart, because of its ability to represent 2 elements and show an overall part-to-whole relationship. It is crucial to identify our employee's marital status (married or single) to further understand the insurance company's opportunity to decide on whether the insurance provided would need to be covered for only employees or include their spouses.

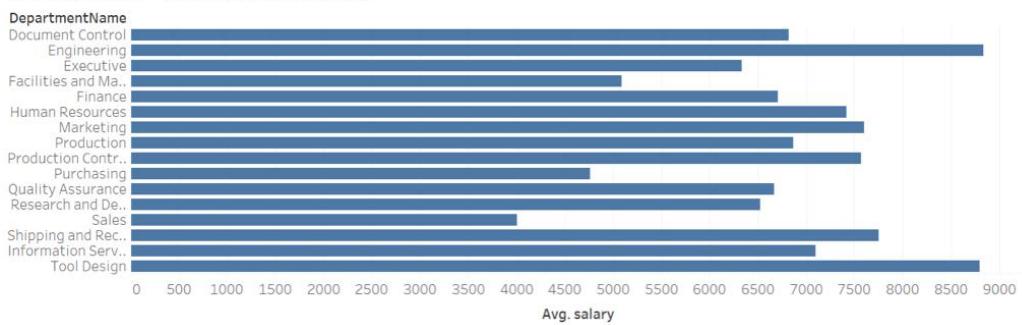
## GENDER AND SICK LEAVE HOURS



Gender  
F  
M

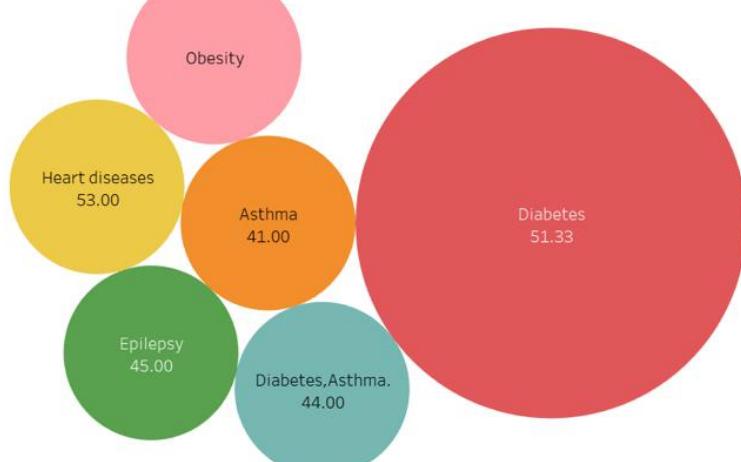
As we mentioned, we used the pie chart graph to represent an opportunity, due to the number of sick leave hours for each gender, we used it to show a percentage of a whole, so the pie chart is a suitable graph for the part-to-whole relationship.

## DEPARTMENT NAME AND SALARY



A horizontal bar chart is a great option for long category names (Department names). Horizontal bar charts are a good option because there are a lot of bars to plot, or the labels on them require additional space to be legible. The opportunity presented here for us is to further understand and analyze how much each department's employees make as an average salary. Such information is crucial to correctly evaluate the price of insurance packages provided, especially to understand for us (the insurance company) to correctly calculate what would the costs and benefits be equal to.

## CHRONIC DISEASES



Chronic diseases

- Asthma
- Diabetes
- Diabetes, Asthma.
- Epilepsy
- Heart diseases
- Obesity

- A bubble chart is a multivariate chart that is a variant of a scatter plot. Except for the values of the variables represented by the X and Y axes, the area of each bubble represents the third value. We should note that the size of the bubble is limited, and too many bubbles will make the chart difficult to read.
- In this scenario, A bubble chart is perfect to represent the prominent diseases that all employees have or get throughout the year. This data represented allows us to understand the opportunity of documenting what kind of diseases should the insurance packages instead of wasting resources in covering diseases not needed(or mentioned)

baserate with departmentname and city

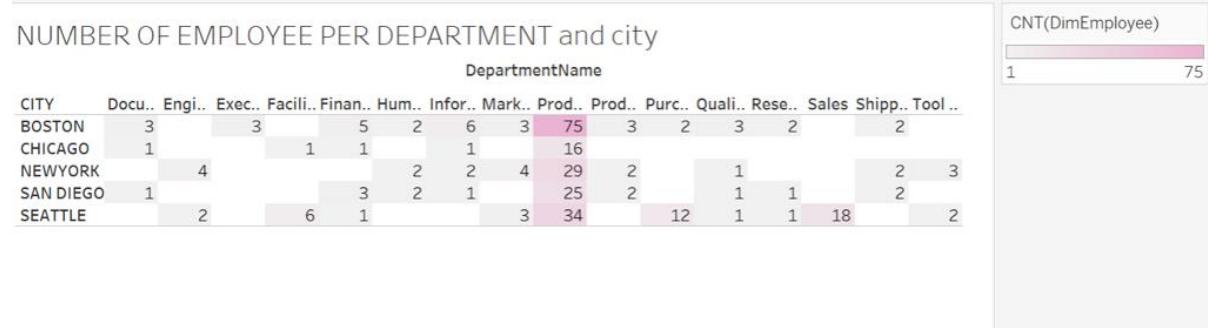
	CITY	BOST..	CHIC..	NEW..	SAN ..	SEAT..
Document Control		12.44	16.83		17.79	
Engineering			43.03			34.38
Executive		81.90				
Facilities and Ma..			20.43			11.80
Finance		23.64	19.00		25.24	26.44
Human Resources		13.94		22.70	17.43	
Information Ser..		33.97	27.40	41.47	27.40	
Marketing		14.42		25.72		13.78
Production		14.56	13.46	14.81	13.21	13.69
Production Cont..		16.00		24.04	16.00	
Purchasing		18.27				20.28
Quality Assurance		16.67		21.63	10.58	10.58
Research and De..		45.67			40.87	42.48
Sales					29.97	
Shipping and Re..		9.25		9.25	14.12	
Tool Design			28.23			26.92

AVG(BaseRate)

9.25	81.90
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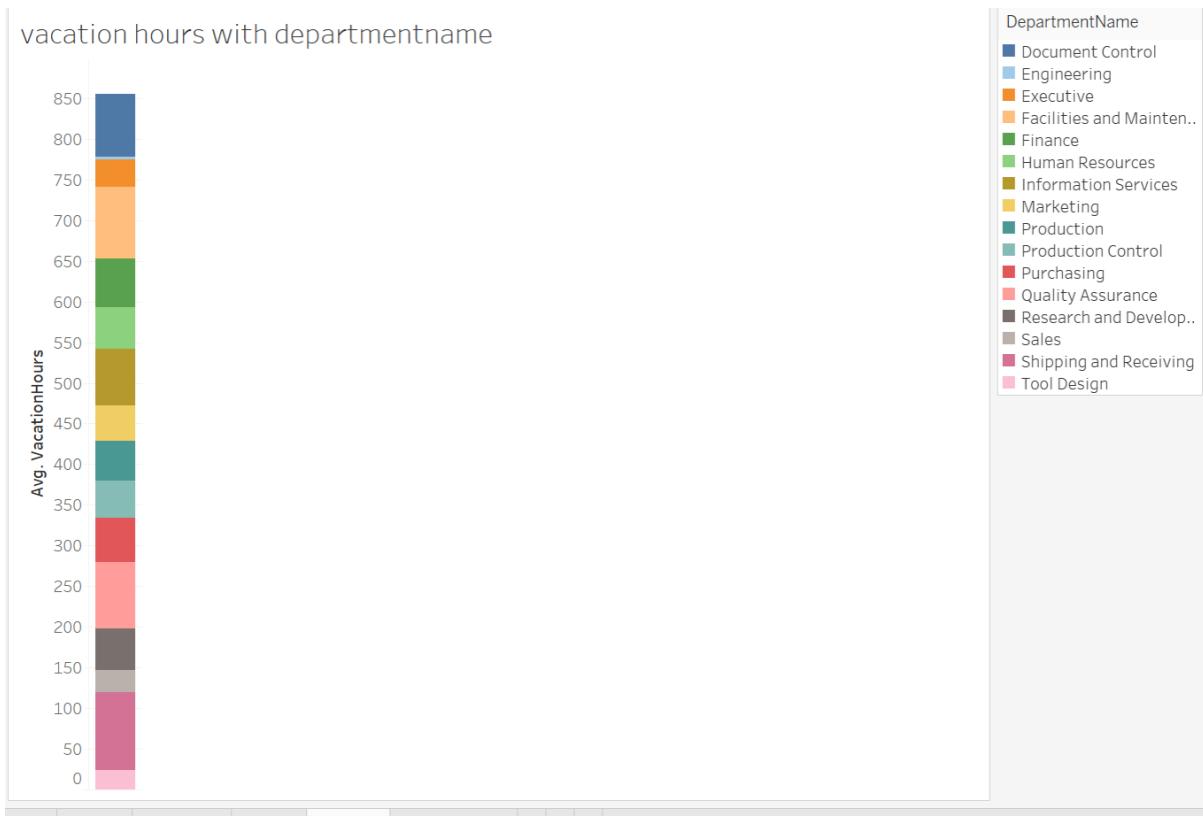
The highlight table comes into help when we want to apply conditional formatting to our view. Highlight tables are used to compare categorical data using color. Just as the name suggests, highlighted tables add colors, allowing users to read the table more intuitively and effectively.

In this case, our categorical data is (Department names, and cities). Within each department in every city, there is a base rate with salaries that must be to be covered(average)(Numerical) with each employee. This kind of data can support on what prices to offer our clients (the company) and further what they can and cannot afford.



As previously mentioned, Highlight tables are used to compare categorical data (in this given opportunity; we are comparing Cities and Department Names). We wanted to further inspect what departments existed where geographically between cities (Boston, Chicago, New York, San Diego, and Seattle).

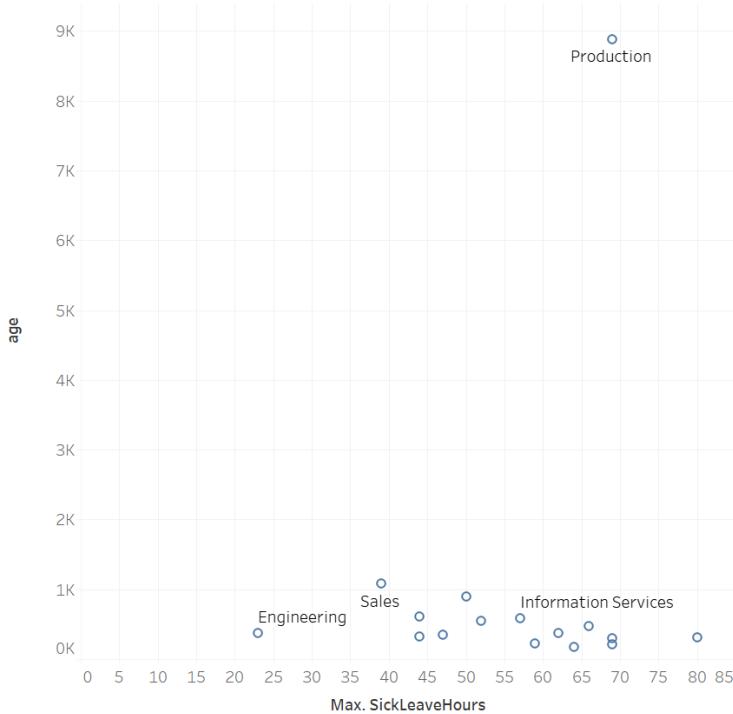
This investigation and analysis allow us to connect the medical centers that use our insurance, to be able within reach of employees from specific departments. This opportunity allows it to run the insurance process to run smoothly.



The stacked bar chart is a popular visual aid used for categorizing and comparing the parts of a whole. Each bar in the chart represents a whole, and the segments represent parts of that whole. Different colors used for the segments distinguish the categories.

The given opportunity here is to further evaluate how many hours each department takes with vacation hours. These numbers can infer how much these employees value their time off. Do they take many hours for a vacation to enjoy and value these hours to take many of them or are these employees don't use these at all and would rather have sick hours (get sicker than a vacation?)

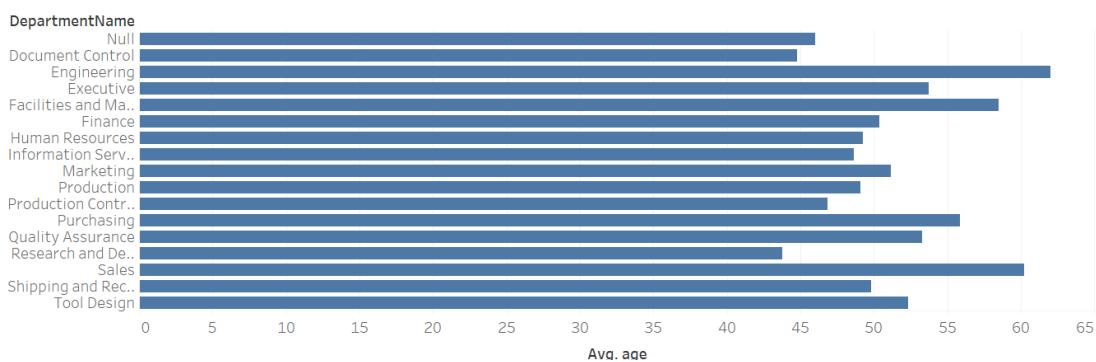
## SICK LEAVE HOURS



A scatter plot displays values on two numeric variables using points positioned on two axes: one for each variable. Scatter plots are a versatile demonstration of the relationship between the plotted variables—whether that correlation is strong or weak, positive or negative, linear, or non-linear.

Making a scatter plot requires a lot of data, otherwise, the correlation is not obvious. Dissecting the data above from the given graph, we are correlating 3 criteria (age of the employee, department names, and maximum sick hours taken by employees from each department.) To answer the question of why collect such data and relate them to each other, we can confidently say it is to determine how many sick hours (maximum number) each department takes concerning their ages. This opportunity allows us to make a variety of provided insurance packages. Understand which department needs a concentrated plan, due to the hours they have taken to rest for being sick.

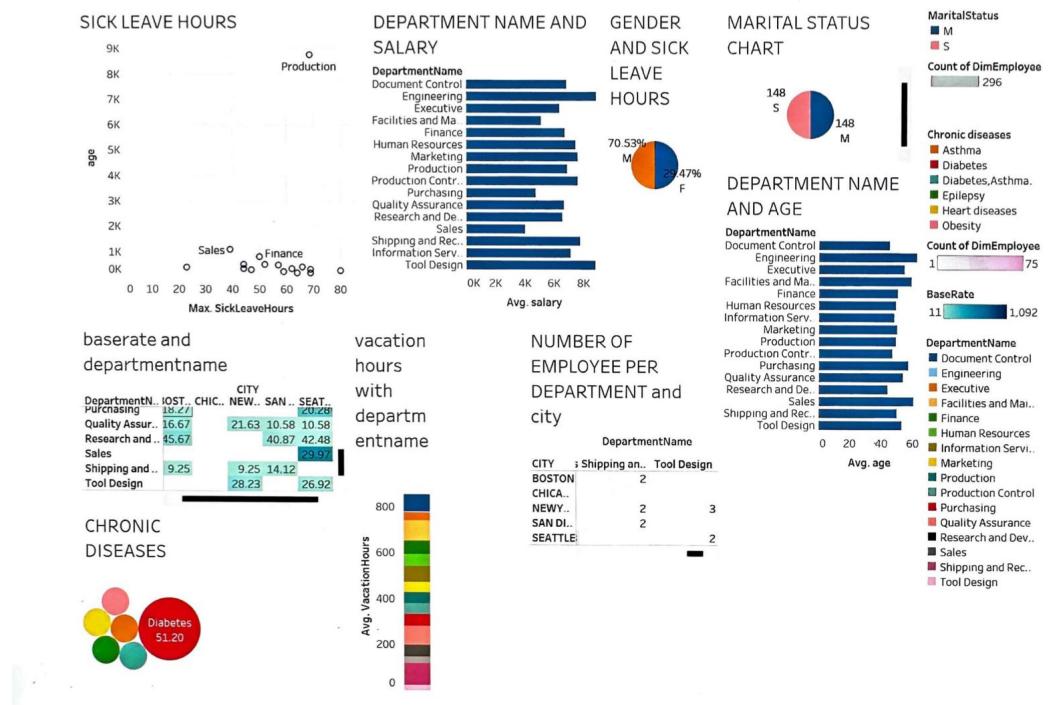
## DEPARTMENT NAME AND AGE



A horizontal bar chart is a great option for long category names (Department names). Horizontal bar charts are a good option because there are a lot of bars to plot, or the labels on them require additional space to be legible. Each department in the company had a wide range of ages, and they all need to ensure medical, this created a problem that we need to clarify and fix to figure out the age groups that we need to handle and take care of.

This is how we came up with the concept of connecting the Department Names present (categorical data) and Employee's ages (Numerical Data that have been calculated from given birth dates)

## **Dashboard (Using Tableau Dashboard to Determine and Understand Medical Insurance(from Bupa company) for DIM employees**



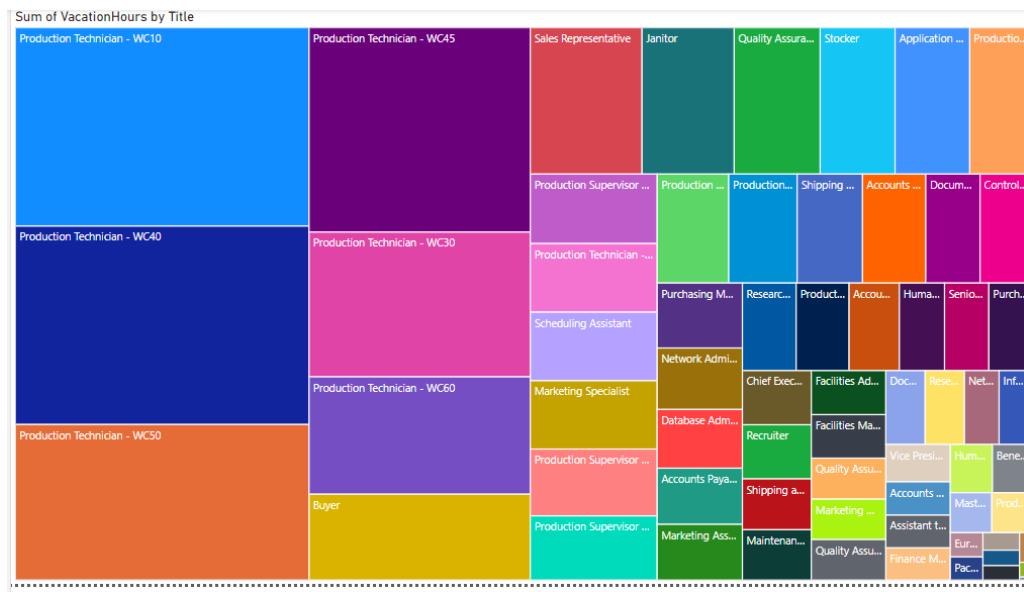
## Data visualization (using Power BI software)

### What is Power BI?

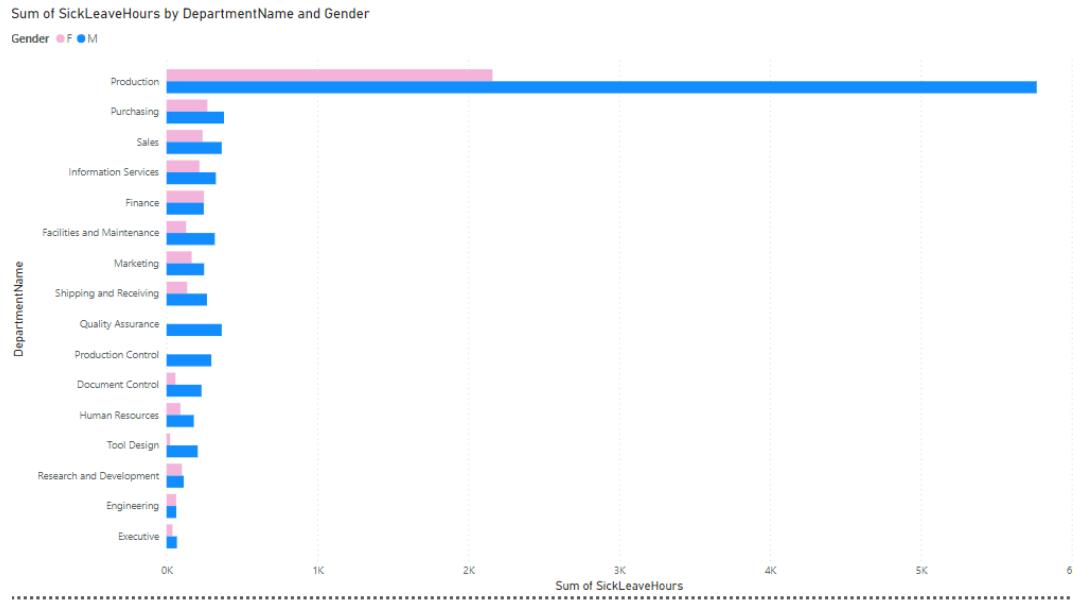
Power BI is a Business Intelligence and Data Visualization tool that helps you to convert data from various data sources into interactive dashboards and BI reports. It also provides multiple software connectors and services.

### Here, are the essential features of Power BI:

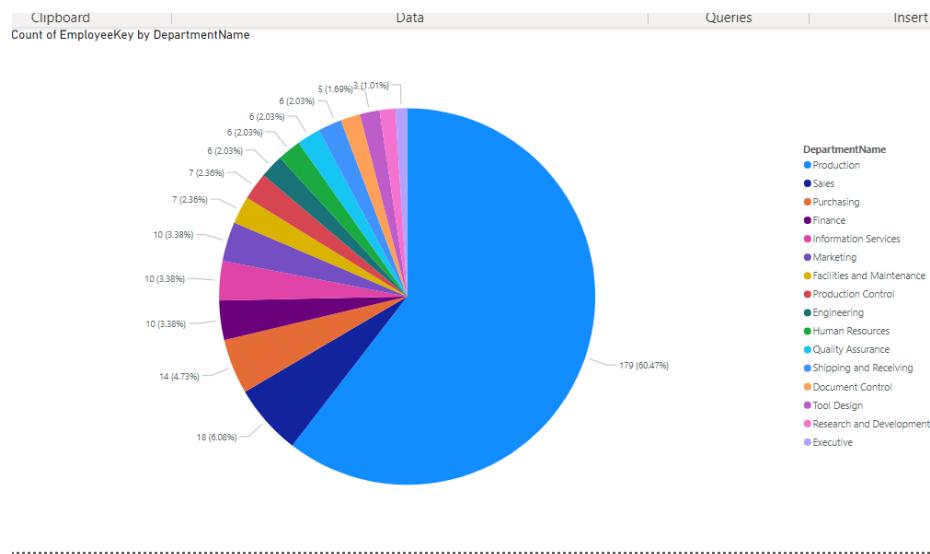
- Customizable dashboards
- Online Analytical Processing (OLAP)
- Trend indicators
- Complete reporting & data -visualization tools
- Real-time dashboards that help business owners solve problems as they occur
- Offers Power BI embedded, azure service that allows applications to interact with Power BI
- Content Packs for sharing dashboards with the team



The graph shows the title and the number of vacation hours. Treemaps can work well if your data falls into this scenario: you want to visualize a part-to-whole relationship amongst many categories (job titles and vacation hours), making this chart the most useful in this scenario with the given data.

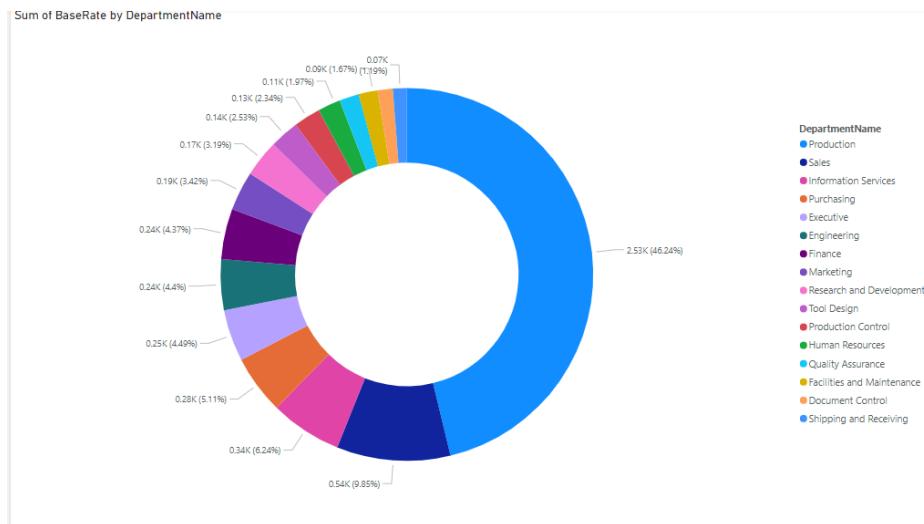


The graph shows the number of sick leave hours for each department and gender. A horizontal bar chart is a great option for long category names (Department names) because there are a lot of bars to plot, or the labels on them require additional space to be legible.



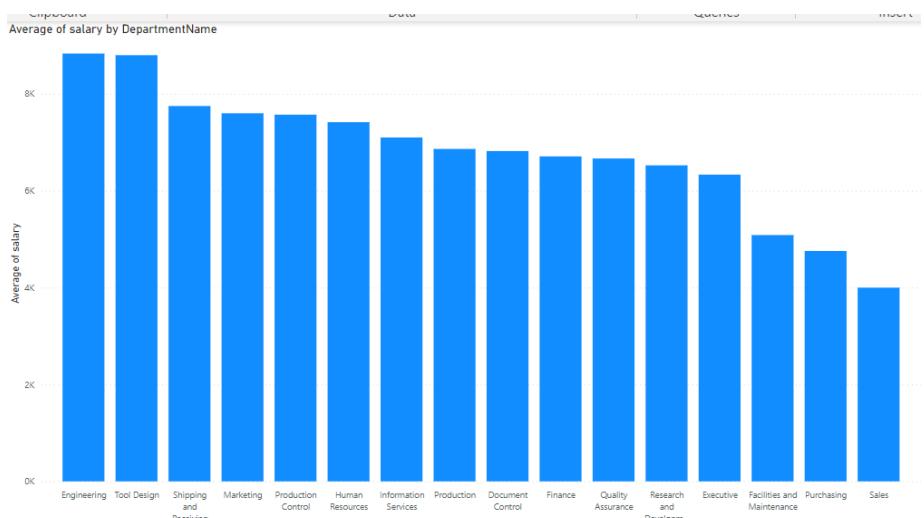
The graph shows the employee key and departments in which they work, it is clear that the employees of the production department are more numerous compared to the employees in other departments.

We used a pie chart, which shows the whole data and significant parts of it, and they represent it. The whole data can be divided into slices to show the numerical propositions of each part of the data. Pie charts are mostly used to represent the same category of data (in this case the Employee's key and Departments)



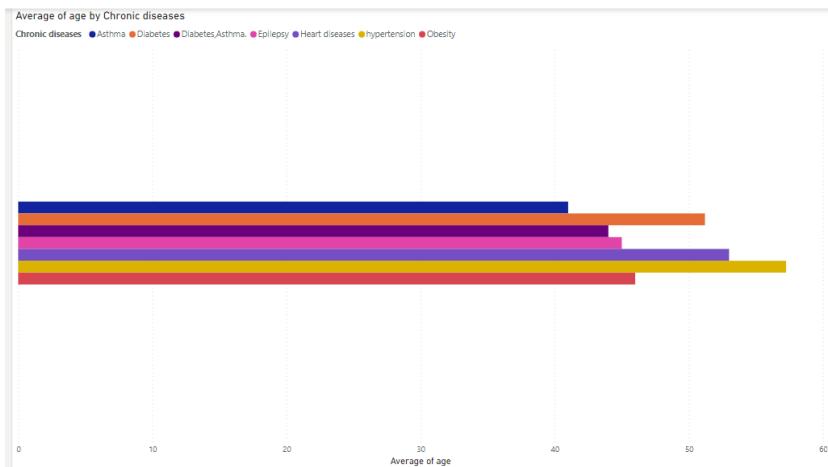
The graph shows departments and the base rate for all departments, and it is obvious that production employees have the highest rate among departments in the company.

Again, we have used a Doughnut Chart that displays the relationship between the 2 criteria (Base Rate & Department Name) and compares a particular section to the whole.



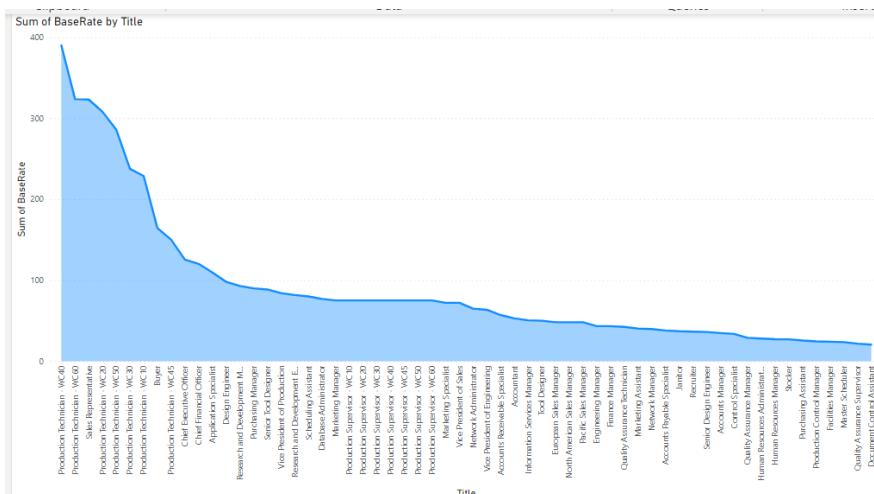
The graph shows departments and the average salary for all departments, and it is obvious that engineering is the highest among departments.

Using a vertical bar chart here is useful to compare the values of data that has a large number of categories, and each one has a single value for each category, therefore making the data easier to understand and read.



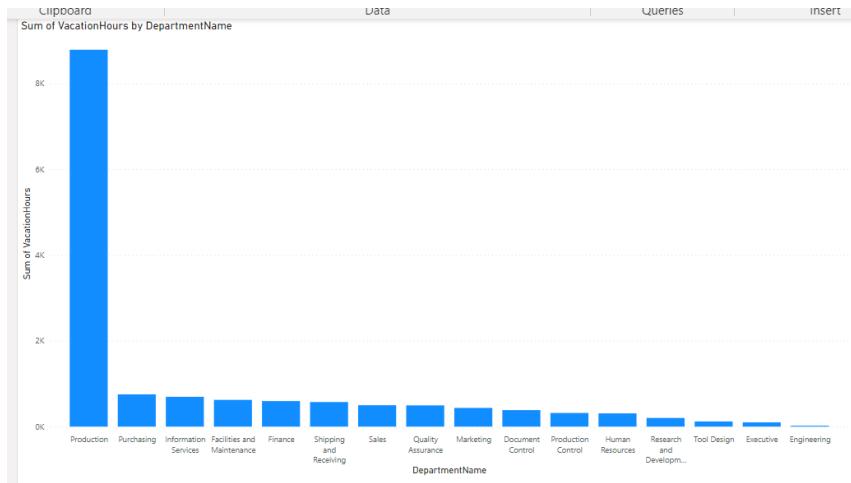
The graph shows the average age of chronic diseases, and as we see above 55 ages most employees have hypertension.

We used a horizontal chart which is an easy way to display data using several bars, each representing a particular category. we used a different color to enable us to see different categories of each bar in the bar chart.



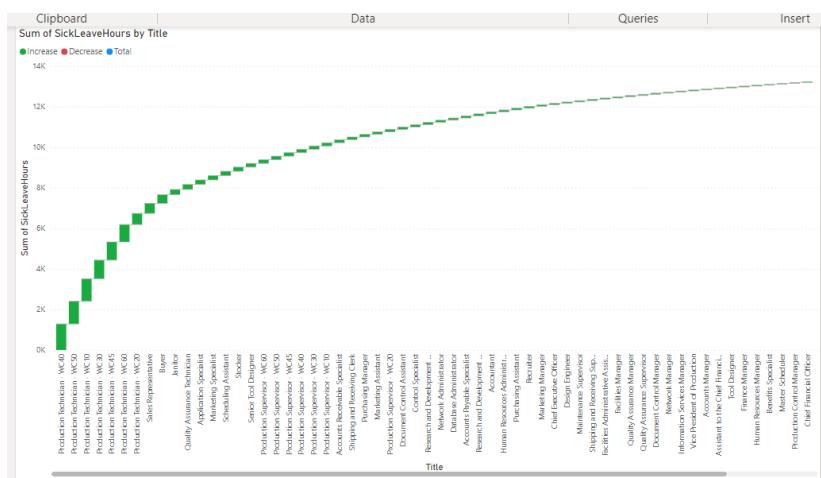
The graph shows the relationship between the base rate and title, which turns out to be different from each other

We used an area chart which is a graph that shows changes in quantities over time.



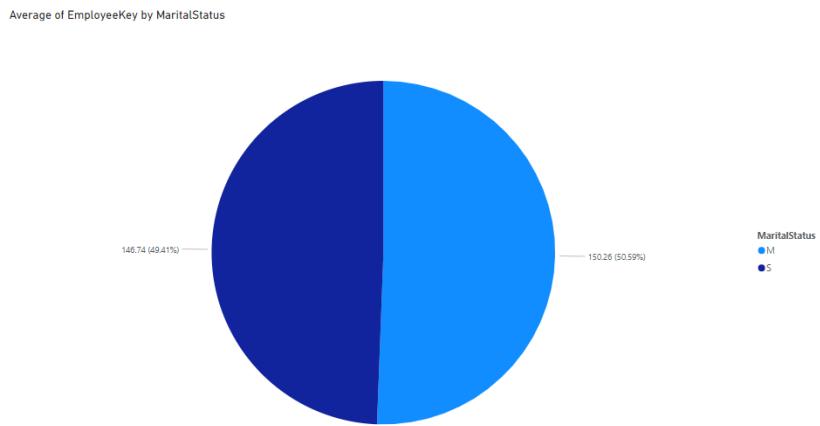
The graph shows departments and the number of vacation hours for each department separately, it becomes clear that the employees of the production department have the most vacation hours compared to others.

We used Bar charts because they are simple and easy to understand, use bars that extend to different heights to depict value, and represent the absolute data.



The graph shows the sum of title and sick leave hours.

A waterfall chart is the best option to represent how initial values are increasing (sick leave hours)

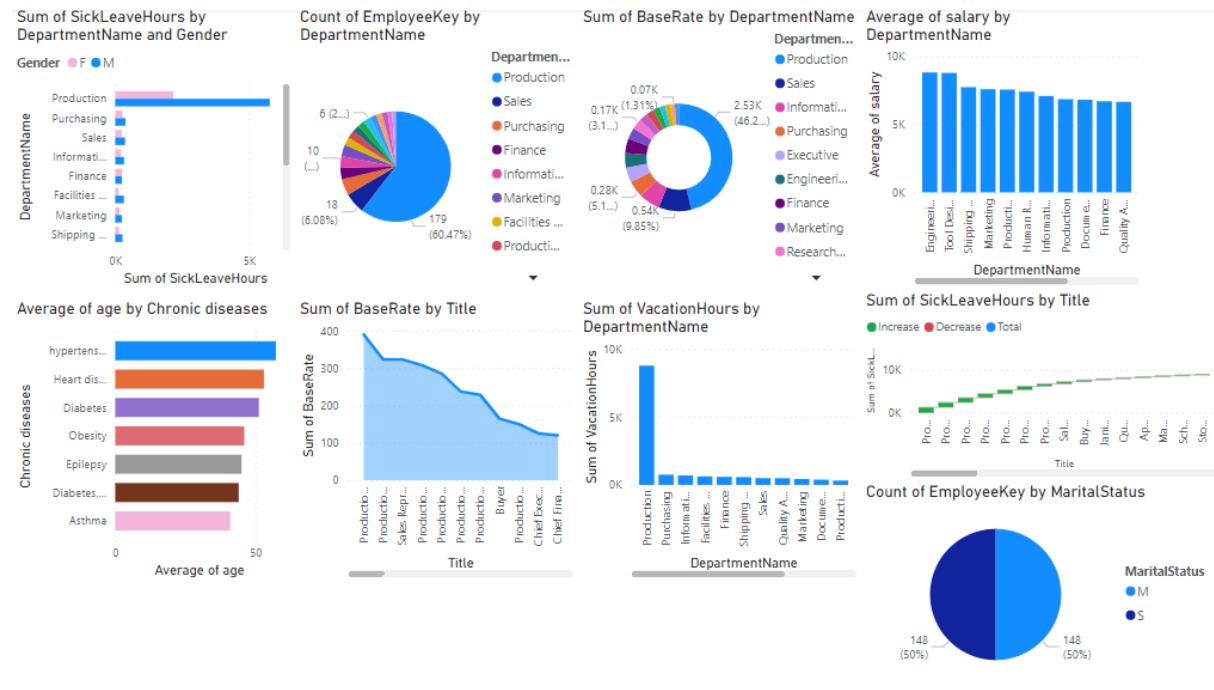


The graph shows an average of employees' keys by marital status.

We used Pie Chart that represents the whole chart (The company's employees) divided into 2 sectors (based on marital status), which are single and married. It is important to state that in this graph, each sector represents a class of data.

## Dashboard (POWER BI):

### Using POWER BI Dashboard to Determine and Understand Medical Insurance (provided By Bupa company) for DIM employees



## Conclusion

With our project, we were able to complete missing data and solve the problems that weaken the present data set from being able to provide complete and efficient data that was able to allow other companies (such as Bupa Insurance Company) to provide their services to benefit DIM employees and company.

Because of missing data in the dataset, we cannot determine how urgently the employees need their chronic diseases to be covered through medical insurance and whether the insurance should cover only the current employees or include in the medical plan their spouses.

By completing and analyzing the new and improved dataset, we were able to find opportunities for the company itself to enhance in certain areas and further understand the current state of the company and its employees. For example, when we calculated the sick leave and vacation hours, which helped with understanding how productive and efficient the company currently is.

## **Recommendations**

The impact of technology is growing every day in a variety of fields, including data mining, organization, and data visualization, making it possible to gather data that supports crucial decisions easily. The participants in the group must anticipate and realize that using contemporary techniques for data visualization will enhance the overall decision-making process.

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*Power BI Sign In,*

<https://app.powerbi.com/singleSignOn?ru=https%3A%2F%2Fapp.powerbi.com%2F%3FnoSignUpCheck%3D1>.

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