NETAJI SUBHAS UNIVERSITY OF TECHNOLOGY

BUSSINESS INTELLIGENCE PROJECT ON
DATA PROFESSIONAL SURVEY
(EAEPE67)

SUBMITTED BY: **SUBMITTED TO:**

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<u>ACKNOWLEDGEMENT</u>

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We would like to thank all the professors and friends of NSUT for their encouragement and support in our project.

Last but not the least, we are greatly indebted to our parents and siblings, for their unconditional love and support which made it possible for us to finish this work.

<u>CERTIFICATE</u>

This is to certify that the project entitled, **"Data Professional Survey"** submitted by **Dhruv** is a record of bonafide work carried out by him, in the department of Electronics & Communication Engineering, **Netaji Subhas University of Technology**, in partial fulfillment of requirements for the award of the degree of Bachelor of Technology (B.Tech.) in **Electronics & Communication Engineering (Artificial Intelligence & Machine Learning)**, in the academic year 2020- 2024. **Ms. Seemanjali**, Netaji Subhas University of Technology (NSUT).

Ms. Seemanjali

Netaji Subhas University of Technology (NSUT)

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ABSTRACT

In this business intelligence project, the focus is on conducting a Data Professional Survey using Power BI, a powerful data visualization and analytics tool. The primary objective of this project is to gather and analyze data related to data professionals, their roles, skills, and industry trends. This survey aims to provide valuable insights to businesses and organizations looking to understand the evolving landscape of data professionals in today's data-driven world.

Power BI is the chosen tool for data visualization and analysis in this project. It offers a user-friendly interface for creating interactive and insightful dashboards and reports. These dashboards will provide a visual representation of the survey results, making it easier for stakeholders to understand and interpret the data.

The project will also involve the creation of dynamic reports that allow users to explore the data from various angles. Users can filter and drill down into the data to gain a deeper understanding of the survey results, helping organizations make data-driven decisions about hiring, training, and workforce planning.

Additionally, the use of Power BI's advanced features, such as predictive analytics and machine learning integration, may be explored to identify trends and patterns that could be useful for future decision-making.

Ultimately, the Data Professional Survey using Power BI will empower businesses and organizations to make informed decisions about their data professional workforce, improving recruitment strategies, identifying skill gaps, and staying ahead in the ever-evolving world of data and analytics. This project highlights the potential of business intelligence and data visualization tools like Power BI in transforming raw data into valuable insights for strategic decision-making.

<u>INTRODUCTION</u>

The "Data Professional Survey using Power BI" project represents a significant endeavor in the field of business intelligence. In an era where data is considered the lifeblood of modern organizations, understanding the landscape of data professionals and their evolving roles is crucial. This project aims to leverage the power of Power BI, a robust data visualization and analytics tool, to conduct a comprehensive survey of data professionals and extract meaningful insights from the gathered data.

The project's significance lies in its potential to offer valuable insights to businesses and organizations seeking to navigate the complex world of data-driven decision-making. By conducting a survey specifically tailored to data professionals, this project aims to shed light on various aspects of their roles, educational backgrounds, experience, and specialized skills. These insights can be pivotal in shaping human resource strategies, optimizing workforce planning, and identifying areas for skill development within the organization.

The introduction of the project sets the stage for the subsequent phases, which include questionnaire design, data collection, data cleaning, and the central focus of the project: the utilization of Power BI. Through this tool, the project aims to create interactive and visually compelling dashboards and reports that enable stakeholders to explore the survey data, draw meaningful conclusions, and drive data-driven decisions.

Furthermore, the project may delve into advanced data analysis techniques, such as predictive analytics and machine learning integration, to uncover hidden trends and patterns that might otherwise go unnoticed. This project serves as a testament to the potential of business intelligence and data visualization tools like Power BI in transforming raw data into actionable insights that can be instrumental in strategic decision-making.

# **THEORY**

What is Power BI?

Power BI is a business analytics service provided by Microsoft that lets you visualize your data and share insights. It converts data from different sources to build interactive dashboards and Business Intelligence reports.

The Architecture of Microsoft Power BI

To work together, Power BI is a business network that includes many technologies. It offers excellent solutions for business intelligence. There are four phases in Power BI Architecture. Let's talk about these four measures that provide detailed information about each of them.

- Sourcing Data
- Transforming Information
- Report & Publish
- Creating a Dashboard
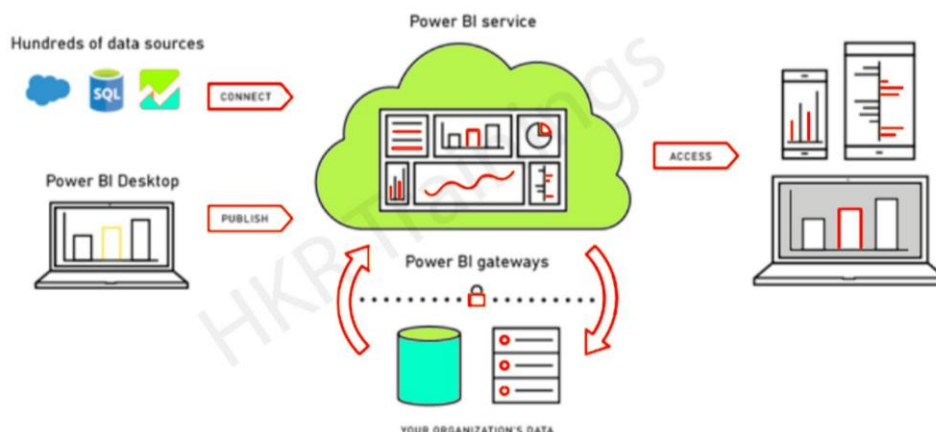
Power BI Components

- Power Query
- Power Pivot
- Power View
- Power Map
- Power Q&A
- Power BI Desktop
- Power BI Website
- Power Mobile Apps
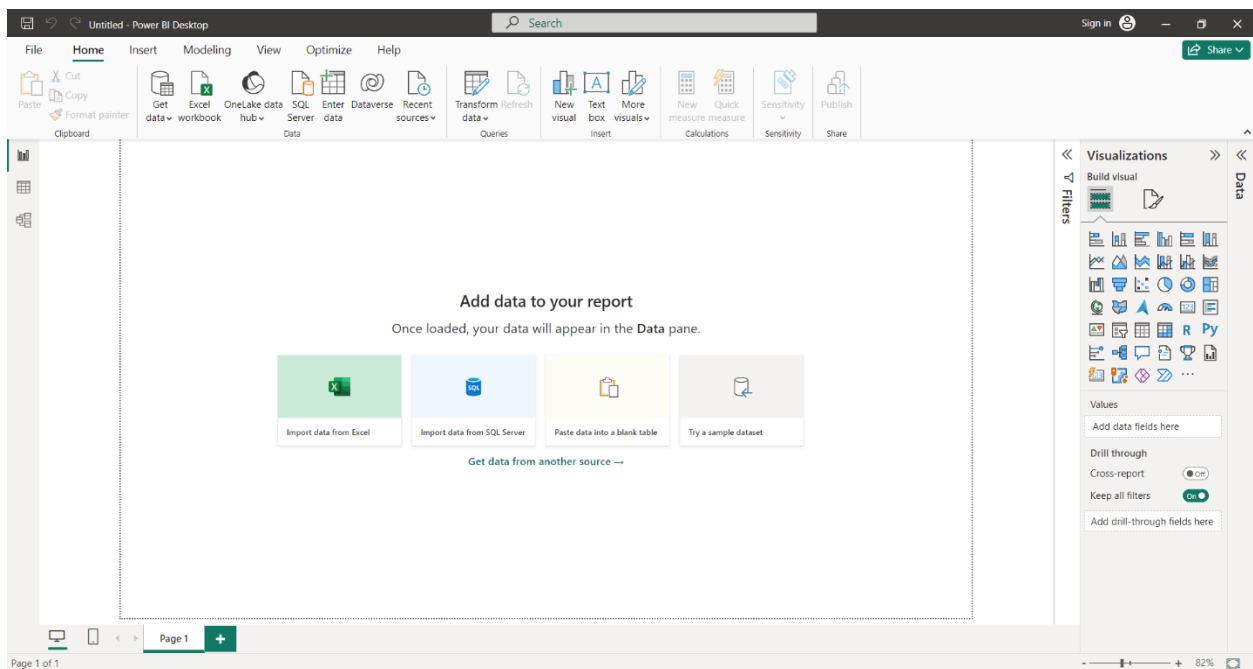

Advantages Of Power BI

1. User-friendly interface: Power BI has an intuitive interface allowing users to visualize and analyse data easily.

2. Data integration: Power BI allows users to easily integrate data from various sources, including Excel, SQL Server, and cloud-based sources like Azure and Salesforce.

3. Customizable dashboards: Users can create customized dashboards and reports to display data in a way that is meaningful to them.

4. Real-time data: Power BI supports real-time data processing, which means users can view up-to-date data in their dashboards and reports.
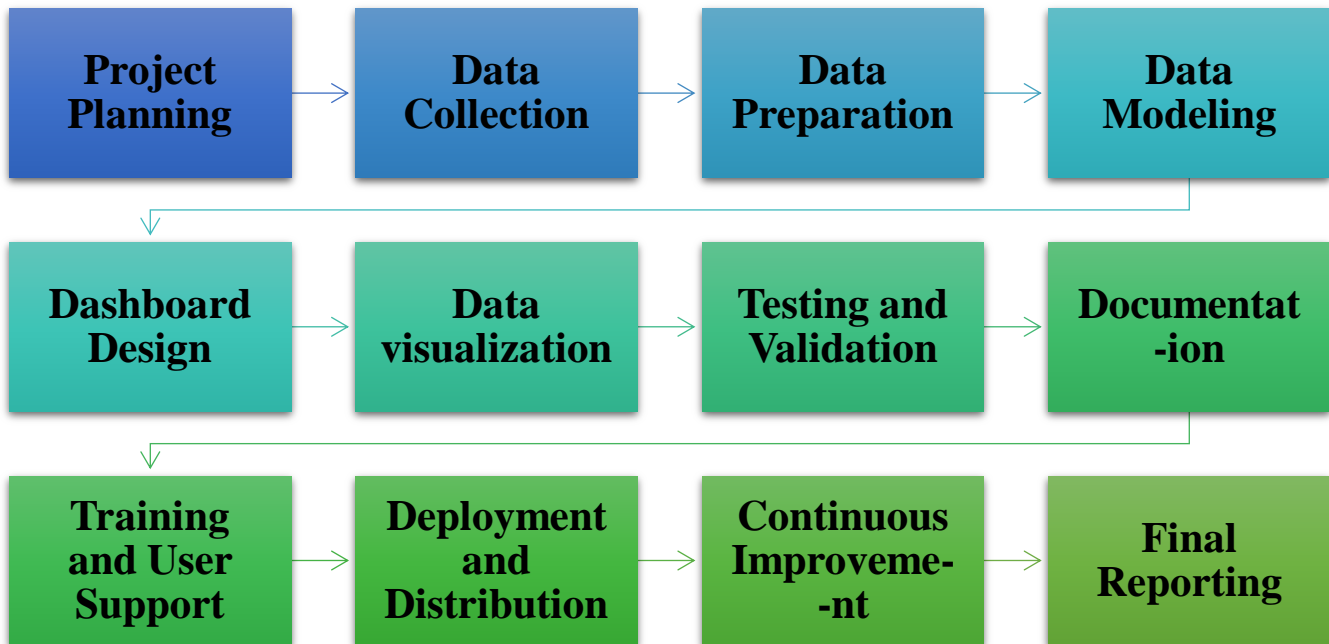
5. Collaboration: Power BI allows users to share their dashboards and reports with others, making collaborating on data analysis projects easy.

Disadvantages Of Power BI

1. Limited data processing capabilities: Power BI is not designed for heavy-duty data processing and may struggle with large datasets or complex queries.

2. Limited customization options: While Power BI offers a range of customization options, users may find that they are limited in their ability to create truly unique visualizations and reports.

3. Cost: Power BI is not a free tool, and users may need to pay for additional features or storage space.

METHODOLOGY

Project Planning	→	Data Collection	→	Data Preparation	→	Data Modeling

Dashboard Design	→	Data visualization	→	Testing and Validation	→	Documentat -ion

Training and User Support	→	Deployment and Distribution	→	Continuous Improveme- -nt	→	Final Reporting

1. Project Planning:
    - Define clear project objectives and goals, including what insights you aim to gain from the Data Professional Survey.
    - Establish a project timeline with milestones and deadlines.
    - Identify key stakeholders and their roles in the project.

2. Data Collection:
    - Develop a comprehensive survey questionnaire that captures relevant information about data professionals, their roles, skills, and experience.
    - Determine the target audience for the survey and the sampling method.
    - Administer the survey and collect responses.

3. Data Preparation:
- Clean the collected data by addressing missing values, duplicates, and outliers.
- Transform the data to make it suitable for analysis. This may involve data normalization, standardization, or aggregation.
- Import the cleaned and transformed data into Power BI.

4. Data Modeling:
- Define relationships between different data tables within Power BI to create a data model.
- Create calculated columns and measures to derive additional insights from the data.

5. Dashboard Design:
- Design the layout and structure of the dashboards. Identify key visualizations, such as charts, tables, and maps, that will best represent the survey data.
- Ensure that the dashboard is user-friendly and provides an intuitive user experience.

6. Data Visualization:
- Create visualizations in Power BI based on the survey data. Use appropriate chart types to effectively convey the information.
- Implement interactive features, such as filters, slicers, and drill-through functionality to allow users to explore the data.

7. Testing and Validation:
- Test the dashboards to ensure data accuracy, visualization quality, and functionality.
- Validate the results with domain experts or stakeholders to ensure the insights align with their expectations and needs.

8. Documentation:
  - Document the project's methodology, data sources, data cleaning and transformation steps, and dashboard creation process for future reference.

9. Training and User Support:
  - Provide training to users who will interact with the Power BI dashboards.
  - Offer user support and documentation to help users navigate and make the most of the dashboards.

10. Deployment and Distribution:
  - Publish the Power BI dashboards to the Power BI service or other appropriate platforms.
  - Establish distribution channels to ensure that the relevant stakeholders can access and utilize the dashboards.

11. Continuous Improvement:
  - Gather feedback from users and stakeholders for future enhancements.
  - Continuously monitor and update the dashboards as needed to keep them relevant and up to date.

12. Final Reporting:
  - Prepare a final report that summarizes the project, its objectives, methodologies, and key insights.
  - Present the report to stakeholders to share the results of the Data Professional Survey.
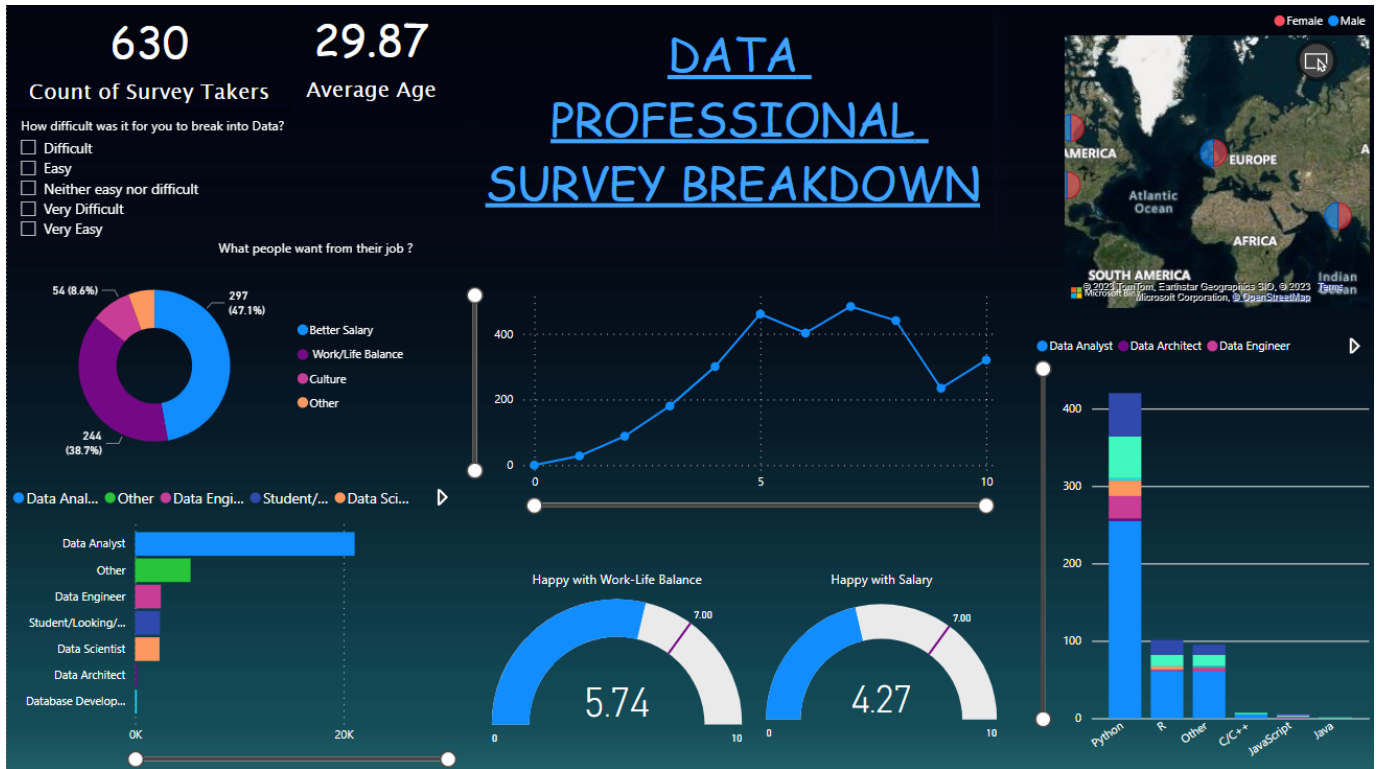
CONCLUSION

In conclusion, the Business Intelligence project on the Data Professional Survey, executed through the dynamic capabilities of Power BI, has proven to be a valuable tool for organizations seeking data-driven insights into their data professional workforce. By collecting, cleaning, and visualizing survey data, the project has facilitated informed decision-making regarding hiring, training, and workforce planning. The user-friendly dashboards and reports produced by Power BI have empowered stakeholders to explore and understand the nuances of data professional roles, skills, and industry trends. Furthermore, the optional integration of advanced analytics has unveiled hidden patterns, providing a strategic edge. This project underscores the pivotal role of business intelligence and data visualization tools in transforming raw data into actionable intelligence for enhancing organizational competitiveness in the ever-evolving data landscape. It serves as a testament to the power of data in shaping the workforce of tomorrow.

<u>REFERENCES</u>

- I would like to express my gratitude to my teachers and mentors for their invaluable guidance and support throughout this project.

- I extend my appreciation to Microsoft for developing Power BI, a critical component of this project, which enabled the creation of insightful dashboards and reports.

- https://www.youtube.com/watch?v=6cV3OwFrOkk&list=PLdOK nrf8EcP2ivbQIcVuknjdlUqkoprKo&index=1

- https://www.youtube.com/watch?v=pixlHHe_lNQ