



SHORT-TERMINTERNSHIP



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VISAKHAPATNAM**

Acknowledgements

I would sincerely like to thank Apsche for providing me this short - term internship which helped me gain practical Experience and Knowledge on data analytics.

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CHAPTER 1 :- EXECUTIVE SUMMARY

Description of the sector of Business & its organization:

Smart bridge operates in the data analysis sector, providing innovative solutions to enhance business intelligence. The organization leverages Power BI to empower clients with actionable insight, enabling data-driven decision making.

Learning objective and Outcomes:-

- 1, understand power BI fundamentals, 2, Data modeling
- 3, proficiency in power BI Tools (4) Data cleaning transformation 5, Data visualization 6, Report design and sharing

Summary of internship activities:

- 1, Attending live training sessions and project-mentoring sessions.
- 2, Selection of topic "Comprehensive analysis of Blood samples using power Bi" and gathering, cleaning and analyzing it related datasets in Excel
- 3, Team information and assignment of tasks to team members.
- 4, Designing & Developing interactive dashboards, story, report on project using power BI
- 5, Drafting a project video demonstration and preparation of final report.

CHAPTER-2 : Overview of the organization:-

Smart Bridge is a platform that offers virtual internship to the students. The platform's goal is to prepare students for the job market by establishing a cooperative relationship between Industry & Academic. Smart Bridge partners with companies such as Google to offer virtual internships. The internships provide students with hands-on experience with the latest technologies, and enable project-based learning. Smart Bridge's flagship event is the "summer internship program". The program develops student skills in "internship program" i.e. 1) Artificial Intelligence, 2) Machine Learning, 3) Internet of Things.

Organization's objective :-

Smart Bridge's main objective is to bridge the existing gaps between prevailing industry standards and what the academics offer to the graduates while passing out of university. Smart Bridge offers suitable skill development of training to the young talent before onboarding their first job. Their skill development programs are designed considering the present demand skills in the industry. We thereby work along the time to offer best programs that help the students to gain practical knowledge and hands-on training.

to learn skills of the future therefore, the main objective of smart bridge is providing internship for every student, promote industry approved professional electives & become a talent factory of India by 2026

CHAPTER 3: Internship part:-

- Description of the activities / responsibilities undertaken
- 1, Registering with APSCHE Smart interz & Enrolling for Smart bridges data analytics Course i.e live training sessions as per scheduled training Calender
 - 2, participating weekly Quiz & Completing weekly assignments with respect to data analytics.
 - 3, Team formation & selection of project unveiling diseases trends through patient using power bi
 - 4, Gathering, cleaning & analyzing the Excel data sets of the project topic - unveiling diseases trends through patient using power bi
 - 5, Attending project-mentoring sessions and designing and developing interactive dashboard, report on the project topic using power BI.
 - 6, web integration of above project deliverables with team's web page using Visual studio Code, Drafting a project video demonstration and preparation of final report
 - 7, Submission of team project via uploading the project files in Github repository of the team.

CHAPTER 6: OUTCOMES DESCRIPTION

Describe the work environment you have experienced (in terms of people interactions, facilities available and maintenance, clarity of job roles, protocols, procedures, processes, discipline, time management, harmonious relationships, socialization, mutual support and teamwork, motivation, space and ventilation, etc.)

People interactions :- Effective Communication is a key, as team members need to ensure that data interpretations are accurate and that insights are clearly conveyed to both technical and non-technical stakeholders.

Facilities Available and Maintenance :- facilities are maintained with a strong emphasis on data security, ensuring that patient data is stored and processed in compliance with healthcare regulations like HIPAA.

clarity of Job Roles :- Job Roles are well-defined, with each team member having a specific focus, such as data collection, analysis, visualization, or interpretation. Clear roles help ensure that each aspect of the analysis process is handled by an expert in that area.

Protocols, procedures, and processes :-

Procedures are designed to comply with health care regulations, ensuring that patient data is handled ethically and legally, and consistently followed to maintain the quality of analysis.

Discipline and Time Management :-

Discipline is maintained through meticulous attention to detail, as even minor errors in data analysis can lead to significant consequences.

Harmonious Relationships and Socialization :-

Social interactions tend to be focused on work-related discussions, with some opportunities, with some team-building activities that foster a collaborative spirit.

Mutual Support and Teamwork :-

Team members often engage in collaborative problem solving, sharing knowledge and expertise to overcome challenges in data analysis or interpretation.

Motivation :-

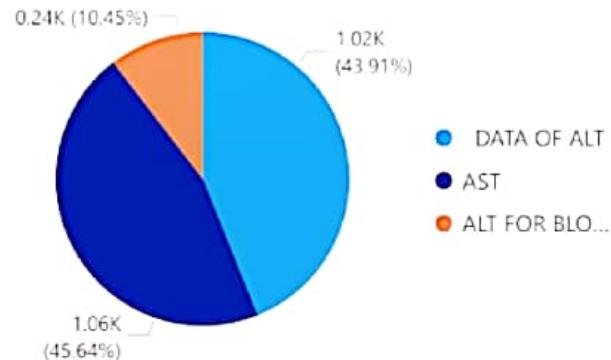
Achievements are often recognized through formal and informal channels, reinforcing the value of each team member's contributions.

Space and Ventilation :-

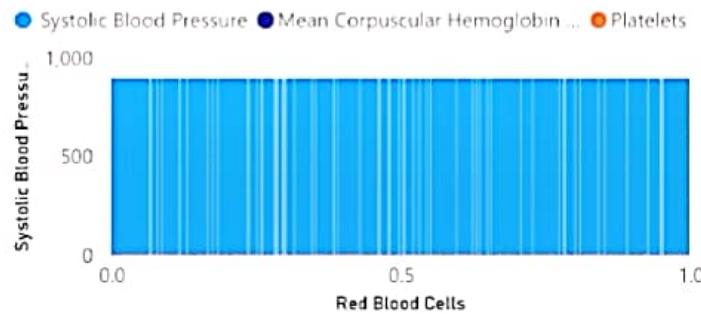
The need for concentration, workspaces often include quiet zones where analysts can focus without distractions.

UNVEILING DISEASE TRENDS THROUGH PATIENT ANALYSIS

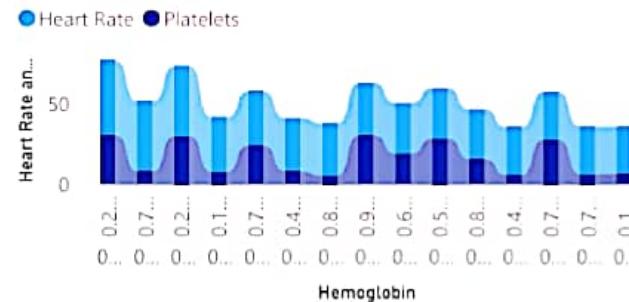
DATA OF ALT, AST and ALT FOR BLOOD TEST



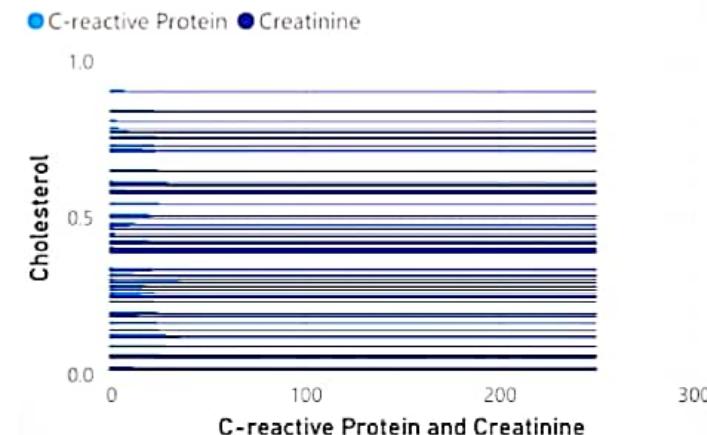
Systolic Blood Pressure, Mean Corpuscular Hemoglobin Concentration and Platelets by Red Blood Cells



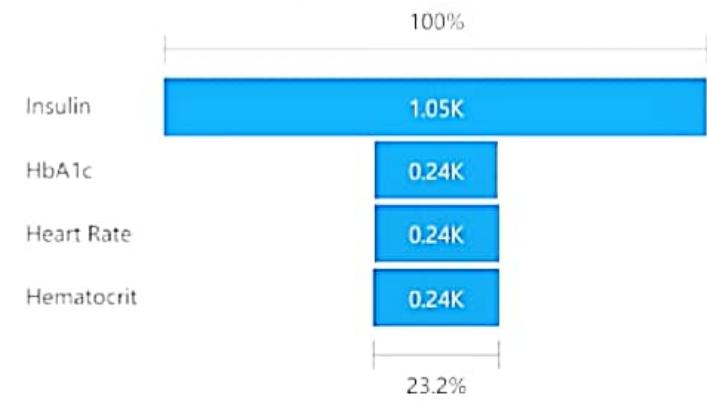
Heart Rate and Platelets by Glucose and Hemoglobin



C-reactive Protein and Creatinine by Cholesterol

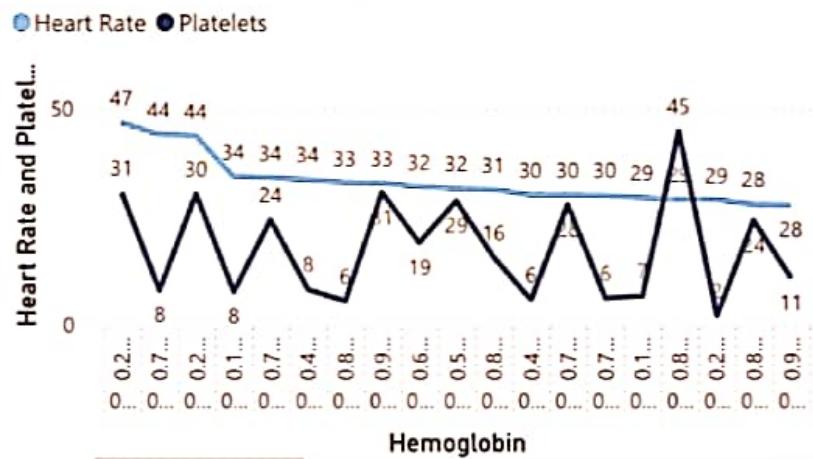


Measurement of Insulin, HbA1c, Heart Rate, Hematocrit and Hemoglobin of blood test

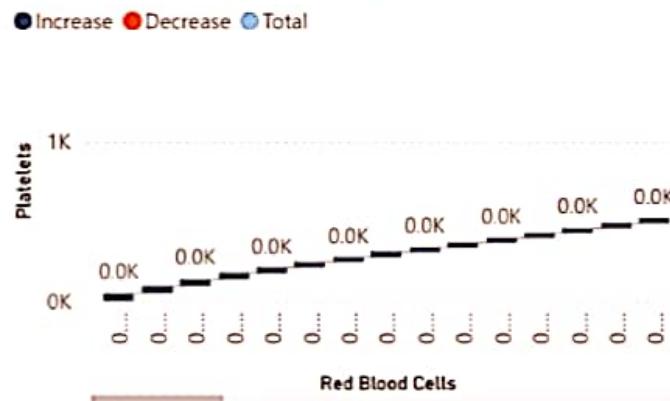


UNVEILING DISEASES TRENDS THROUGH PATIENT ANALYSIS REPORT

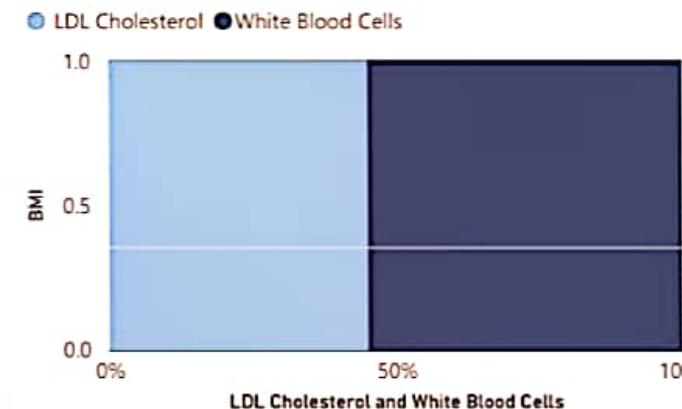
Heart Rate and Platelets by Glucose and Hemoglobin



Platelets by Red Blood Cells



LDL Cholesterol and White Blood Cells by BMI



A dataset to check the health, whether the person has a specific disease or he is well, based on blood samples or parameters, the data is hand madden, you can use it just for learning, i searched about the percentage of each parameter and what will happen if this parameter high or low, and which disease you might have if this parameter high or low, based on all this information and searches i created this dataset just for learning and a project idea purpose

ACTIVITY LOG FOR THE FIRST WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1 03/07/24	Introduction of data Analysis	Analysis of the topic	
Day - 2 04/07/24	Agenda and understanding Countumes	clean view of business problem and solutions	
Day - 3 05/07/24	Analyzing and implementing data	putting the data in visual form	
Day - 4 05/07/24	Data Analytics tools and technologies	learned about different tools and insights	
Day - 5 05/07/24	Data Analytics Applications	where it is used in different sectors	
Day - 6 06/07/24	Researched the additional information online	additional information about DA	

WEEKLY REPORT

WEEK - 1 (From Dt...3/7/24 to Dt...5/7/24.....)

Objective of the Activity Done: Introduction to Data Analytics

Power BI

Detailed Report: ~~An~~ In the first week, we were introduced to the fundamentals of data analytics, emphasizing the role of data-driven decision-making in modern businesses. The sessions covered the basis of data analysis, different types of data, and the importance of data visualization. We also explored Power BI, understanding its interface, features, and how it integrates with other Microsoft products.

The week concluded with a hands-on session on loading and transforming data in Power BI.

ACTIVITY LOG FOR THE SECOND WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1 08/07/24	Data analytics application	learned about different tools and insight	
Day - 2 09/07/24	Data analytics application	where it is used in different section	
Day - 3 10/07/24	Data analytics process and steps in DA	learned about data clearing and processing	
Day - 4 11/07/24	Data analytics process and steps in DA	learn about data clearing and processing	
Day - 5 12/07/24	Types of Analytics	different types in DA in clear way	
Day - 6 13/07/24	Revision on given topics	Revised about DA	

WEEKLY REPORT

WEEK - 2 (From Dt..2/1/24... to Dt..12/7/24..)

Objective of the Activity Done: Data transformation and Modelling

Detailed Report: The second week focused on data transformation and modeling within Power BI.

We learned to clean, reshape and prepare data using Power Query Editor. The training covered essential functions like filtering, merging, and appending datasets.

Additionally, we were introduced to data modeling concepts such as relationships, Cardinality, and data hierarchies.

The practical sessions helped reinforce the concepts by allowing us to create and manage data models effectively.

ACTIVITY LOG FOR THE THIRD WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1 15/07/24	Business problems and the solutions (practice)	challenges faced in organization	
Day - 2 16/07/24	Business problems and the solutions (practice)	challenges faced in organization	
Day - 3 18/07/24	power BI in action	visible insight Sales for Cost	
Day - 4 19/07/24	BI Architecture	learned about structure	
Day - 5 19/07/24	BI Architecture	learned about structure	
Day - 6 20/07/24	Revision on given topics	Revised about DA	

WEEKLY REPORT

WEEK - 3 (From Dt. 15/7/24... to Dt. 19/7/24...)

Objective of the Activity Done: Data visualization Techniques

Detailed Report: In the third week, the emphasis was on data visualization techniques using Power BI.

We explored various types of charts, graphs, and maps that can be created in Power BI to visualize data insights.

The sessions included best practices for selecting the right visualizations based on the type of data and the message we want to convey. We also learned about customizing visual elements, using themes, and enhancing reports with interactive features like slicers and drill-throughs.

ACTIVITY LOG FOR THE FORTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1 26/07/24	Data to insights flow in Power BI	learned about data and model view	
Day - 2 23/07/24	tables and merges	learned about the kinds in merge	
Day - 3 24/07/24	tables and merges	learned about the kinds in merge	
Day - 4 25/07/24	ETL tools in Power Query	whilize power BI data flows	
Day - 5 26/07/24	ETL tools in Power Query	whilize power BI data flows	
Day - 6 27/07/24	Researched the additional information Online	additional information about BI	

WEEKLY REPORT

WEEK - 4 (From Dt. 27/7/24... to Dt. 26/7/24...)

Objective of the Activity Done: Advanced Analytics and DAX

Detailed Report: week four delved into advanced analytics and Data analysis Expression (DAX) in power BI.

We learned how to create calculated columns, measures, and custom tables using DAX. The training covered complex DAX functions such as time intelligence, filtering, and aggregation.

We also explored advanced analytical techniques like trend analysis, forecasting, and what if scenarios.

The week ended with exercises to build dynamic reports using DAX - driven insights.

ACTIVITY LOG FOR THE FIFTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1 29/07/24	data sources dash boards and insights	learned how they are used in BI	
Day - 2 30/07/24	data collection and data cleaning	learned about the process in DA	
Day - 3 31/07/24	data collection and data cleaning	learned about the process in DA	
Day - 4 01/08/24	data Analytics Expressions (DAX)	learned about the expression and functions	
Day - 5 02/08/24	data Analytics Expressions (DAX)	learned about the expression about functions	
Day - 6 03/08/24	discussion Regar - ding project	discussed about project	

WEEKLY REPORT

WEEK - 5 (From Dt. 29.7.24.. to Dt. 2|8|24.)

Objective of the Activity Done: Power BI Service and collaboration

Detailed Report: The fifth week covered the Power BI Service and its collaboration features.

We learned how to publish reports to the Power BI service, share dashboards, and collaborate with team members in real time. The sessions emphasized data security, row-level security (RLS), and managing workspaces.

We also explored Power BI's integrations with other Microsoft tools, like Excel, Teams, and SharePoint, making it easier to collaborate and share insights across the organization.

ACTIVITY LOG FOR THE SIXTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1 05/08/24	filter functions in DAX	different filters in DAX	
Day - 2 05/08/24	filter function in DAX	different filters in DAX	
Day - 3 06/08/24	preparation for grand assessment test	preparation for assessment test	
Day - 4 06/08/24	preparation for grand assessment test	preparation for assessment test	
Day - 5 07/08/24	grand assessment test	given the grand assessm-ent test	
Day - 6 09/08/24	Researched the additional infor- mation online	additional information about BI	

WEEKLY REPORT

WEEK - 6 (From Dt..5/8/24.. to Dt...9/8/24..)

Objective of the Activity Done: Best practices and Industry applications.

Detailed Report: In the final week of internship clauses, we focused on best practices in data analytics and real-world applications of Power BI across various industries.

We discussed key strategies for optimizing data models, enhancing report performance, and maintaining data governance.

The session also included case studies showcasing how companies use Power BI for Business Intelligence, sales analysis, financial reporting, and operational efficiency. The week wrapped up with an overview of the up-

-Coming project work, we wrote a grand assessment test.

ACTIVITY LOG FOR THE SEVENTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1 16/08/24	Formation of team	clear view on team	
Day - 2 17/08/24	project scope and objectives	clear view on project assigned	
Day - 3 14/08/24	Aggregation of public reports	Segregation of data analysis	
Day - 4 15/08/24	Configured public refreshes	Reviewed self on dataset	
Day - 5 16/08/24	feed back on accuracy with published report	clear view on outcomes of reports	
Day - 6			

WEEKLY REPORT
WEEK-7 (From Dt. 12/8/24 to Dt. 16/8/24.)

Objective of the Activity Done:

Project work data analysis and ^{visualisation}

Detailed Report:

The seventh week marked the beginning of the project phase. We started by defining the project scope, objectives and deliverables.

The project involved analyzing a dataset provided by Smartintenz, cleaning and transforming the data, and building a data model.

Our team focused on identifying key metrics, trends and patterns that could drive business decisions.

The initial reports and dashboard were created to visualize these insights, using the skills and techniques learned over the past six weeks.

ACTIVITY LOG FOR THE EIGHTH WEEK

Day & Date	Brief description of the daily activity	Learning Outcome	Person In-Charge Signature
Day - 1 19/08/24	Presenting actionable insights	Clear view on Dictional representation	
Day - 2 20/08/24	Presenting the dashboards on reports	Representing the final output	
Day - 3 21/08/24	Collaboration file uploading	Allotting work to all members in team	
Day - 4 22/08/24	Reviewing on dashboard, report	Clearview on work done in DA	
Day - 5 23/08/24	Submission of project	Submitted to mentors	
Day - 6			

WEEKLY REPORT

WEEK 8 (From Dt 19/8/24 to Dt 23/8/24)

Objective of the Activity Done:

Finalization and presentation

Detailed Report:

To the final week, we completed the project by refining our reports and dashboards, ensuring they met the project requirements.

We focused on enhancing the visual appeal and usability of the dashboards by adding interactive elements and ensuring the data was accurately represented. The week culminated with a presentation to the Smart Interns team where we showcased our findings, explained the methodologies used, and demonstrated how the insights could be applied to solve real business problems.

The project was well received, marking a successful conclusion to be the internship.

Describe the real time technical skills you have acquired (in terms of the job-related skills and hands on experience)

REAL TIME TECHNICAL SKILLS :-

DATA ACQUISITION AND PREPARATION :-

Acquired skills in integrating various data sources, such as Electronic Health Records (EHRs), lab results, and patient demographic information, into Power BI.

This involves connecting to multiple data bases, using APIs, and importing large datasets for analysis.

DATA ANALYSIS :-

Gained proficiency in using Power BI's tools to perform EDA, identifying patterns, trends, and anomalies in patient trends, and anomalies in patient data. This involves using Power BI's DAX (Data Analysis Expressions).

DATA VISUALIZATION :-

Developed the ability to design and create interactive dashboards in Power BI that visualize complex datasets in an intuitive and accessible manner. This includes the use of various visualizations like bar charts, line charts, scatter plots, heatmaps, and geospatial maps. That go beyond the standard options, utilizing third-party visualizations.

TREND ANALYSIS AND FORECASTING:-

Acquired skills in analysing time series data to identify trends over time, such as the program of disease outbreaks or the effectiveness of treatments.

REPORTING AND PRESENTATION:-

Gained experience in creating dynamic reports that can be easily shared with stakeholders, allowing them to interact with data through slicers and filters to explore different scenarios.

DATA SECURITY AND COMPLIANCE:-

Experienced in setting up access controls within Power BI to ensure that only authorized personnel can view or interact with specific datasets, maintaining confidentiality and data integrity.

COLLABORATION AND WORKFLOW MANAGEMENT:-

Developed skills in automating workflows in Power BI, such as setting up scheduled data refreshes, automated report distribution, and integration with other tools like Microsoft Teams or SharePoint for collaboration.

Describe the managerial skills you have acquired (in terms of planning, leadership, team work, behaviour, workmanship, productive use of time, weekly improvement in competencies, goal setting, decision making, performance analysis, etc.

PLANNING:-

Strategic planning Developed the ability to create comprehensive project plans that outline the objectives, timelines, resources, and milestones required to analyze patient data and uncover disease trends. This involves setting clear goals, organizational priorities.

LEADERSHIP:-

Visionary leadership Acquired the skill to articulate a clear vision for the project inspiring and guiding the team towards achieving the desired outcome. This involves communicating the importance of the work setting high standards and motivating the team to excel.

TEAMWORK:-

Fostering collaboration gained experience in fostering a collaborative team environment. This includes encouraging open communication, shared responsibility, together to achieve common goals to Everyone works.

BEHAVIOR AND WORKMANSHIP :-

Professionalism Developed a strong sense of professionalism, Ensuring that all work is conducted with integrity, respect and a commitment to Excellence.

PRODUCTIVE USE OF TIME :-

Time management Acquired the ability to manage time effectively, Balancing the demands of multiple tasks and Ensuring that deadlines are met without compromising quality.

WEEKLY IMPROVEMENT IN COMPETENCIES :-

Skills Enhancement implemented regular training sessions and workshops to enhance the team's competencies in areas such as advanced power BI functions, data security, and statistical analysis.

GOAL SETTING :-

Smart goals Developed the ability to set specific, Measurable, Achievable, Relevant and Time-Bound (SMART) goals for the project and individual team members. clear understanding to achieved goals.

Describe how you could improve your communication skills (in terms of improvement in oral communication, written communication, conversational abilities, confidence levels while communicating, anxiety management, understanding others, getting understood by others, extempore speech, ability to articulate the key points, closing the conversation, maintaining niceties and protocols, greeting, thanking and appreciating others, etc.,)

ORAL COMMUNICATION:-

Practice clarity and conciseness focus on speaking clearly and concisely, especially when explaining technical details to non-experts. Regular practice, such as explaining complex concepts to peers. (or) Even to non-technical friends, improve clarity.

WRITTEN COMMUNICATION:-

Improve Technical writing focus on improving the clarity and precision of technical writing particularly in reports and documentation.

CONVERSATIONAL ABILITIES:-

Active listening improve active listening skills by paying close attention to what others are saying asking clarifying questions, and summarizing their points to ensure understanding. This will enhance the quality of conversations and help in better collaboration.

CONFIDENCE LEVELS WHILE COMMUNICATING:
positive visualization use techniques like positive visualization before speaking, imagining successful communication scenarios to reduce anxiety and build confidence.

ANXIETY MANAGEMENT:-

Desensitization gradually expose oneself to more challenging communication situations, starting with small group settings and progressively moving to larger audiences, to reduce anxiety over time.

UNDERSTANDING OTHERS:-

Empathy Building improve awareness of cultural differences in communication styles, especially in a diverse work environment, to ensure that communication is respectful and inclusive.

GREETING, THANKING AND APPRECIATING:-

Personalization works on personalizing greetings and appreciations, acknowledging specific contributions or achievements, which can make others feel valued and respected.

Describe how could you enhance your abilities in group discussions, participation in teams, contribution as a team member, leading a team/activity.

ENHANCING ABILITIES IN GROUP DISCUSSIONS:-

Active listening improve active listening by fully concentrating on what others are saying, avoiding interruptions, and showing genuine interest in their contributions.

IMPROVING PARTICIPATION IN TEAMS:-

Sharing knowledge Increase participation by sharing relevant knowledge (or) insights that could benefit the team, such as recent trends in data analytics.

CONTRIBUTING AS A TEAM MEMBER:-

Supporting Team goals focus on aligning your contributions with the team's overall goals. This involves understanding the bigger picture and ensuring that your work focus on aligning your contributions with the team's overall goals.

LEADING A TEAM OR ACTIVITY:-

Setting clear objectives. Improve leadership abilities by setting clear, achievable objectives for the team, ensuring that everyone understands their work. Overall Project.

Enhancing abilities in group discussions, team participation, contribution, and leadership within the context of patient analysis using Power BI involves a combination of active listening,

proactive engagement, and effective communication. By focusing on these areas, I can become a more valuable team member and leader, contributing to the success of the project and fostering a collaborative, productive team environment. Continuous improvement in these areas will ensure that the team work efficiently, with a shared commitment to uncovering meaningful disease trends and delivering actionable insights.

Describe the technological developments you have observed and relevant to the subject area of training (focus on digital technologies relevant to your job role)

ADVANCEMENTS IN POWER BI :-

AI and machine learning integration power BI has increasingly integrated AI and machine learning capabilities, allowing for more advanced data analysis. Features like AI Insights, automated Machine learning (AutoML), and predictive analytics enable users to uncover trends, forecast outcomes, and generate insights from large datasets with greater accuracy.

ENHANCED DATA CONNECTIVITY :-

Power BI has expanded its range of data connectors, allowing seamless integration with various data sources, including cloud services (like Azure, AWS), on-premises databases, and external APIs.

This ensures that patient data from diverse systems can be easily aggregated and analyzed within Power BI.

NATURAL LANGUAGE QUERYING :-

The development of natural language processing (NLP) in Power BI allows users to interact with data using natural language queries. This makes it easier for non-technical users to extract insights and interact with data without needing deep knowledge of DAX (or) complex queries.

CLOUD COMPUTING AND DATA STORAGE :-

Cloud integration the adoption of cloud computing platforms such as Microsoft, Azure, AWS, and Google Cloud has transformed data storage and analytics.

DATA VISUALIZATION AND USER EXPERIENCE :-

Advanced visualization techniques the development of advanced visualization tools and custom visuals in Power BI has improved the ability to represent complex data in intuitive ways.

INTEROPERABILITY AND DATA STANDARDS :-

FHIR and HL7 Integration The adoption of health care data standards like Fast Health Care Interoperability Resources (FHIR) and Health Level 7 (HL7) has made it easier to integrate and analyze patient data from various systems.

Power BI's support for these standards allows for smoother integration with EHR systems, facilitating comprehensive patient data analysis.

PHOTOS & VIDEO LINKS

VIDEO DEMO :

<https://drive.google.com/file/d/1p96cgTSPQJS41sz-XpalpDwzzm3ZjgO/view?usp=drivesdk>