



DASHBOARD TO AUTOMATE HR REPORTING A MINI PROJECT REPORT

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BONAFIDE CERTIFICATE

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ABSTRACT

This project of data analytics for HR will help the officials of an organization to analyse the big amount of data regarding the employees mode of working as working from home, part time, full time and the irregularity to office easily tracked by creating a dashboard. The organization will struggle with enormous amount of data of employees to have a look on the employee's regularity to office and to generate monthly and annual reports. This problem could be solved by creating a dashboard using data analytics which produces graphs as an outcome which make the job easier and data analysed can be taken for future developments. An HR dashboard is an analytical tool used by Human Resources teams for tracking, analysing and reporting on key performance indicators of the employees within their organization.

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LIST OF SYMBOLS

S.NO NOTATION NOTATION DESCRIPTION NAME Class + Public Name Represents a collection of -Private similar entities grouped 1. Class together. -attribute Protected -attribute Associations represent 2. Association relationships static NAME Class A Class B between classes. Roles represent the way the two classes see each ROLE Class B Class A other. Specifies a role played by Actor a user that interacts with the subject

S.NO	NOTATION NAME	NOTATION	DESCRIPTION
4.	Communication		Communication between various use cases.
5.	Initial State	$\bigcirc{\longrightarrow}$	Initial state of the object.
6.	Final state		Final state of the object.
7.	Control flow	\longrightarrow	Represents various control flow between the states.
8.	Decision box	•	Represents decision making process from a

constraint.

S.NO	NOTATION NAME	NOTATION	DESCRIPTION
9.	Use case	Use case	Interaction between the system and external environment.
10.	External entity		Represents external entities such as keyboard, sensors, etc.
11.	Transition		Represents communication that occurs between Processes.
12.	Object Lifeline		Represents the vertical dimensions that the object communications.
13.	Message	$\xrightarrow{\text{Message}} \rightarrow$	Represents the message exchanged.

CHAPTER 1 INTRODUCTION

CHAPTER 1

INTRODUCTION

This HR Dashboard tool which provides at- a- glance of view of key performance indicators relevant to an HR objective or business process designed to enable HR managers to easily monitor workforce metrics. This helps leaders to make decisions to create a better work environment and maximize employee productivity. This Dashboard is based on the metrics of attendance report of the employees in the organization. Currently this dashboard tool is designed in such away it is completely automated and can be refreshed on its own with internet connectivity at a interval of time. This dashboard tool can also produce alert messages in the form of a email notification when the threshold value is met in the dashboard when it is being updated.

CHAPTER 2 SYSTEM ANALYSIS

CHAPTER 2

SYSTEM ANALYSIS

2.1 Existing System

There are some business analytics dashboard available with datasets of attendance of the employees. But in present we are much prone to many virus attacks, seasonal flues etc. Hence it is also necessary to create dashboard with these measures to make previous precautious steps.

Disadvantages

- Dashboard that is not more concerned about the health of theemployees.
- Not having notification feature connected with these kinds of attendance monitoring dashboard.

2.2 Proposed System

Our system has advantages in some aspects such as:

- Better visualization
- Better organization of the datasets
- Sending alerts through email
- Automatic Data Refreshment

CHAPTER 3 SYSTEM REQUIREMENTS

CHAPTER 3 SYSTEM REQUIREMENTS

3.1 Hardware Requirements

- Processor: x64 Processor: AMD Opteron, AMD Athlon 64, Intel Xeon with Intel EM64Tsupport, Intel Pentium IV with EM64T.
- Ram: 4GB or higher
- Hard disk: Minimum of 1GB. Addition space will be required on thedatabase.
- Operating System: Windows 8.1 or higher

3.2 Software Requirements

Languages Used:

- DAX Query Language
- JSON

Visualization Tool:

Power BI

Other Software Tools:

- Gateway
- Power Automate

Data Storage Tool:

Microsoft

3.2.1 Software Description

Software Description for building a dashboard using Power BI include:

1. DAX Query Language

DAX (Data Analysis Expressions) is a formula language used in Power BI, Excel, and Analysis Services for data analysis. A wide range of calculations, including data aggregation and filtering, the creation of new calculated columns or tables, and complex calculations based on multiple conditions, are all possible with the help of DAX formulas. For data analysis and modeling, DAX is a powerful tool that can be used to create complex calculations that can't be done with standard Excel formulas. DAX extends Excel's capabilities to handle more complex data analysis tasks and is based on Excel's formula language. Formulas in DAX can reference columns, tables, and other formulas in the same or different tables, and they use functions and operators to calculate data. Users can create powerful data models and analyses with DAX, which provide insights and make iteasier to make decisions based on data.

There are several advantages of using DAX for data analysis:

- Flexible and Powerful: DAX provides a flexible and powerful tool set for data analysis, allowing users to perform complex calculations and aggregations on data.
- Improved Data Modeling: DAX allows for data modeling, enabling users to create more accurate and efficient data models for their analysis.
- Integration with Other Tools: DAX can be used with various other tools, such as Excel, Power BI, and Analysis Services, providing users with a seamless integration experience.
- Re-usability: DAX formulas are reusable, meaning that once a formula has been created, it can be reused in other queries, saving time and effort.
- Dynamic Calculations: DAX formulas can be used to create dynamic calculations
 that adjust based on user input or changes in data, providing a more interactive
 andpersonalized experience for users.

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2. JSON

JSON (JavaScript Object Notation) is a lightweight data interchange format that is easy for humans to read and write, and easy for machines to parse and generate. As an alternative to XML, JSON, which is based on a subset of the JavaScript programming language, is frequently utilized to transfer data between a server and a web application. Key-value pairs, where keys are strings and valuescan be strings, numbers, Boolean, arrays, or other objects, make up JSON, a text-based format. Because it is designed to be simple for humans to read and write, JSON is a popular choice for data storage and transmission.

JSON's ease of use and adaptability are among its primary advantages. JSON can be handily parsed by programming dialects like JavaScript, Python, and Java, and can be utilized to communicate information between various applications or frameworks JSON's light weight is yet another advantage. Compared to other formats like XML or binary formats, JSON requires less bandwidth and storage space because it is based on text. Because of this, JSON is an excellent format for use in web applications and other settings where speed and efficiency are crucial. JSON is a popular and widely used data interchange format that is lightweight, flexible, and easy to read and write, making it an excellent choice for many applications involving data transmission and storage.

3. Power BI

Microsoft's Power BI business analytic service lets users visualize and analyze data from a wide range of sources. Power BI has intuitive drag-and-drop features that make it easy for users to create powerful and interactive reports and visualizations without having to know a lot about coding or technology.

Power BI's ability to connect to a wide range of data sources, including onpremises data sources, cloud-based services, and Excel spreadsheets, is one of its
main advantages. Power BI also includes a number of built- in connectors that
make it simple for users to connect to popular data sources like Microsoft
Dynamics, Google Analytic, and Salesforce. One more benefit of Force BI is its
strong information demonstrating abilities. Using Power BI's intuitive Query
Editor, users can transform and shape data to create complex data models that
can be used for analysis and visualization. Power BI additionally upholds
progressed examination and AI, permitting clients to make custom computations
and prescient models in light of their information.

Power BI also offers a variety of visualization options, such as maps, charts, and tables, that let users create rich, interactive dashboards and reports. Power BI likewise gives a scope of customization choices, permitting clients to tweak the look and feel of their reports and dashboards to suit the requirements.

Power BI is a strong and easy to understand business examination administration that gives a scope of elements and capacities for information investigation and representation. Power BI is a great option for businesses looking to gain insights from their data because of its powerful data modeling capabilities, built-in connectors, and rich visualization options.

4. Gateway

The software application power BI connects on-premises data sources to the cloud-based Power BI service. Users can access and analyze data from on -premises data sources in Power BI thanks to the Power BI Gateway, which acts as a link between the Power BI service and on-premises data sources like SQL Server or Oracle databases. Users are able to securely connect to on-premises data sources without the need for intricate network configurations or VPN connections thanks to the Power BI Gateway, which can be installed on either a local machine or a server. Power BI's data is always current thanks to the Gateway's support for scheduled and on-demand refreshes.

The Power BI Gateway's capacity to accommodate multiple users and data sources is yet another advantage. The Gateway can be set up to support multiple users, letting each user connect to different on- premises data sources. It can also be set up to support multiple data sources for each user, letting them access a wide range of data sources from Power BI. In addition, the Power BI Gateway offers cutting-edge security features like data encryption to guarantee the safe transfer of data between on-premises data sources and the Power BI service. Users can connect to data sources that Power BI does not natively support by configuring theGateway to support custom data connectors.

The Power BI Gateway is a robust and adaptable instrument that enables businesses to securely link on-premises data sources to the Power BI service. The Power BI Gateway is a great option for businesses that want to use Power BI to get insights from their on- premises data sources. It supports multiple users and data sources, has advanced security features, and has custom data connectors.

4. Power Automate

Microsoft's Power Automate, formerly Microsoft Flow, is a cloud-based service that lets users create automated workflows between various services and applications. Users of Power Automate are able to streamline business processes and automate repetitive tasks, which results in time savings and increased productivity. Power Automate's ease of use is one of its primary benefits. Power Automate has an intuitive user interface that lets users use a visual designer to create workflows without having to know a lot about coding or technology. Power Automate also gives users access to a variety of pre-built templates and connectorsthat make it simple and quick for them to set up workflows that connect to popular services and applications. Power Automate's adaptability is yet another benefit. Office 365, Dynamics 365, SharePoint, One Drive, Twitter, and a lot of other services are supported by Power Automate. Power Automate also offers a variety of triggers and actions that let users create intricate workflows that react to particular conditions or events.

Power Automate offers advanced features like conditional logic, data transformations, and error handling, making it possible for users to construct robust and dependable workflows. Power Automate also lets you connect to other Microsoft services like Power BI and Azure, making it possible for you to build complete solutions that use multiple services. Power Automate is a powerful and adaptable tool for streamlining business processes and automating mundane tasks. Power Automate is an excellent option for businesses looking to increase productivity and efficiency through automation due to its ease of use, extensive set of applications and services, and advanced features.

5. Microsoft Excel

Excel is a generally utilized calculation sheet program created by Microsoft. It is mostly used to store, organize, and manipulate data. It also does calculations and makes graphs and charts. Excel is a powerful tool that can be used in many different fields, including finance, accounting, engineering, and scientific research. Excel's ease of use is one of its primary benefits. Succeed gives an easy to understand interface that empowers clients to rapidly and effectively enter and control information. Excel also comes with a number of built-in functions and formulas that let users do complicated calculations and analyses without having to know a lot about coding or technology.

Excel's adaptability is yet another benefit. Succeed upholds many information types, including text, numbers, dates, and recipes, and gives a scope of designing choices that empower clients to make proficient looking calculation sheets and reports. Additionally, Excel offers a variety of options for creating charts and graphs, allowing users to create visual representations of their data that are easier to comprehend and interpret. Pivot Tables, one of Excel's more advanced features, allow users to quickly and easily summarize and analyze large amounts of data. Excel also lets you connect to Power BI and SharePoint, two other Microsoft services, so you can create complete solutions that use multiple services.

In general, millions of people use Excel, which is a powerful and adaptable tool. Excel is a great option for anyone looking to store, organize, and analyze data in a user-friendly and effective manner due to its versatility, ease of use, and advanced features.

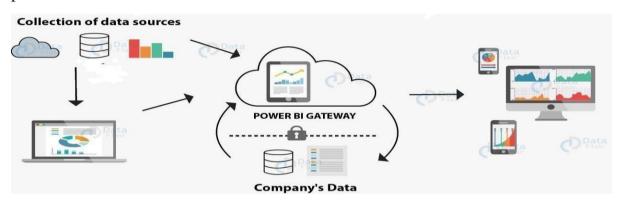
CHAPTER 4 SYSTEM DESIGN

CHAPTER 4

SYSTEM DESIGN

4.1 SYSTEM ARCHITECTURE

The architecture consists of four major steps that explain the whole process from data sourcing to the creation of reports and dashboards. Various technologies and processes work together to get the required results with extreme precision.



Transforming the data:

Before visualizing the data, cleaning and pre processing it should be done. This means removing useless or missing values from rows or columns. Certain rules will be applied to transform and load the datasets into the warehouse.

Report and publish

After cleaning and transforming the data, reports will be created based on requirements. A report is a visualization of the data with different filters and constraints presented in the form of graphs, pie charts, and other figures.

Creating dashboards

Dashboards are created by pinning individual elements or pages of live reports. Dashboards should be created after the reports published your to the BI service.

CHAPTER 5 SYSTEM IMPLEMENTATION

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5.1 LIST OF MODULES

- 1. Understanding the requirements.
- 2. Gathering and Transforming Data.
 - Data Cleaning and Preparation
 - Exploratory Data Analysis
 - Creating Metrix using DAX
- 3. Visualization or Dash boarding.
- 4. Publishing the report to web.
- 5.Installing Gateway software
- 6.Email Notification.

5.2 MODULE DESCRIPTION

1. Understanding the Requirements:

The first step is to define the problem that needs to be solved. The problem should be clearly defined and articulated in order to guide the entire analysis process. In this we are having the year starting from April to March and need to combine the three months of data together to see the insights. In this dashboard we included to see the insights of the following:

- Working Preference of People
- Find Sick Leave Percentage

2. Gathering and Transforming Data:

The next step is to gather and transform data using Power Query. Power Query is a feature within Power BI that helps you collect and transform data. We have our data in Excel and multiple sheets with different column headers.

Data Cleaning and Preparation:

Once the data has been collected, it must be cleaned and prepared for analysis. This involves removing duplicates, correcting errors, and transforming the data into a usable format.

Exploratory Data Analysis:

In this step, the data is explored to identify patterns, relationships, and trends. This can involve using descriptive statistics, visualizations, and other analytical tools to gain insights into the data.

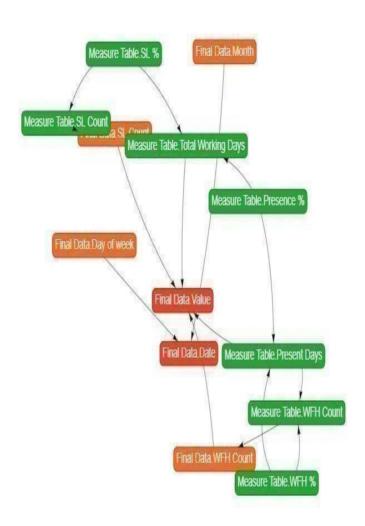
Creating metrics using DAX:

By leveraging the power of DAX, we create custom metrics that are tailored to the specific needs of their organization, enabling them to make more informed decisions and take action based on data-driven insights.

SUMMARY OF THE TABLE CONTENTS:

Field	Expression	Report Page[Visual Name]
Final Data Sheet Name		
Final Data.Employee Code		
Final Data.Name		Page 1.384ce1c62e464e9e190b Page 1.fb5521f9451ae8eebf98
Final Data.Date		Page 1.41908faf8af8c8fc7196 Page 1.2dabf81b2e319a917f45 Page 1.235d61664d3ed05126ae Page 1.3d3a9897735bc34cbe58
Final Data.Value		Page 1.fb5521f9451ae8eebf98
Final Data WFH Count	SWITCH(TRUE(), 'Final Data"[Value] = "WFH", 1, 'Final Data"[Value] = "HWFH", 0.5, 0)	
Final Data.Month	STARTOFMONTH('Final Data'[Date'])	Page 1.41908faf8af8c8fc7196
al Data.Date[Date Hierarchy.Year] (Auto DateTime)		
al Data.Date[Date Hierarchy.Quarter] (Auto DateTime)		
al Data Date[Date Hierarchy.Month] (Auto DateTime)		
al Data.Date[Date Hierarchy.Day] (Auto DateTime)		
al Data.Month[Date Hierarchy.Year] (Auto DateTime)		
al Data.Month[Date Hierarchy.Quarter] (Auto DateTime)		
al Data.Month[Date Hierarchy.Month] (Auto DateTime)		
al Data.Month[Date Hierarchy.Day] (Auto DateTime)		
asure Table.Column1		
Measure Table.Total Working Days	nonworkdays = CALGULATE(COUNT(Final Da ta[Value]), 'Final Data[Value] in ("WO","HO")) R eturn totaldays-nonworkdays	
M Measure Table.Present Days	VAR Presentdays = CALCULATE(COUNT(Final Data[Value]), Final Data[Value]="P") RETURN Presentdays + [WFH Count]	
Measure Table.WFH Count	SUM(Final Data [WFH Count])	
M Measure Table.Presence %	DIVIDE([Present Days], Measure Table [Total Working Days], 0)	Page 1.0cfe3dbcd5c7c6817c71 Page 1.384ce1c62e464e9e190b Page 1.2dabf81b2e319a917f45 Page 1.71df9d0dc7aaafa7bf22
Measure Table.WFH %	DIVIDE([WFH Count] [Present Days] 0)	Page 1.6854116601556c384677 Page 1.384ce1c62e464e9e190b Page 1.235d61664d3ed05126ae V Page 1.54961cae8a11b59f8f7a
M Measure Table.SL Count	SUM(Final Data[St. Count])	
M Measure Table.SL %	DIVIDE([SL Count],[Total Working Days],0)	Page 1.6436c7230b697a43f093 Page 1.384ce1c62e464e9e190b

DEPENDENCIES:



3. Visualization or Dashboarding:

The results of the analysis must be communicated to stakeholders in a clear and visually appealing format. This can involve creating charts, graphs, and other visualizations to help stakeholders understand the insights gained from the analysis.

4. Publishing the report to web:

Publishing Power BI to web means making a Power BI report publicly available on the internet, allowing anyone with access to the report to view and interact with it. This is achieved by publishing the report to the Power BI service and then embedding it into a website or sharing it through a link.

5. Installing Gateway software to automate dashboard:

Using Gateway to automate a dashboard enables you to keep your data up-to-date and ensure that the visualizations in your dashboard always reflect the latest data. It also allows to connect to data sources that are not available through the cloud, such as on-premises databases, and securely access and refresh the data. With automated dashboards, we monitor key performance indicators (KPIs), track progress towards business goals, and make data-driven decisions based on real-time insights. When scheduling the refresh, we can choose to refresh the data every hour, day, week, or month. In our Dashboard we set up in such way on daily basis at 3pm automatic refreshment occurs.

6. Email Notification:

We Trigger a cloud flow based on an email's sender by creating a manual flow using JSON in power automate to trigger a mail when the threshold of the value in your created dashboard hits. In our dashboard a separate alert dashboard has been created in such a way if the present percentage hits below 90 percentage it needs to send a mail notification to the particular mail id added.

CHAPTER 6 RESULTS

CHAPTER 6 RESULTS

Our automated dashboard was tested on the features of Email Notification with different trigger values, mail id and the process was successful in all cases. The dashboardwas also tested on the feature of automatic refreshment with different time and by adding different data in excel and worked seamlessly by keep on updating the dashboard visuals. The dashboard was also evaluated on various performance metrics, including conversion speed, memory usage, and error handling. The results show that the tool is efficient and reliable with greater visuals. The error handling was also effective, with appropriate error notifications had be sent in case of any issues during the automatic refreshment process.

CHAPTER 7 CONCLUSION AND FUTURE ENHANCEMENTS

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7.1 CONCLUSION

In this undertaking we had made HR Dashboard device which gives initially of perspective on key execution markers applicable to a HR goal or business process intended to empower HR administrators to screen labor force measurements without any problem. This assists leaders in making decisions to improve the work environment and boost employee output. The organization's metrics for employee attendance serve as the foundation for this dashboard. As of now this dashboard device is planned in such a manner it is totally robotized and can be revived all alone with web network at a time frame. When the dashboard's threshold value is reached while it is being updated, this dashboard tool can also send email notifications as alerts.

7.2 FUTURE ENHANCEMENTS

Up until this point, we had created a dashboard that focused on identifying employee working preferences and sick leave percentages. In future relying on the future prerequisites the dashboard can be altered with the required information. We provided the best visualization, but additional, superior visualizations may be provided in the future.

CHAPTER 8 APPENDIX

APPENDIX

8.1 CODE DAXQUERIES

Final Data:

```
let.
Source=
Excel.Workbook(File.Contents("C:\Users\HP\Downloads\Attend ence Sheet 2022-
2023 Masked.xlsx"),null,true),
#"Filtered Rows" =Table.SelectRows(Source,each([Name]<>AttendanceKey ")),
#"Invoked Custom Function" = Table.AddColumn
(#"Filtered Rows", "GetData", each GetData([Name])),
#"Expanded GetData" = Table.ExpandTableColumn
#"Invoked
                Custom
                            Function", "GetData", { "EmployeeCode", "Name", "Date",
"Value"}, {"Employee Code", "Name.1", "Date", "Value"}),
            Columns"=Table.RemoveColumns
(#"Expanded GetData", {"Name", "Data", "Kind", "Hidden"}),
#"Renamed Columns"=Table.RenameColumns(#"Removed Columns", {{"Item", "Sheet
Name" } }) ,
#"Renamed
            Columns1"= Table.RenameColumns
(#"Renamed Columns", {{"Name.1", "Name"}}),
#"Changed Type" = Table.TransformColumnTypes
(#"Renamed Columns1", {{ "Date", type date}, { "Value", type text},
{"Employee Code", type text}, {"Name", type text}}) in
#"Changed Type"
```

Measure Table:

```
let
Source=Table.FromRows(Json.Document(Binary.Decompress(Binary.FromText(
"i44FAA == BinaryEncoding.Base64), Compression.Deflate)),
let _t = ((type nullable text)
meta [Serialized.Text = true]) in type table[Column1 = t]),
#"Changed Type" =
Table.TransformColumnTypes(Source,{{"Column1",type text}})in
#"Changed Type"
```

Template Table:

```
let
```

```
Source = Excel.Workbook(File.Contents("C:\Users\HP\Downloads\Attendance
Sheet2022-2023 Masked.xlsx"), null, true),
#"Filtered Rows" = Table.SelectRows(Source, each [Name] = Worksheet),
#"Removed Other Columns" = Table.SelectColumns(#"FilteredRows",{"Data"}),
Data = #"Removed Other Columns"{0}[Data],
#"PromotedHeaders" = Table.PromoteHeaders(Data,
[PromoteAllScalars=true]),
#"Removed Top Rows" = Table.Skip(#"Promoted Headers",1),
#"RenamedColumns" = Table.RenameColumns
(#"Removed TopRows", {{"AtliQ", "Employee Code"}, {"Column2", "Name"}}),
#"Unpivoted Other Columns"Table.UnpivotOtherColumns
(#"Renamed Columns", {"Employee Code", "Name"}, "Attribute", "Value"),
#"Renamed Columns1" = Table.RenameColumns(#"Unpivoted Other
Columns", {{"Attribute", "Date"}}),
#"Changed Type1" = Table.TransformColumnTypes(#"RenamedColumns1",{{"Value",
type text}, {"Date", type date}}),
#"Removed Errors" = Table.RemoveRowsWithErrors(#"Changed Type1",{"Date"})in
#"Removed Errors"
```

Worksheet<Text><Parameter>:

```
Null meta [IsParameterQuery=true, Type="Text",
IsParameterQueryRequired=true]
```

Get Data(Function):

```
let
Source = (Worksheet as text) => let Source = Excel.Workbook
(File.Contents("C:\Users\HP\Downloads\AttendanceSheet20222023 Masked.xlsx"),
null, true),
#"Filtered Rows" = Table.SelectRows(Source, each[Name]=Worksheet),
 #"Removed Other Columns"= Table.SelectColumns
(#"Filtered Rows", {"Data"}), Data = #"Removed Other Columns"{0}[Data],
 #"Promoted Headers"=Table.PromoteHeaders(Data,[PromoteAllScalars=true]),
#"Removed Top Rows" = Table.Skip(#"Promoted Headers",1),
#"RenamedColumns" = Table.RenameColumns(#"Removed Top Rows", {{"AtliQ",
 "Employee Code"}, {"Column2", "Name"}}),
#"Unpivoted Other Columns"= Table.UnpivotOtherColumns
(#"RenamedColumns", {"Employee Code", "Name"}, "Attribute", "Value"),
 #"RenamedColumns1"=Table.RenameColumns
(#"Unpivoted OtherColumns", {{"Attribute", "Date"}}),
 #"ChangedType1"=Table.TransformColumnTypes
(#"Renamed Columns1", {{"Value", type text}, {"Date", type date}}),
#"Removed Errors"= Table.RemoveRowsWithErrors(#"Changed Type1",{"Date"})in
#"Removed Errors"
 Source
```

JSON CODE:

```
When a data driven alert is triggered:
        "inputs": {
            "host": {
                "connectionName":
                "shared powerbi", "operationId":
                "CheckAlertStatus",
                "apiId": "/providers/Microsoft.PowerApps/apis/shared powerbi"
            },
            "parameters": {
                "alertId": "6ddce225-613e-4e9a-b072-ac8bd6cd65b9_"
            },
            "authentication": "@parameters('$authentication')"
        },
        "recurrence": {
            "interval": 15,
            "frequency":
            "Minute"
        },
        "metadata": {
            "operationMetadataId": "04985b19-e370-4904-928d-37c60f229f91"
        }
    }
   To send an email notification:
   {
       "inputs": {
           "host": {
               "connectionName":
               "shared sendmail", "operationId":
               "SendEmailV3",
               "apiId": "/providers/Microsoft.PowerApps/apis/shared sendmail"
           },
           "parameters": {
               "request/to":
               "harikn1802@gmail.com",
               "request/subject":
"@{triggerOutputs()?['body/tileUrl']}@{triggerOutputs()?['body/alertThreshold']}",
               "request/text": "T@{triggerOutputs()?['body/alertTitle']}"
           },
           "authentication": "@parameters('$authentication')"
       },
       "metadata": {
          "operationMetadataId": "f91e37dd-2fa4-4287-8b82-dc7eae294fbe"}
```

8.2 SCREENSHOTS

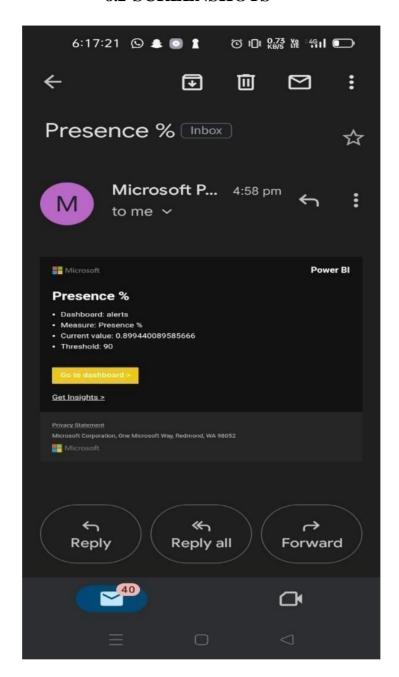
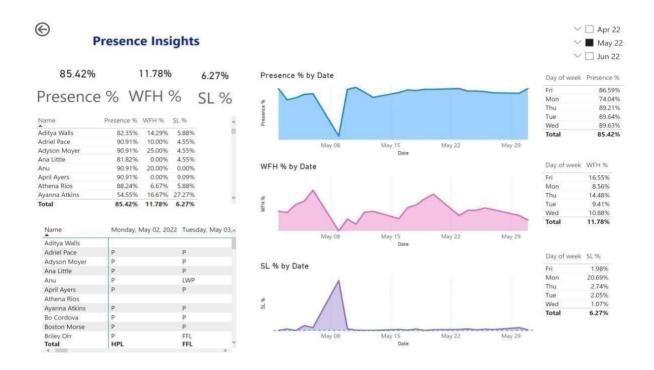


Fig 1:Email notification when the threshold value is met



Fig 2: Dashboard and Sheet before Automatic Refreshment



Name	Monday, May 02, 2022	Tuesday, May 03,
Aditya Walls		
Adriel Pace	P	P
Adyson Moyer	P	P
Ana Little	P	P
Anu	P	LWP
April Ayers	P	P
Athena Rios		
Ayanna Atkins	P	P
Bo Cordova	P	P
Boston Morse	P	P
Briley Orr Total	P HPL	FFL FFL
<	MASSACKET	>

Fig 3: Dashboard and table changes after Automatic Refreshment

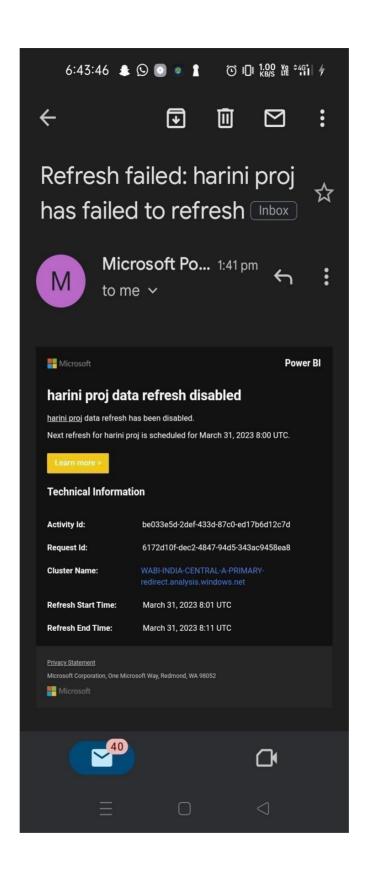


Fig 4: Error Handling: Notification for automatic refreshment Failure due to no internet connection.