

# Project A

## HR Performance Reporting

Matthew Paver - Projecting Success



# CONTENTS

- 01** Planning & Structure (pg 3)
- 02** Data Gathering & Analysis (pg 8)
- 03** Insight & Recommendations (pg 17)

# PLANNING & STRUCTURE

# Breakdown

## Situation:

- A global utility products company has a senior management team concerned about low performance
- This low performance is suggested to be about the high volume in absences and poor service delivery
- This has resulted in an increase in customer complaints

## Task:

To produce a HR performance report that:

- Includes a table of all current employees
- Includes a table with employees with sick leave greater than 37.5 hours in the year
- Includes a table showing employees with sick leave less than 15 hours of sick leave in the year

## Action:

- Determine current relationships in the database
- Create an employee table with the following relationships: business entityID, job title, department, age, gender, and number of years in the organisation
- Determine whether sales representatives are on track to improve last years sales

## Result:

- Create insights from the graphs & tables to understand what the data is actually saying
- Provide recommendations from the data to be made to the senior executives

PHASE  
1

OVERVIEW

# THE PROJECT PLAN

This Project split into 3 sections

## Section 1 - Data Gathering (4 hours)

- Understanding the data and scoping out the relationships for current employees (1 hour)
- To create a table of all current employees with the suggested entities (1 hour)
- To create a table with employees with sick leave greater than 37.5 hours in the year (2 hours)
- To create a table showing employees with sick leave less than 15 hours of sick leave in the year (2 hours)

## Section 2 - Analysis (3 hours)

- A graphical representation of 'Sales Year To Date' against 'Sales Last Year' (2 hours)
- A graphical representation of the top 5 performers, including territory & country (1 hour)

## Section 3 - Insights & recommendations (2 hours)

- Gathering insights from the graphs (1 hour)
- Written recommendations to the senior executive (1 hour)

Total time = 9 hours

# SECTION 1

## Relationships between tables

1. A table comprising of all your current employees, showing business entityID, job title, department, age, gender, and number of years in the organisation.

- BusinessEntityID - Stored in HumanResources.Employee & HumanResources.vEmployeeDepartment table
- First & Last Name - HumanResources.vEmployeeDepartment (Primary key of BusinessEntityID)
- Job Title - HumanResources.vEmployeeDepartment (Can join with Person table through BusinessEntityID)
- Department - HumanResources.vEmployeeDepartment
- Number of years in the organisation - HumanResources.vEmployeeDepartment (This can be calculated from the number of years between the hire date and modified date)
- Gender - HumanResources.Employee
- Age - HumanResources.Employee (This can be calculated from the BirthDate column and modified date.)

Number of tables required = 2

## SECTION 2

# SalesYTD vs SalesLastYear

*1. A graphical representation of 'SalesYTD' vs 'SalesLastYear' for each sales representative.*

- Sales.SalesPerson - Contains SalesYTD and SalesLastYear columns for each sales representative

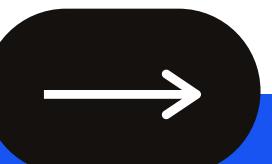
*2. Identity of the top 5 performers, including their territory and country.*

- Sales.SalesPerson & Sales.SalesTerritory - SalesPerson contains information about the performer with a foreign key of TerritoryID joining with SalesTerritory table. To find out the performer, the SalesPerson table can be linked with Person.Person table using the BusinessEntityID

*3. A written recommendation on which of the sales representatives are on track to improve on their last years' sales figures based on their YTD performance.*

- Work out how much SalesYTD is each month and then extrapolate that to the full financial year to compare against SalesLastYear.

# DATA GATHERING & Analysis



# SECTION 1

## Associating Relationships

```
select
HumanResources.vEmployeeDepartment.BusinessEntityID,
HumanResources.vEmployeeDepartment.Title,
HumanResources.vEmployeeDepartment.FirstName,
HumanResources.vEmployeeDepartment.MiddleName,
HumanResources.vEmployeeDepartment.LastName,
HumanResources.vEmployeeDepartment.JobTitle,
HumanResources.vEmployeeDepartment.Department,
HumanResources.vEmployeeDepartment.StartDate,
HumanResources.Employee.Gender,
HumanResources.Employee.BirthDate
FROM HumanResources.Employee FULL OUTER JOIN HumanResources.vEmployeeDepartment
ON HumanResources.Employee.BusinessEntityID = HumanResources.vEmployeeDepartment.BusinessEntityID
```

100 %

Results Messages

BusinessEntityID	Title	FirstName	MiddleName	LastName	JobTitle	Department	StartDate	Gender	BirthDate
1	NULL	Ken	J	Sánchez	Chief Executive Officer	Executive	2009-01-14	M	1969-01-29
2	NULL	Teri	Lee	Duffy	Vice President of Engineering	Engineering	2008-01-31	F	1971-08-01
3	NULL	Roberto	NULL	Tamburello	Engineering Manager	Engineering	2007-11-11	M	1974-11-12
4	NULL	Rob	NULL	Walters	Senior Tool Designer	Tool Design	2010-05-31	M	1974-12-23
5	Ms.	Gail	A	Erickson	Design Engineer	Engineering	2008-01-06	F	1952-09-27
6	Mr.	Jossef	H	Goldberg	Design Engineer	Engineering	2008-01-24	M	1959-03-11
7	NULL	Dylan	A	Miller	Research and Development Manager	Research and Development	2009-02-08	M	1987-02-24
8	NULL	Diane	L	Margheim	Research and Development Engineer	Research and Development	2008-12-29	F	1986-06-05
9	NULL	Gigi	N	Matthew	Research and Development Engineer	Research and Development	2009-01-16	F	1979-01-21
10	NULL	Michael	NULL	Raheem	Research and Development Manager	Research and Development	2009-05-03	M	1984-11-30
11	NULL	Ovidiu	V	Craciun	Senior Tool Designer	Tool Design	2010-12-05	M	1978-01-17
12	NULL	Thierry	B	D'Hers	Tool Designer	Tool Design	2007-12-11	M	1959-07-29
13	Ms.	Janice	M	Galvin	Tool Designer	Tool Design	2010-12-23	F	1989-05-28
14	NULL	Michael	I	Sullivan	Senior Design Engineer	Engineering	2010-12-30	M	1979-06-16
15	NULL	Sharon	B	Salavarria	Design Engineer	Engineering	2011-01-18	F	1961-05-02
16	NULL	David	M	Bradley	Marketing Manager	Marketing	2009-07-15	M	1975-03-19
17	NULL	Kevin	F	Brown	Marketing Assistant	Marketing	2007-01-26	M	1987-05-03
18	NULL	John	L	Wood	Marketing Specialist	Marketing	2011-02-07	M	1978-03-06
19	NULL	Mary	A	Dempsey	Marketing Assistant	Marketing	2011-02-14	F	1978-01-29
20	NULL	Wanida	M	Benshoof	Marketing Assistant	Marketing	2011-01-07	F	1975-03-17
21	NULL	Teny	J	Eminhizer	Marketing Specialist	Marketing	2009-03-02	M	1986-02-04
22	NULL	Sariya	E	Hampad...	Marketing Specialist	Marketing	2008-12-12	M	1987-05-21
23	NULL	Mary	E	Gibson	Marketing Specialist	Marketing	2009-01-12	F	1962-09-13
24	Me	ill	A	Williams	Marketing Specialist	Marketing	2000-01-19	F	1970-06-19

1

The screenshot highlighted displays all the current data required for point 1.

2

The next step is to perform some data manipulation functions to retrieve the employee age and the duration of their employment at the organisation.



AGE:

A screenshot of the SQL Server Management Studio (SSMS) interface. The query window contains the following T-SQL code:

```
select
    datediff(year, HumanResources.Employee.Birthdate, ModifiedDate) as
    Age,
    datediff(year, HumanResources.Employee.HireDate, ModifiedDate) as
    YearsEmployed
from HumanResources.Employee
```

The results pane shows the output of the query:

	Age	YearsEmployed
1	45	5
2	43	6
3	40	7
4	40	7
5	62	6
6	55	6
7	27	5
8	28	6

## SECTION 1

# Relationship Between Tables

To determine the age and years employed I created a function to determine the difference in Years between the modified date and the Age/Years employed:

# Creating a table and adding all required entities

*After retrieving all the data, I then inserted all of the selected entities into a new table known as CurrentEmployees.*

*This has now been exported to an excel file located in the submitted folder*

```
SELECT
    HumanResources.vEmployeeDepartment.BusinessEntityID,
    HumanResources.vEmployeeDepartment.Title,
    HumanResources.vEmployeeDepartment.FirstName,
    HumanResources.vEmployeeDepartment.MiddleName,
    HumanResources.vEmployeeDepartment.LastName,
    HumanResources.vEmployeeDepartment.JobTitle,
    HumanResources.vEmployeeDepartment.Department,
    HumanResources.Employee.Gender,
    datediff(year, HumanResources.Employee.HireDate, ModifiedDate) as YearsEmployed,
    datediff(year, HumanResources.Employee.Birthdate, ModifiedDate) as Age
into CurrentEmployees
FROM HumanResources.vEmployeeDepartment
INNER JOIN HumanResources.Employee
ON HumanResources.Employee.BusinessEntityID = HumanResources.vEmployeeDepartment.BusinessEntityID
```

select * from CurrentEmployees												
100 %												
Results Messages												
BusinessEntityID	Title	FirstName	MiddleName	LastName	JobTitle	Department	Gender	YearsEmployed	Age			
1	Chief Executive Officer	Ken	J	Sánchez	Executive	M	5	45				
2	Vice President of Engineering	Teni	Lee	Duffy	Engineering	F	6	43				
3	Engineering Manager	Roberto		Tamburello	Engineering	M	7	40				
4	Senior Tool Designer	Rob		Walters	Tool Design	M	7	40				
5	Design Engineer	Ms. Gail	A	Erickson	Engineering	F	6	62				
6	Design Engineer	Mr. Jossef	H	Goldberg	Engineering	M	6	55				
7	Research and Development Manager	Dylan	A	Miller	Research and Development	M	5	27				
8	Research and Development Engineer	Diane	L	Margheim	Research and Development	F	6	28				
9	Research and Development Engineer	Gigi	N	Matthew	Research and Development	F	5	35				
10	Research and Development Manager	Michael		Raheem	Research and Development	M	5	30				
11	Senior Tool Designer	Ovidiu	V	Cracium	Tool Design	M	4	36				
12	Tool Designer	Thierry	B	D'Hers	Tool Design	M	7	55				
13	Tool Designer	Ms. Janice	M	Galvin	Tool Design	F	4	25				
14	Senior Design Engineer	Michael	I	Sullivan	Engineering	M	4	35				
15	Design Engineer	Sharon	B	Salavarria	Engineering	F	3	53				

# SECTION 1

## Next Objectives:

```
select  
HumanResources.Employee.BusinessEntityID,  
HumanResources.Employee.JobTitle,  
HumanResources.Employee.Gender,  
HumanResources.Employee.SickLeaveHours / DATEDIFF(year,  
HumanResources.Employee.HireDate, ModifiedDate) as AverageCalendarSickLeave  
into HighSickLeave  
from HumanResources.Employee;  
  
select  
HumanResources.Employee.BusinessEntityID,  
HumanResources.Employee.JobTitle,  
HumanResources.Employee.Gender,  
HumanResources.Employee.SickLeaveHours / DATEDIFF(year,  
HumanResources.Employee.HireDate, ModifiedDate) as AverageCalendarSickLeave  
into LowSickLeave  
from HumanResources.Employee;
```

```
select * from HighSickLeave  
where HighSickLeave.AverageCalendarYearSickLeave > 37.5  
  
select * from LowSickLeave  
where LowSickLeave.AverageCalendarYearSickLeave < 15
```

00 %

Results Messages

BusinessEntityID	Job Title	Gender	AverageCalendarYearSickLeave
1	Sales Representative	F	38

BusinessEntityID	Job Title	Gender	AverageCalendarYearSickLeave
1	Chief Executive Officer	M	13
2	Vice President of Engineering	F	3
3	Engineering Manager	M	3
4	Senior Tool Designer	M	11
5	Design Engineer	F	3
6	Design Engineer	M	3
7	Research and Development Manager	M	10

1

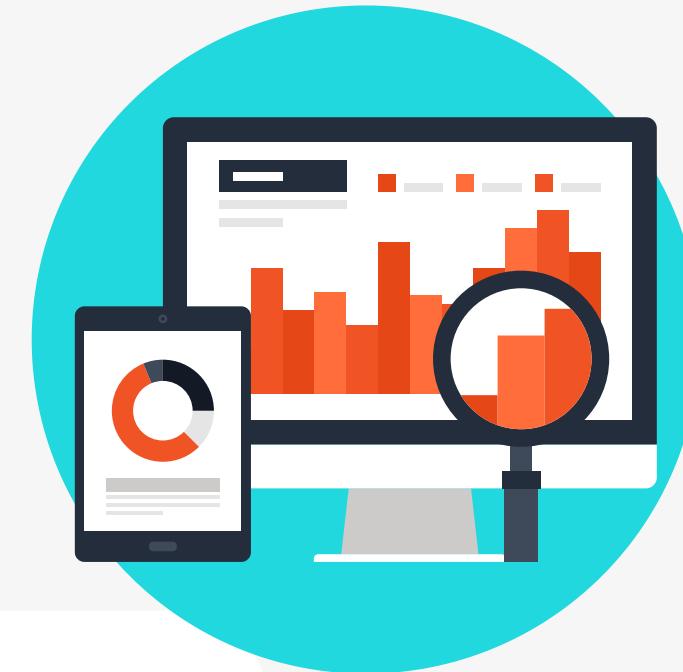
To create a 2 tables one for sick leave per year greater than 37.5 hours and a table for sick leave less than 15 hours

2

The second screenshot provides a condition to ensure that the tables are satisfied by the requirements set



# Sick Leave Tables



## Greater than 37.5 hours

To determine which employees had greater than this amount of sick leave I used a conditional statement to ensure it only filters on this rule.

## Less than 15 hours

I used the same technique to determine how many employees had less than 15 hours of sick leave. Both of these tables were exported as a CSV known as high sick leave and low sick leave

# SECTION 2

## Creating TopSalesPerformers table

```
select  
Sales.SalesPerson.BusinessEntityID,  
Sales.SalesTerritory.TerritoryID,  
Sales.SalesTerritory.Name,  
Sales.SalesTerritory.CountryRegionCode,  
Sales.SalesTerritory.[Group],  
Sales.SalesTerritory.SalesYTD,  
Sales.SalesTerritory.SalesLastYear  
into TopSalesPerformers  
FROM Sales.SalesTerritory FULL OUTER JOIN Sales.SalesPerson  
ON Sales.SalesTerritory.TerritoryID = Sales.SalesPerson.TerritoryID
```

select \* from TopSalesPerformers

100 %

Results Messages

	BusinessEntityID	TerritoryID	Name	CountryRegionCode	Group	SalesYTD	SalesLastYear
1	280	1	Northwest	US	North America	7887186.7882	3298694.4938
2	283	1	Northwest	US	North America	7887186.7882	3298694.4938
3	284	1	Northwest	US	North America	7887186.7882	3298694.4938
4	275	2	Northeast	US	North America	2402176.8476	3607148.9371
5	277	3	Central	US	North America	3072175.118	3205014.0767
6	276	4	Southwest	US	North America	10510853.8739	5366575.7098
7	281	4	Southwest	US	North America	10510853.8739	5366575.7098
8	279	5	Southeast	US	North America	2538667.2515	3925071.4318
9	278	6	Canada	CA	North America	6771829.1376	5693988.86
10	282	6	Canada	CA	North America	6771829.1376	5693988.86
11	290	7	France	FR	Europe	4772398.3078	2396539.7601
12	288	8	Germany	DE	Europe	3805202.3478	1307949.7917
13	286	9	Australia	AU	Pacific	5977814.9154	2278548.9776
14	289	10	United Kingdom	GB	Europe	5012905.3656	1635823.3967
15	274	NULL	NULL	NULL	NULL	NULL	NULL
16	285	NULL	NULL	NULL	NULL	NULL	NULL
17	287	NULL	NULL	NULL	NULL	NULL	NULL

- 1 To create a table with employees with sick leave greater than 37.5 hours in the year

- 2 To create a table showing employees with sick leave less than 15 hours of sick leave in the year



# SECTION 2

## Adding Performer name

```
ALTER TABLE TopSalesPerformers  
ADD FirstName nvarchar(50), MiddleName nvarchar(50), SurName nvarchar(50);
```

- 1 I added in 3 new empty columns for the FirstName, Middle Name and Surname of the Performer

```
update TopSalesPerformers  
set FirstName = person.person.FirstName, MiddleName = person.MiddleName, Surname = person.LastName  
from TopSalesPerformers inner join Person.Person on TopSalesPerformers.BusinessEntityID = Person.BusinessEntityID
```

- 2 I added in the full name from the Person.Person table into my newly created table using an inner join of BusinessEntityID

Top Sales Performers											
	BusinessEntityID	TerritoryID	Name	CountryRegionCode	Group	SalesYTD	SalesLastYear	FirstName	MiddleName	SurName	
1	280	1	Northwest	US	North America	7887186.7882	3298694.4938	Pamela	O	Anzman-Wolfe	
2	283	1	Northwest	US	North America	7887186.7882	3298694.4938	David	R	Campbell	
3	284	1	Northwest	US	North America	7887186.7882	3298694.4938	Tete	A	Mensa-Annan	
4	275	2	Northeast	US	North America	2402176.8476	3607148.9371	Michael	G	Blythe	
5	277	3	Central	US	North America	3072175.118	3205014.0767	Jillian	NULL	Carson	
6	276	4	Southwest	US	North America	10510853.8739	5366575.7098	Linda	C	Mitchell	

- 3 Here you can see the populated table with the full name of the performer. I have also exported the data into a CSV called TopSalesPerformers located in the submitted folder.

# SECTION 2

## Adding Modified Date

```
ALTER TABLE TopSalesPerformers  
ADD ModifiedDate datetime
```

1

The Date Modified is required to determine when the Sales To Date was last updated to try and predict if it is on target to beat the previous years sales.

```
update TopSalesPerformers  
set ModifiedDate = sales.SalesPerson.ModifiedDate  
from TopSalesPerformers inner join sales.SalesPerson on TopSalesPerformers.BusinessEntityID = sales.SalesPerson.BusinessEntityID
```

2

Here I am updating TopSalesPerformers ModifiedDate column with the SalesPerson.Modified date using an inner join of BusinessEntityID

Top Sales Performers												
BusinessEntityID	TerritoryID	Name	CountryRegionCode	Group	SalesYTD	SalesLastYear	FirstName	MiddleName	SurName	ModifiedDate	Notes	Photo
1	280	Northwest	US	North America	7887186.7882	3298694.4938	Pamela	O	Anzman-Wolfe	2011-05-24 00:00:00.000		
2	283	Northwest	US	North America	7887186.7882	3298694.4938	David	R	Campbell	2011-05-24 00:00:00.000		
3	284	Northwest	US	North America	7887186.7882	3298694.4938	Tete	A	Mensa-Annan	2012-09-23 00:00:00.000		
4	275	Northeast	US	North America	2402176.8476	3607148.9371	Michael	G	Blythe	2011-05-24 00:00:00.000		
5	277	Central	US	North America	3072175.118	3205014.0767	Jillian	NULL	Carson	2011-05-24 00:00:00.000		
6	276	Southwest	US	North America	10510853.8739	5366575.7098	Linda	C	Mitchell	2011-05-24 00:00:00.000		
7	281	Southwest	US	North America	10510853.8739	5366575.7098	Shu	K	Ito	2011-05-24 00:00:00.000		
8	279	Southeast	US	North America	2530667.2515	3925071.4318	Tsvi	Michael	Reiter	2011-05-24 00:00:00.000		
9	278	Canada	CA	North America	6771829.1376	5693988.86	Garett	R	Vargas	2011-05-24 00:00:00.000		
10	282	Canada	CA	North America	6771829.1376	5693988.86	José	Edvaldo	Saraiva	2011-05-24 00:00:00.000		
11	290	France	FR	Europe	4772398.3078	2396539.7601	Ranjit	R	Varkey Chudukatil	2012-05-23 00:00:00.000		
12	288	Germany	DE	Europe	3805202.3478	1307949.7917	Rachel	B	Valdez	2013-05-23 00:00:00.000		
13	286	Australia	AU	Pacific	5977814.9154	2278548.9776	Lynn	N	Tsoflias	2013-05-23 00:00:00.000		
14	289	United Kingdom	GB	Europe	5012905.3656	1635823.3967	Jae	B	Pak	2012-05-23 00:00:00.000		
15	274	NULL	NULL	NULL	NULL	NULL	Stephen	Y	Jiang	2010-12-28 00:00:00.000		
16	285	NULL	NULL	NULL	NULL	NULL	Syed	E	Abbas	2013-03-07 00:00:00.000		
17	287	NULL	NULL	NULL	NULL	NULL	Amy	E	Alberts	2012-04-09 00:00:00.000		

3

Here, the ModifiedDate column has been updated. I have also exported the data into a CSV called TopSalesPerformers located in the submitted folder.

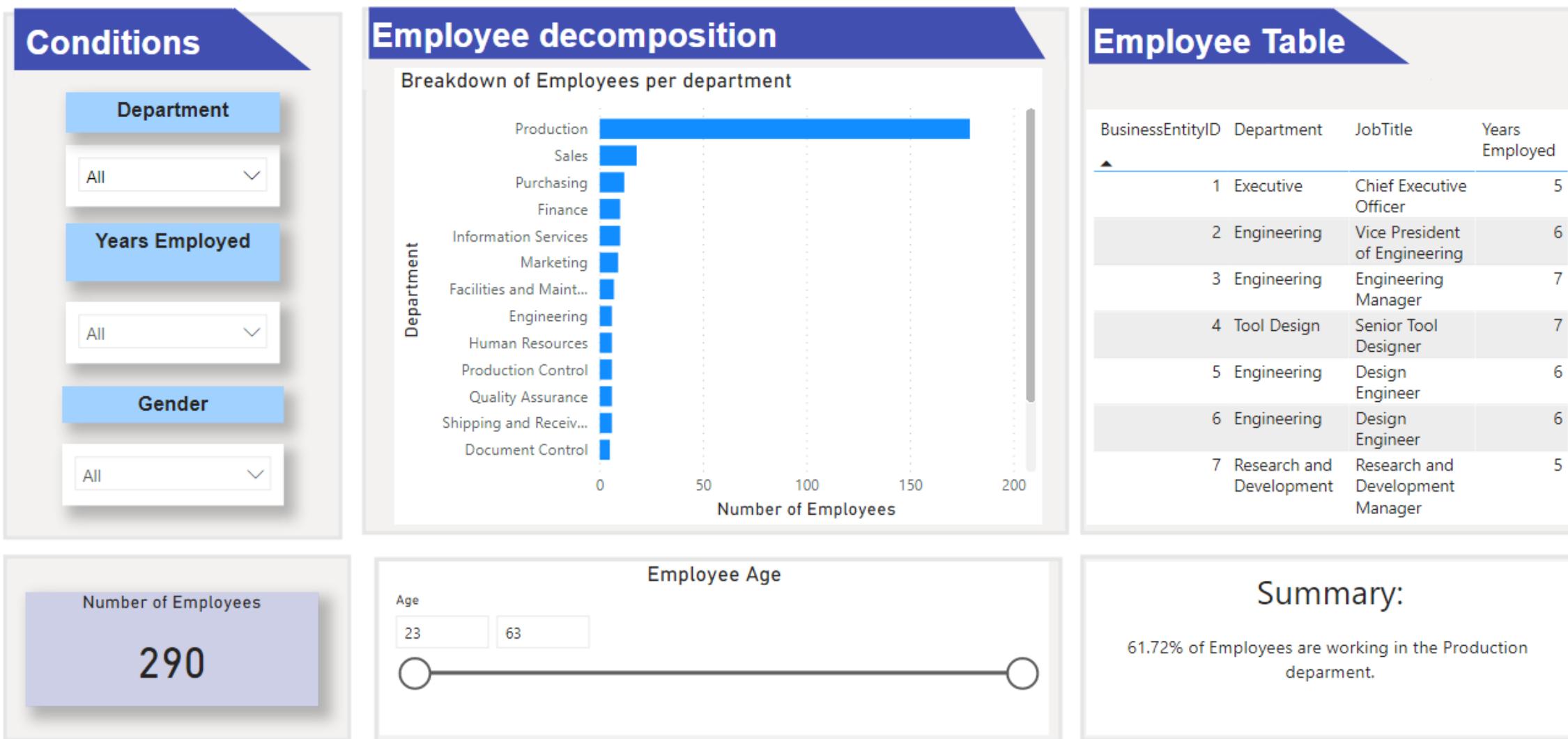


# **INSIGHTS & Recommendations**

# HR Performance Reporting



# SECTION 1



This dashboard can be filtered by department, years employed and gender using the slicers under the conditions tab. This provides an optional breakdown if any senior executives want to delve deeper and look at specific departments. It could also be interesting to see employee loyalty per department to determine if employees are satisfied in their job.

Satisfaction in the job could be deemed to be a major factor in increased productivity so this could be a consideration to develop this idea.

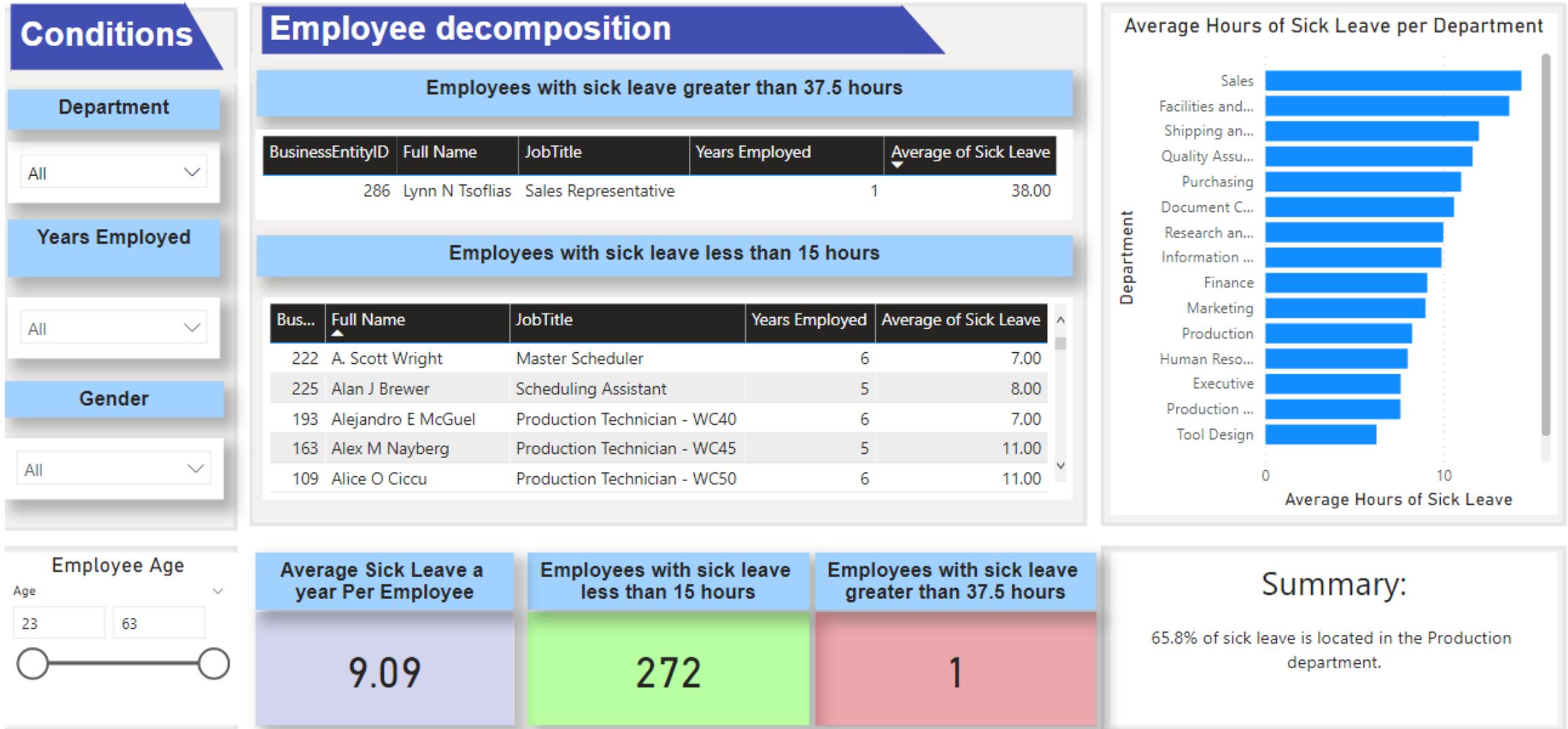
Here is a breakdown of the insights from Employee information

This would be deemed useful to the senior executive as it provides a high level of the decomposition of their company, especially in each department.

# HR Performance Reporting



# SECTION 1



Here is a breakdown of the insights from the Employee sick leave.

There are some employees that are between the 15-37.5 hours so that is why at the bottom left there are more employees than when the employees sick leave less than 15 hours and employees sick leave is greater than 37.5 hours as that only adds up to 273

A recommendation to the senior executive team is to identify factors that could be influencing employees sick leave; e.g are they being overworked? Are there problems within the department that need to be looked into?

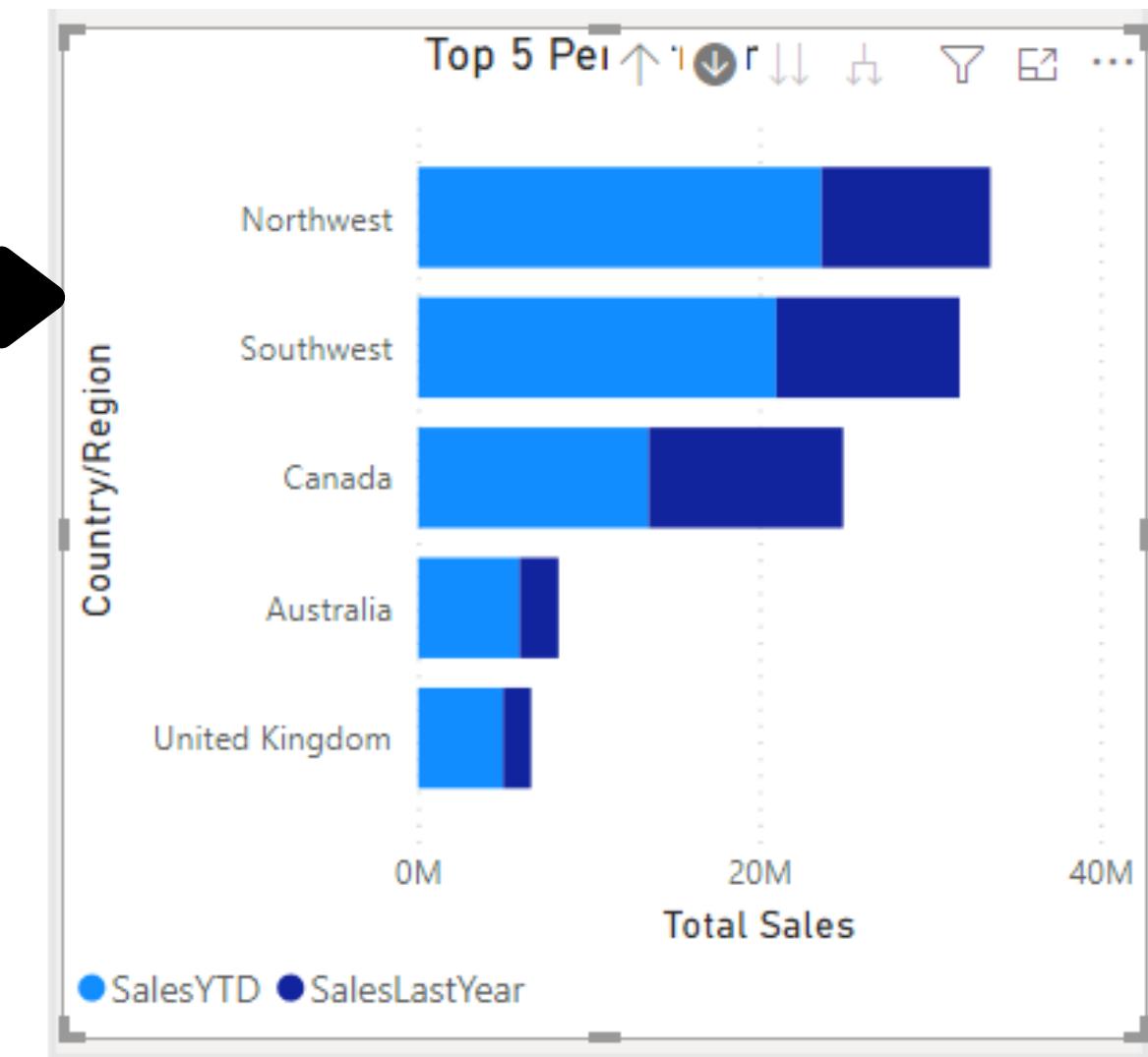
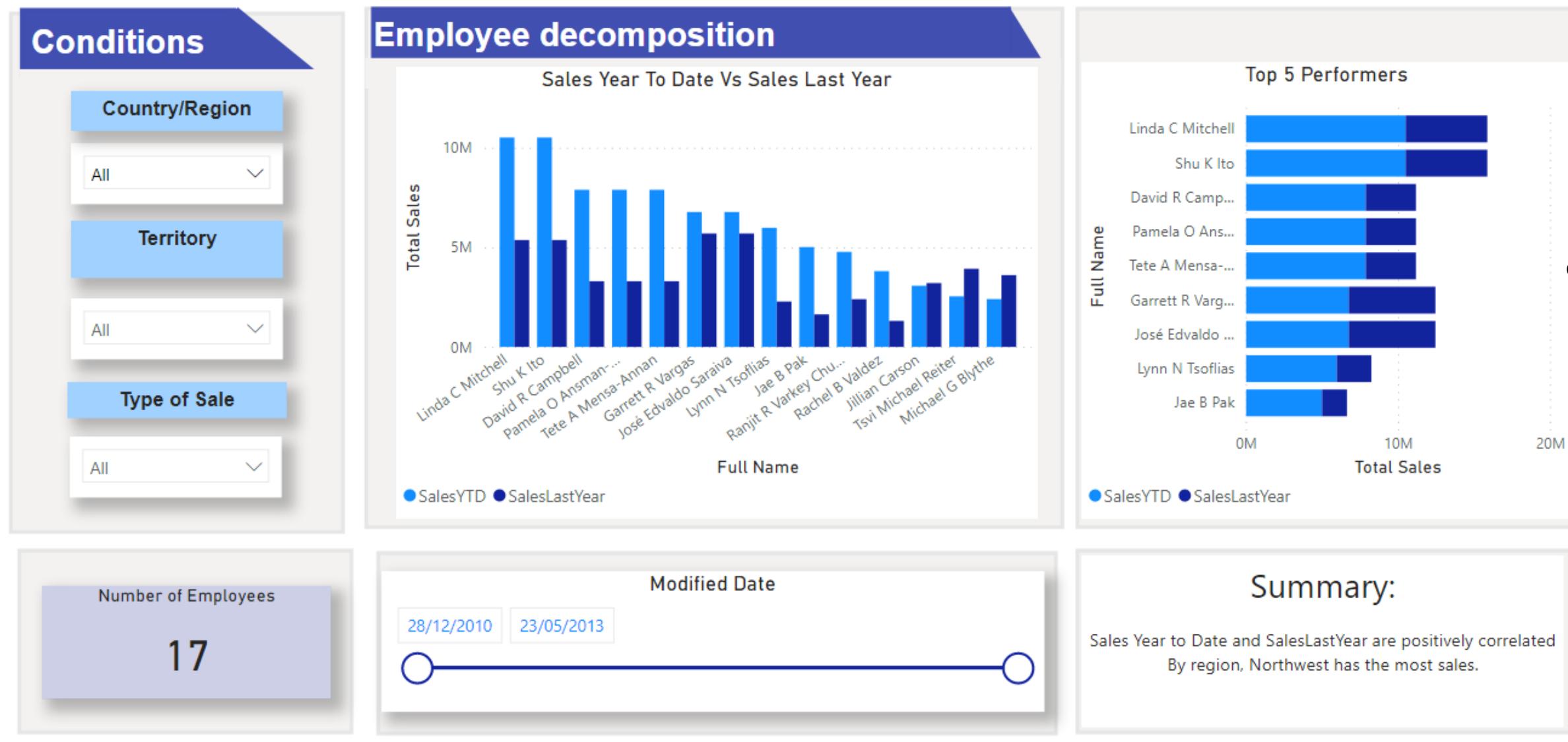
In addition, it could be worth looking at when employees take sick leave. Are there any correlations with public holidays or does it fall at a similar time as when employees take their holiday?

Moreover, it would be interesting to determine why only 1 employee had over 37.5 hours. This could be developed further where if there is an employee that has more than 37.5 hours it could trigger a process to send an email to their line manager and let them know that they have had over the standard limit of sick leave.

# HR Performance Reporting



# SECTION 2



I have created a dashboard highlighting the following:

- A graphical representation of Sales Year to Date Vs Sales Last Year as a clustered column chart
- The top 5 performers with a drill down to show by country/region in what area had the most sales
- Added filters on the left hand side to allow any senior executive to breakdown the data further using the Country/Region, Territory and Type of Sale filters

# SECTION 2

## **Summary from the data:**

- Sales Year to Date and SalesLastYear are positively correlated. Therefore, it would suggest that sales will continue to rise if the employee was successful the year before.
- By region, Northwest has the most sales. This suggests that the Northwest clients should be targeted further and similar clients should be brought in.

## **Recommendations to improve the data:**

- Highlight whether the SalesLastYear ends as a financial year or at the end of a calendar year.
- Provide further historic data for sales in previous years as the sales year to date are already over the previous year so any forecasting would be heavily extrapolated and inaccurate. Therefore, it is difficult to gain any valuable insights to predict sales.
- Provide further factors of why there is an increase of sales. This would allow the technique of feature importance to be used to determine what factors influence sales and then we would utilise that data to ensure the positive factors are induced.
- It would be good to have more employees as 17 would not be able to reflect against any large organisation so it would be difficult to interpret for other companies if they were to use this dashboard
- I was surprised to identify that there was no direct correlation between sick leave and sales. There was an expectation that as less sick leave was taken, there would be an increase in sales as they are in the job longer that year.

# Project Plan vs Actual

## Plan

### Section 1 - Data Gathering (4 hours)

- Understanding the data and scoping out the relationships for current employees (1 hour)
- To create a table of all current employees with the suggested entities (1 hour)
- To create a table with employees with sick leave greater than 37.5 hours in the year (2 hours)
- To create a table showing employees with sick leave less than 15 hours of sick leave in the year (2 hours)

## Actual - (10 Hours)

- Understanding the data and scoping out the relationships for current employees (4 hours) - I tried to overcomplicate it by creating relationships using foreign keys rather than joining the tables which made it much easier.
- To create a table of all current employees with the suggested entities (2 hours) - I managed to keep to this time frame as I tried to understand the relationships beforehand and plan my approach to creating the table with employee information.
- To create a table with employees with sick leave greater than 37.5 hours in the year (2 hours)
- To create a table showing employees with sick leave less than 15 hours of sick leave in the year (2 hours)

Both of these milestones were correct as it was again just understanding the relationships and ensuring I was aware in what entities I was using to show the required information.

# Project Plan vs Actual

## Plan

### Section 2 - Analysis (3 hours)

- A graphical representation of 'Sales Year To Date' against 'Sales Last Year' (2 hours)
- A graphical representation of the top 5 performers, including territory & country (1 hour)

## Actual - (5 Hours)

- A graphical representation of 'Sales Year To Date' against 'Sales Last Year' (2 hours) - Straightforward and this time took account of creating my dashboard template to start adding in the information
- A graphical representation of the top 5 performers, including territory & country (1 hour)
  - This was fine as all the information and structure to the dashboard was in place.
- Creating the employee dashboard (2 hours) this was not previously planned out so I had to take account of this and create a page for this.

# Project Plan vs Actual

## Plan

### Section 3 - Insights & recommendations (2 hours)

- Gathering insights from the graphs (1 hour)
- Written recommendations to the senior executive (1 hour)

## Actual - (4 Hours)

- Gathering insights from the graphs (3 hours) - I was experimenting to determine if there was any forecasting with the sales using the Sales Last Year data but found the model to be too inaccurate so this became one of the recommendations to the senior executive to get richer data.
- Written recommendations to the senior executive (1 hour)
  - This was correct as I had to ensure that any future development could be made by recommending if the data was improved there would be further insights.

# Project Plan vs Actual

## Actual - (10 Hours)

### Creating the documentation for the project

This was also something I did not consider in mapping out and storyboarding the documentation to this project. This, therefore, took a lot longer than anticipated so if I was to do this project again I would ensure I would have a template of the project.

# Reflection of Project

## Challenges

The main realisation within the project was that the Age and Years employed were in relation to the date modified of the table rather than the current date. This problem resulted in me going back through the queries and recreating the new tables.

I initially tried to create a table using primary and foreign keys but this overcomplicated the problem as all that was required was to join the tables. This resulted in some alteration to the initial plan as I had to reevaluate whether I would still be satisfying the requirements through the join method and what actions would I have to do differently when using this function.

I also noticed the reason that there were blank employees were due to employees leaving the organisation. Following this, I had to ensure in my dashboard that these employees were removed as they could skew the results as they may have taken additional sick leave to find a new job or that they were not enjoying their job.

## Benefits of the project

This project starts to provide a framework for the rest of the company to determine what departments are successful and how they could be optimised. It allows senior executives to develop a roadmap and spend funding accordingly to the departments that are struggling. However, this could be due to extreneous factors which I will mention in the future plans.

Additionally, this report can be used to show which employees need additional support. There could be reasons in why an employee is taking a significant amount of sick leave so HR can be notified and support them where necessary.

# Reflection of Project

## Future plans

I would send out an anonymous poll to employees to determine the reasons why they are taking sick leave. This ensures that there is a truthful response and the team could act accordingly to try and reduce the factors in their sick leave; e.g overworked.

I would also delve into the employee timesheets and working conditions. These all could be factors in an increased amount of sick leave. I would then use a method known as feature importance to rank these factors to understand where the problems are and this can be resolved by senior management.

Moreover, it would be interesting to see a time-series of when employees took holiday. Was it near public holidays or their annual leave? To get a better understanding of why some departments are not doing as well, I would also consider looking into customer complaints. There could be factors such as customer care or poor quality of products that could be impacting the departments, resulting in a lower satisfaction rate for the employees as they are not performing as well as initially thought.

## General self improvements

Instead of downloading the data as a CSV, I would connect the dashboard directly to the SQL database. This ensures that there is a live connection so any changes in the database will be shown in the dashboard.

I feel that I scratched the surface with the sales dashboard. If I had more time, I would create dummy time series data to show, as a proof of concept, when employees are most productive throughout the calendar year and also suggest in that time period to hire more temps to come in and support the employee so they can reach more clients.