PROJECT REPORT
ON

EMPLOYEE PERFORMANCE DASHBOARD

Submitted by

Gagandeep Singh
(23MCA20292)

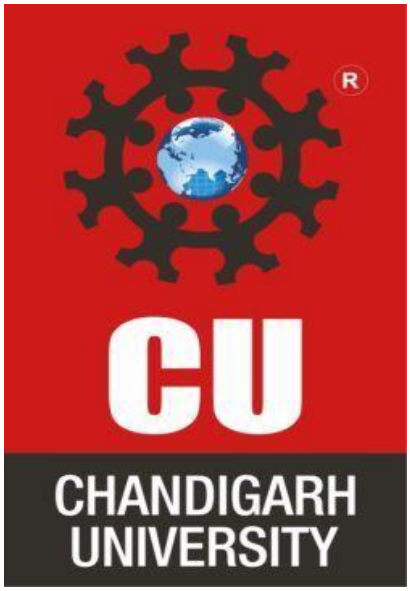
Semester 3

Submitted to

Mr. Sanjay Kumar Aggarwal (E13150)
Assistant Professor (BUSINESS ANALYTICS)

in partial fulfilment for the award of the degree of

Master of Computer Applications (MCA)



Chandigarh University

OCTOBER 2024

Table of Contents

Declaration

I, **Gagandeep Singh**, a student of master's in computer application, session 2023-2025, at University Institute of Computing, Chandigarh University, hereby declare that the work presented in this project titled "**Employee Performance Dashboard**" is my original work, conducted under the guidance and supervision of **Mr. Sanjay Kumar Aggarwal**.

I confirm that this project is the result of my own research and efforts, and it has not been submitted previously for any other degree or diploma. I have appropriately acknowledged all the sources of information and support received throughout this work. The content presented in this project reflects my understanding and knowledge acquired through dedicated academic effort.

This project is an accurate representation of my commitment and hard work, and I declare that the data presented is authentic and accurate to the best of my knowledge.

Signature Signature

(Head of Department, MCA) (Supervisor, MCA)

Acknowledgment

I would like to express my deepest gratitude to **Mr. Sanjay Kumar Aggarwal**, my project supervisor at the University Institute of Computing, Chandigarh University, for his invaluable guidance, support, and encouragement throughout the development of this project titled "**Employee Performance Dashboard**". His insights and constructive feedback have been instrumental in shaping the direction and success of this work.

I am also sincerely grateful to the other faculty members and mentors whose expertise and advice were essential in overcoming the technical challenges encountered during this project. Their support has played a significant role in its successful completion.

Additionally, I extend my heartfelt thanks to the University Institute of Computing at Chandigarh University for providing the necessary resources and facilities to carry out this project. The academic environment and continuous support have greatly contributed to my learning and professional growth.

Finally, I would like to thank my family and friends for their unwavering encouragement and patience throughout this journey. Their support has been a constant source of motivation and inspiration.

Abstract

The Employee Performance Dashboard project aims to enhance organizational decision-making by providing a comprehensive visualization of employee performance metrics using Microsoft Excel. This dashboard consolidates key performance indicators (KPIs) such as productivity rates, attendance, goal completion, and employee satisfaction into a user-friendly interface. By leveraging data collected from performance reviews, attendance records, and employee feedback, the dashboard facilitates real-time tracking and analysis of performance trends across various departments.

The project employs advanced Excel features, including PivotTables and dynamic charts, to ensure accurate data representation and ease of use. Insights gained from the dashboard highlight areas for improvement and inform management strategies, ultimately driving employee engagement and enhancing overall organizational performance. This report outlines the methodology, design, implementation challenges, and outcomes of the project, demonstrating the dashboard's effectiveness as a vital tool for performance management. The findings underscore the importance of data-driven decision-making in fostering a productive workplace culture.

Introduction

In today's competitive business environment, effective employee performance management is crucial for organizational success. Organizations increasingly recognize that understanding and optimizing employee performance can lead to enhanced productivity, improved morale, and overall better results. However, the traditional methods of performance evaluation often fall short, lacking the ability to provide real-time insights and comprehensive overviews of individual and team contributions.

The purpose of this project is to develop an Employee Performance Dashboard using Microsoft Excel, a tool that enables organizations to visualize and analyse performance metrics effectively. By consolidating key performance indicators (KPIs) into a single, user-friendly interface, the dashboard empowers managers to make data-driven decisions and identify trends that can inform strategic initiatives.

The scope of this project includes data from various departments within the organization, ensuring a holistic view of employee performance across different roles. The insights derived from the dashboard are intended to support HR managers, team leaders, and executives in their efforts to enhance employee engagement, drive accountability, and optimize performance management strategies.

In the following sections, this report will detail the methodology used to collect and analyse data, the design and implementation of the dashboard, and the key findings and recommendations derived from the project. Through this initiative, the organization aims to foster a culture of continuous improvement and data-driven decision-making, ultimately leading to greater employee satisfaction and organizational success.

Project Objectives

The objectives of the Employee Performance Dashboard project are as follows:

1. **Design a User-Friendly Dashboard**: Create an intuitive and visually appealing dashboard in Excel that consolidates various employee performance metrics, making it accessible for users at all levels of the organization.
2. **Visualize Key Performance Indicators (KPIs)**: Identify and effectively visualize essential KPIs, such as productivity rates, attendance, goal completion, and employee satisfaction, to facilitate quick assessments and comparisons.
3. **Enable Data-Driven Decision-Making**: Provide management with actionable insights derived from performance data, allowing them to make informed decisions that enhance employee performance and engagement.
4. **Facilitate Real-Time Tracking**: Implement features that enable real-time updates of performance metrics, ensuring that the dashboard reflects the most current data for accurate analysis.
5. **Identify Trends and Areas for Improvement**: Use the dashboard to analyze historical data and identify trends, helping to pinpoint areas where performance can be improved and allowing for proactive management strategies.
6. **Support Employee Development**: Enable HR and management to track individual performance over time, facilitating targeted training and development initiatives tailored to employee needs.
7. **Enhance Communication and Accountability**: Foster a culture of transparency and accountability by making performance data readily available

to employees and managers, encouraging open discussions around performance and goals.

8. **Streamline Reporting Processes**: Reduce the time and effort required for performance reporting by automating data aggregation and visualization, allowing managers to focus on strategic planning and employee engagement rather than manual data handling.

   By achieving these objectives, the project aims to create a valuable tool that enhances the organization's ability to monitor, manage, and improve employee performance effectively.

Data Collection

Data collection for the Employee Performance Dashboard involved a systematic approach to gather comprehensive and accurate performance metrics. The sources of data included:

1. **Employee Performance Reviews**: Collected from annual or quarterly performance evaluation forms completed by managers and HR. This data provides insights into individual employee strengths, weaknesses, and areas for development.
2. **Attendance Records**: Sourced from the organization’s HR management system, these records detail employee attendance, absences, and punctuality, enabling the analysis of attendance patterns.
3. **Different aspects:** Employee’s various key qualities like integrity, accountability, work quality, adaptability, etc. are also considered.

4. **Peer Feedback**: Collected through 360-degree feedback processes, providing additional perspectives on employee performance from colleagues, which enhances the understanding of teamwork and collaboration.

By utilizing a combination of these data sources, the project ensures a holistic view of employee performance, enabling meaningful analysis and insights.

Tools & Technologies

The successful implementation of the Employee Performance Dashboard relied on various tools and technologies, primarily focused on Microsoft Excel. The following features were utilized:

1. **Microsoft Excel**: The primary software used for creating the dashboard. Key functionalities included:
    - **PivotTables**: To summarize and analyze large datasets efficiently, allowing for quick aggregation of performance metrics.
    - **Charts and Graphs**: Various chart types (bar, line, pie) were employed to visualize KPIs effectively, making data interpretation intuitive.
    - **Conditional Formatting**: Applied to highlight important trends, such as low attendance rates or unmet goals, facilitating immediate recognition of performance issues.
    - **Data Validation**: Ensured the integrity of data input by restricting entries to predefined formats, reducing the risk of errors during data collection.

2. **Data Import Tools**: Excel's built-in functionalities were utilized to import data from various sources, such as CSV files, databases, and other spreadsheets, ensuring seamless data integration.
3. **Training Resources**: Online tutorials and documentation on Excel features were referenced to enhance the team's capability in utilizing advanced functionalities effectively.

By leveraging these tools and technologies, the project successfully created a dynamic and effective Employee Performance Dashboard that supports informed decision-making and performance management.

Data Processing

Data cleaning was a crucial step in preparing the data for accurate analysis and visualization within the dashboard. This process ensured that the information used was reliable and free from errors. The following steps were undertaken in the data cleaning process:

1. **Data Validation**:
    - Checked for inconsistencies in data entry formats (e.g., date formats, text case) and standardized them to ensure uniformity across the dataset.
2. **Removing Duplicates**:
    - Identified and eliminated duplicate entries that could skew performance metrics. This was done using Excel's "Remove Duplicates" feature to ensure each data point represented a unique instance.
3. **Handling Missing Values**:

- Investigated missing data points, determining whether to fill in gaps (using averages or median values where applicable) or to remove records with insufficient data for analysis. Ensuring minimal data loss while maintaining data integrity was a priority.

4. **Error Correction**:
    - Manually reviewed and corrected any obvious errors in the dataset, such as incorrect attendance records or performance ratings that did not align with the expected criteria.
5. **Standardization of Categories**:
    - Ensured consistency in categorical data (e.g., employee departments, job titles) by standardizing terms used across different data sources, which is critical for accurate reporting and analysis.
6. **Creating a Master Data Set**:
    - After cleaning, a master dataset was created, integrating data from all sources into a single, coherent structure that serves as the foundation for the dashboard. This master set is regularly updated to reflect new data as it becomes available.

Through these meticulous data cleaning processes, the project ensured that the Employee Performance Dashboard operates on high-quality, reliable data, ultimately enhancing the accuracy and relevance of the insights generated.

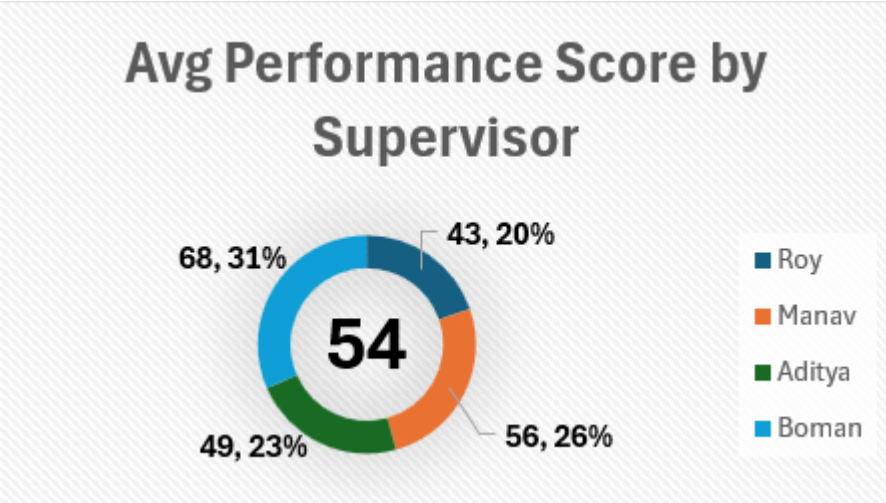
Dashboard Design

The design of the Employee Performance Dashboard was guided by the principles of clarity, usability, and visual appeal. The dashboard is structured to provide a comprehensive overview of employee performance metrics while

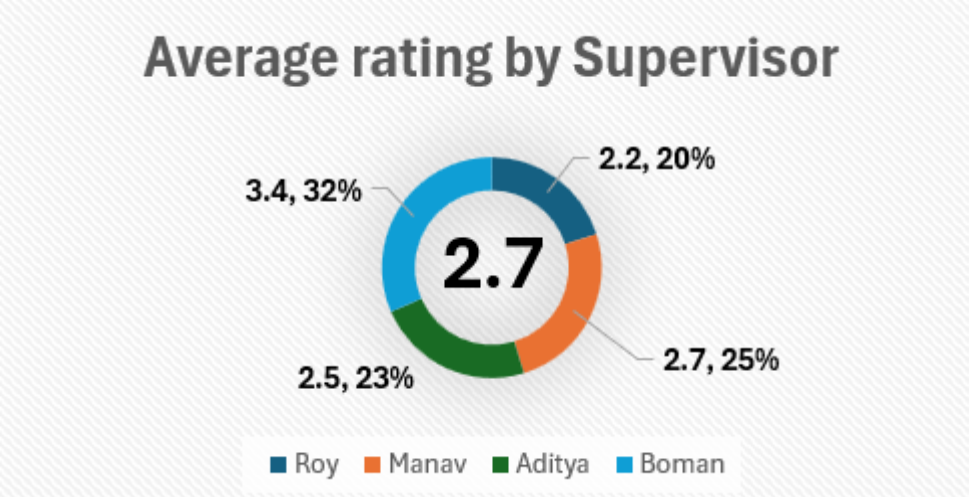
ensuring ease of navigation and interpretation. Key elements of the design include:

1. Colour Scheme and Formatting:
    - A consistent colour palette was chosen to enhance readability and maintain a professional look. Colours were used strategically to indicate performance levels (e.g., green for meeting targets, red for underperformance). ○ Conditional formatting highlights key data points, such as low attendance or missed deadlines, drawing attention to critical areas.
2. Interactive Features:
    - Drop-Down Filters: These allow users to customize the view based on specific departments, timeframes, or employee roles, making the dashboard more versatile and user-friendly. ○ Dynamic Charts: Linked to the data sources, ensuring that all visualizations automatically update when new data is entered.
3. Different sections containing graphs and charts for better visibility and understandability. All the sections are as follows:

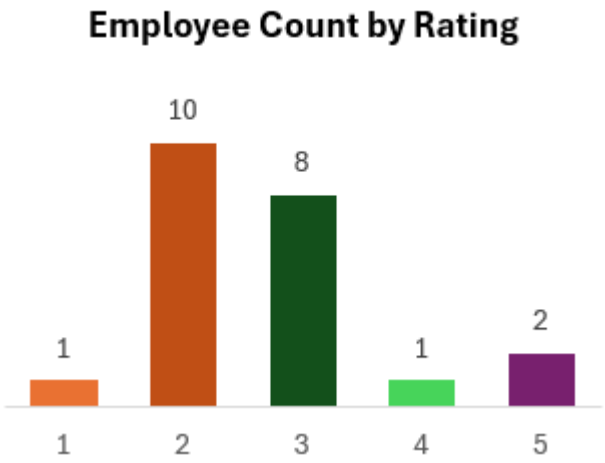
- Average Score Section: This section includes the average score of employees given by supervisors according to different aspect areas of the employee.



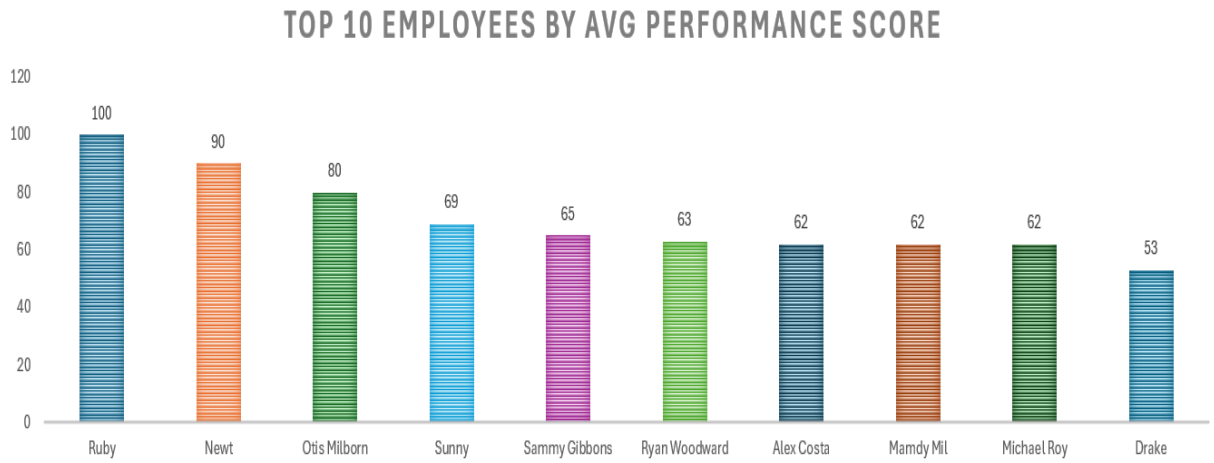
- Average Rating Section: This section includes the average rating of employees given by supervisors according to different qualities and work efficiency of the employee.



- Employee count Section: This section includes the count of employees according to their rating scores.



- Top 10 Employees Section: This section includes the information of the top 10 hard working employees according to their overall performance supervised and evaluated by the superiors.



Implementation

The implementation of the Employee Performance Dashboard involved a structured approach to ensure that the dashboard was functional, user-friendly, and aligned with the project objectives. The following steps were undertaken during the implementation phase:

1. **Data Import**:
    - Raw data from various sources, including performance reviews, attendance records, project metrics, and employee surveys, was imported into Excel. This involved using Excel's data import features to seamlessly integrate data from CSV files, databases, and other spreadsheets.
2. **Data Cleaning**:
    - As previously described, data cleaning was conducted to address inconsistencies, duplicates, and errors. A master dataset was created, ensuring that all necessary data was accurate and standardized for analysis.
3. **Dashboard Layout Creation**:
    - The dashboard layout was constructed based on the design plan. Key sections were established, including the KPI summary, visualizations, and detailed data tables. This involved arranging elements in a logical flow, allowing users to easily navigate and interpret the information.

4. **Development of PivotTables**:
    - PivotTables were created to summarize the data effectively. This allowed for quick aggregation of KPIs and facilitated dynamic reporting, enabling users to manipulate the data views based on specific criteria.
5. **Visualization Creation**:
    - Various charts and graphs were developed to visualize the KPIs. This included bar charts for productivity comparisons, line graphs for attendance trends, and pie charts for goal completion metrics. Each visualization was linked to the master dataset, ensuring that any updates to the data would automatically refresh the visuals.
6. **Interactivity Features**:
    - Drop-down filters were implemented to allow users to customize their view of the dashboard based on different departments, timeframes, or employee roles. This interactive feature enhances user experience and allows for more targeted analysis.
7. **Testing and Validation**:
    - The dashboard underwent rigorous testing to ensure functionality. This included checking that all links and formulas worked correctly, verifying that data updates reflected accurately in visualizations, and ensuring that user navigation was intuitive.
8. **Training and Documentation**:
    - A brief training session was conducted for managers and HR personnel to familiarize them with the dashboard's features. A user guide was also provided, detailing how to navigate and interpret the dashboard effectively.

Result and Decision

The implementation of the Employee Performance Dashboard yielded significant insights and actionable outcomes that contributed to enhanced performance management within the organization.

1. **Enhanced Data Accessibility:**
    - **The dashboard provided stakeholders with easy access to critical performance data. Managers reported a marked improvement in their ability to monitor employee performance, leading to more timely interventions.**
2. **Identification of Trends:**
    - **The visualizations revealed important trends, such as a decline in productivity in specific departments and fluctuating attendance rates. These insights prompted targeted discussions on resource allocation and employee engagement strategies.**
3. **Informed Decision-Making:**
    - **With real-time data at their fingertips, management was able to make informed decisions regarding employee training needs and performance incentives. The dashboard facilitated datadriven discussions in performance review meetings, leading to more objective evaluations.**
4. **Improved Employee Engagement:**
    - **By sharing insights from the dashboard with employees, management fostered a culture of transparency and accountability. Employees became more aware of their performance metrics, motivating them to set and achieve personal goals.**
5. **Continuous Improvement:**
    - **The dashboard established a framework for ongoing performance assessment. Regular updates and reviews of the metrics allowed the organization to continuously refine its performance management processes.**
6. **Recommendations for Future Enhancements:**
    - **While the dashboard met initial project objectives, there were suggestions for future enhancements, such as incorporating additional KPIs (e.g., employee turnover rates) and integrating real-time data feeds for even more timely insights.**

In summary, the Employee Performance Dashboard has proven to be an asset for the organization, transforming the way employee performance is monitored and managed. The insights derived from this tool support a culture of continuous improvement and strategic decision-making, ultimately contributing to greater organizational effectiveness.

Data Visualization

Common Data Visualization Options:

- **Bar Charts:** Used to compare categorical data, such as the number of employees in different departments or the distribution of job titles.
- **Line Charts:** Used to visualize trends over time, such as employee turnover rates or hiring trends.
- **Pie Charts:** Used to show the proportion of different categories within a whole, such as the distribution of employee demographics or job satisfaction levels.
- **Scatter Plots:** Used to identify relationships between two numerical variables, such as employee performance and tenure.
- **Histograms:** Used to visualize the distribution of a numerical variable, such as employee salaries or age.
- **Box Plots:** Used to show the distribution of a numerical variable, including quartiles, median, and outliers.
- **Heat Maps:** Used to visualize data in a matrix format, highlighting patterns and trends.

Specific to the HR Analysis Dashboard Recruitment Analysis:

- Bar charts to compare the number of hires from different sources. ○ Line charts to track time-to-hire over time.
- Pie charts to show the distribution of job offers accepted and rejected.

Performance Management:

- Bar charts to compare performance ratings across different departments or job roles.
- Line charts to track individual employee performance over time.
- Scatter plots to identify correlations between performance metrics and other variables.

Retention Analysis:

- Line charts to track employee turnover rates over time.
- Bar charts to compare turnover rates across different departments or job levels.
- Pie charts to show the distribution of reasons for leaving.

Learning and Development:

- Bar charts to compare training completion rates for different programs.
- Line charts to track the number of employees completing training over time.

Pie charts to show the distribution of training topics.

Conclusion

The Employee Performance Dashboard project has successfully achieved its objectives of creating a comprehensive, user-friendly tool for visualizing and analysing employee performance metrics. By leveraging Microsoft Excel's powerful features, the dashboard provides management with real-time insights into key performance indicators, enabling datadriven decision-making and proactive management strategies.

The implementation of the dashboard has led to enhanced accessibility of performance data, identification of critical trends, and improved employee engagement. As a result, the organization is better equipped to foster a culture of continuous improvement and accountability, ultimately driving better performance outcomes. This project demonstrates the significant value of data visualization in performance management and highlights the importance of investing in tools that support effective employee monitoring and development.

Recommendations

- **Integrate Real-Time Data Feeds**: To further enhance the dashboard's effectiveness, consider integrating real-time data sources. This would provide the most current insights, allowing for timely adjustments and interventions.

- **Expand KPIs**: Include additional key performance indicators, such as employee turnover rates and training effectiveness, to provide a more holistic view of employee performance and engagement.

- **Regular Training Sessions**: Conduct ongoing training sessions for managers and HR personnel to ensure they remain proficient in utilizing the dashboard and interpreting its data. This will maximize the tool's potential for driving performance improvements.

- **Feedback Mechanism**: Establish a feedback mechanism for users to suggest improvements and enhancements to the dashboard, ensuring it continues to meet the evolving needs of the organization.

- **Periodic Reviews**: Schedule regular reviews of the dashboard to assess its effectiveness and relevance. This could involve analysing trends and determining whether the chosen KPIs remain aligned with organizational goals.

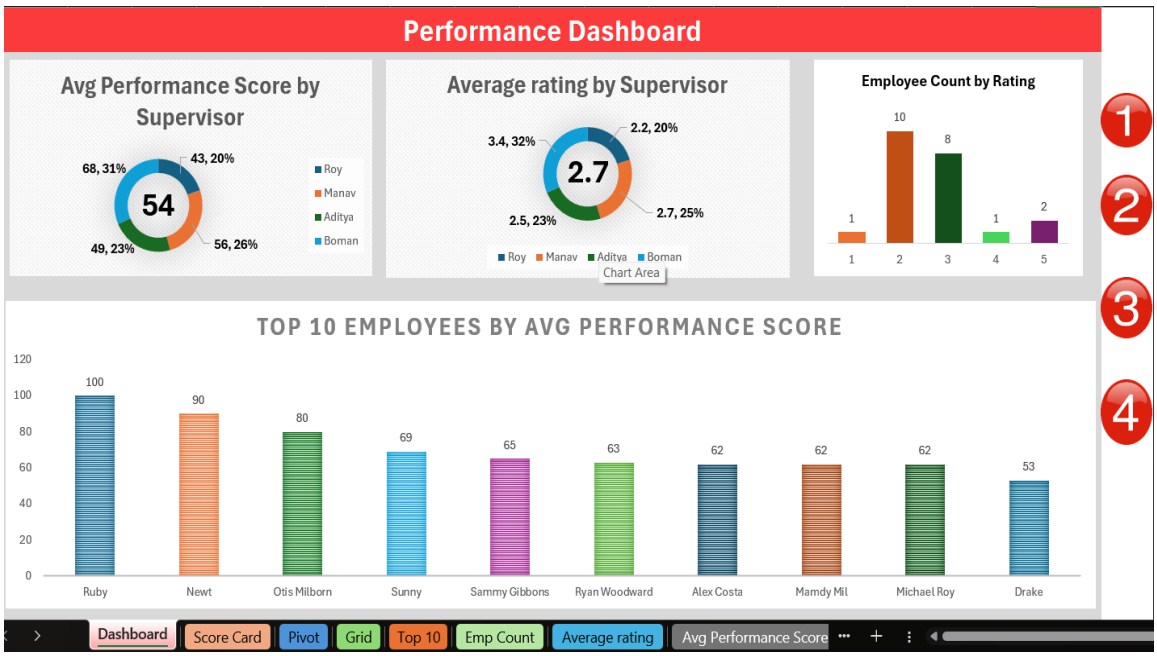
References

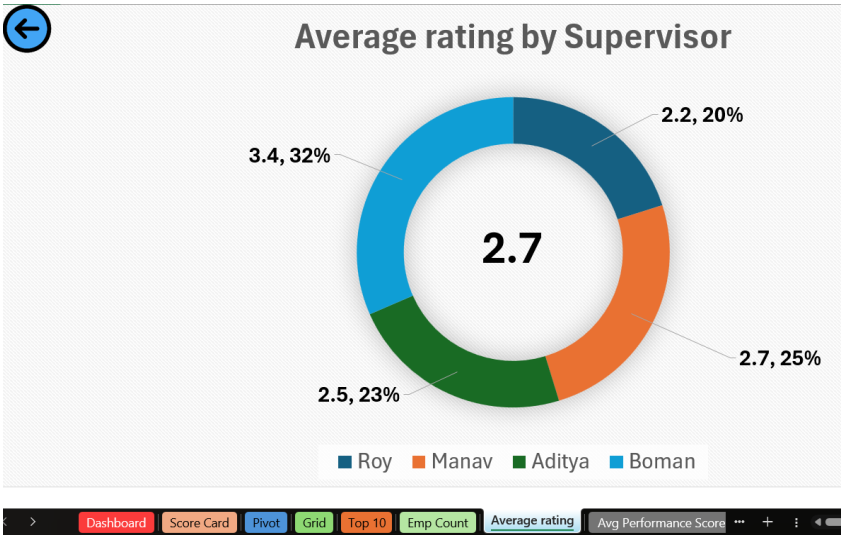
- Recruitment from GitHub.
- Kaggle for data extraction.
- Johnson, L. (2021). *Data Visualization for Managers*. Business Insights Press.

Final Dashboard Output

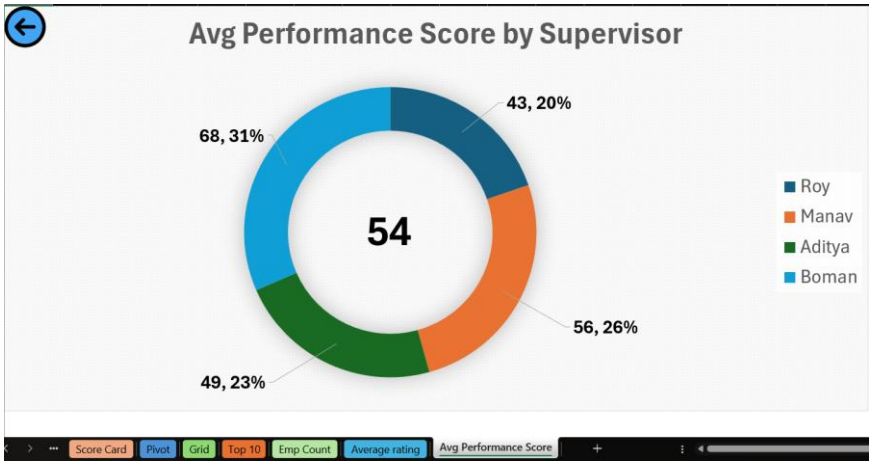
The final Dashboard includes various buttons with which the user can easily switch between different sections of the dashboard and access the required information as shown below:

Data Visualization

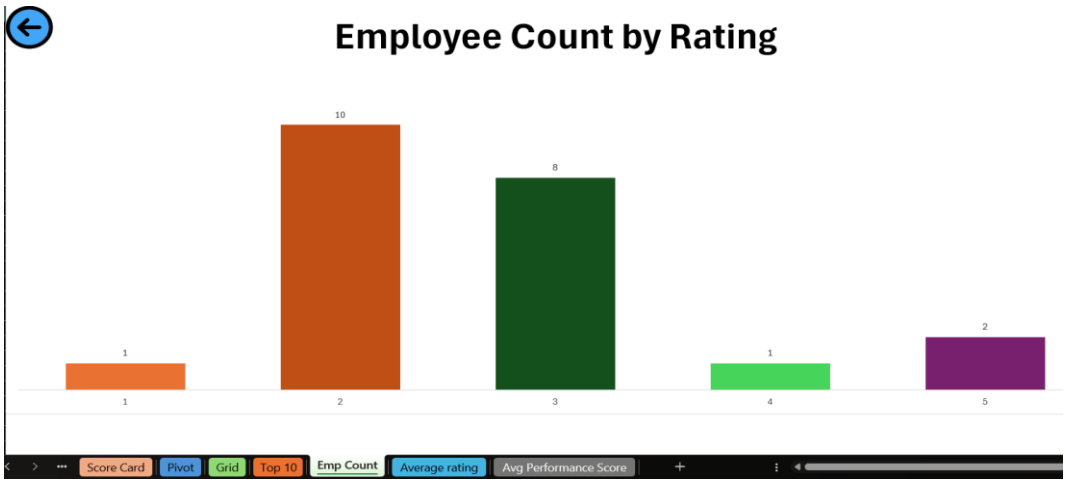




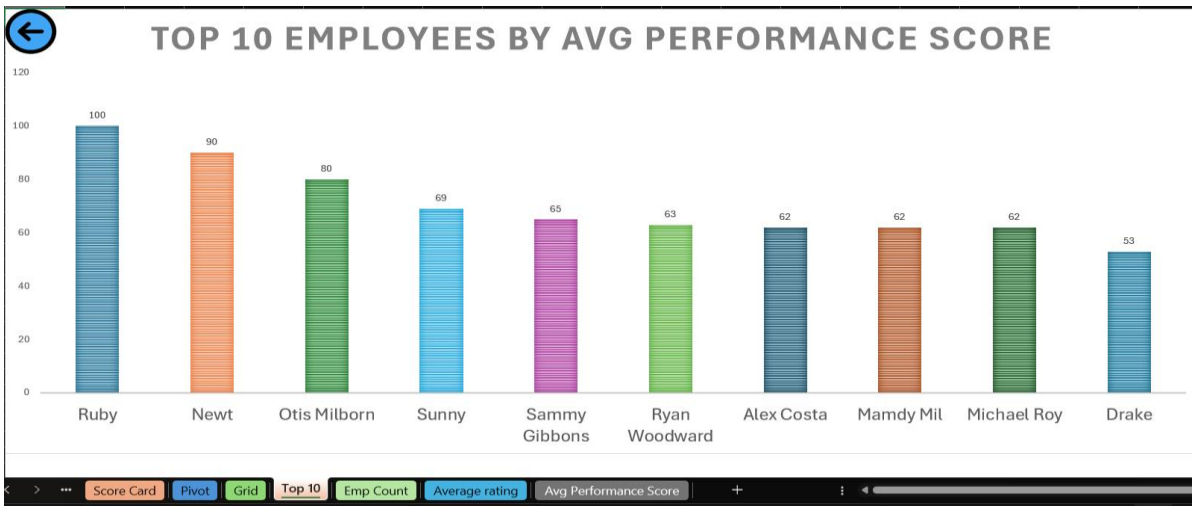
SECTION 1



SECTION 2



SECTION 3



SECTION 4

Pivot Tables

Row Labels	Average of Performance Score
Roy	43
Manav	56
Aditya	49
Boman	68
Grand Total	**54**

Row Labels	Average of Rating
Roy	2.2
Manav	2.7
Aditya	2.5
Boman	3.4
Grand Total	**2.7**

Row Labels	Count of Emp Name
1	1
2	10
3	8
4	1
5	2
Grand Total	**22**

Row Labels	Average of Performance Score
Ruby	100
Newt	90
Otis Milborn	80
Sunny	69
Sammy Gibbons	65
Ryan Woodward	63
Alex Costa	62
Mamdy Mil	62
Michael Roy	62
Drake	53
Grand Total	**71**

Dashboard | Pivot | Score Card | Grid

Score Card made with collected data

Employee Performance and Rating Card-2024

Emp ID	Emp Name	Supervisor Name	Accountability	Integrity	Communication Skills	Collaboration	Problem Solving Skill	Job Competence	Work Quality	Innovation and Creativity	Adaptability	Professional Knowledge	Performance Score	Rating
10001	Drake	Roy	✓	✓	✓	×	×	×	×	×	✓	✓	53	3
10002	Johan	Roy	✓	×	✓	✓	×	×	✓	×	×	✓	34	2
10003	Harry	Roy	×	✓	×	✓	×	✓	×	×	×	×	44	2
10004	Tamika Barajas	Roy	×	×	✓	×	×	×	×	✓	×	✓	18	1
10005	Sammy Gibbons	Roy	✓	✓	✓	×	✓	×	✓	×	✓	×	65	3
10006	Owain Oneil	Roy	×	×	×	×	✓	✓	×	✓	×	✓	42	2
10007	Ryan Woodward	Manav	×	✓	✓	✓	×	✓	✓	×	✓	×	63	3
10008	Aidan Appleton	Manav	✓	×	✓	×	×	×	✓	✓	×	✓	36	2
10009	Mamdy Mil	Manav	✓	✓	×	✓	×	×	✓	✓	✓	×	62	3
10010	Michael Roy	Manav	×	✓	✓	×	✓	×	×	✓	✓	✓	62	3
10011	Dania Guthrie	Manav	✓	×	✓	✓	×	✓	✓	×	×	×	41	2
10012	Salman Habib	Manav	×	✓	×	✓	✓	×	×	×	✓	×	49	2
10013	Otis Milborn	Manav	✓	✓	✓	×	✓	✓	✓	×	✓	×	80	4
10014	Caspar Becker	Aditya	×	✓	×	✓	×	×	×	✓	✓	✓	52	3
10015	Alex Costa	Aditya	×	✓	✓	✓	×	✓	×	✓	✓	×	62	3
10016	Johnny	Aditya	×	×	×	✓	✓	✓	×	✓	×	×	39	2
10017	Grace	Aditya	✓	×	✓	×	×	×	✓	✓	✓	✓	44	2
10018	Ruby	Boman	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100	5
10019	Tommy	Boman	×	✓	×	×	×	✓	×	✓	×	×	46	2
10020	Newt	Boman	✓	✓	×	✓	✓	✓	✓	×	✓	✓	90	5
10021	Sam	Boman	✓	×	✓	×	×	×	✓	✓	×	✓	36	2
10022	Sunny	Boman	✓	✓	✓	✓	✓	×	×	✓	✓	×	69	3

Dashboard | Pivot | Score Card | Grid

Data Validation Grid

Parameters	Score
Accountability	10
Integrity	24
Communication Skills	3
Collaboration	5
Problem Solving Skill	12
Job Competence	15
Work Quality	8
Innovation and Creativity	7
Adaptability	8
Professional Knowledge	8
Total	**100**

Score	Rating
0	1
20	2
50	3
80	4
90	5

Symbols

✓

✗