TREND ANALYSIS

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1. WHAT IS TREND ANALYSIS?

- Trend analysis is the process of analyzing historical data to identify patterns and predict future movements.

- It is commonly used in business intelligence (BI), financial forecasting, and performance management.

2. KEY FEATURES OF DATA WAREHOUSES FOR TREND ANALYSIS:

- **Historical Data Storage:** Stores years of data to enable long-term trend analysis.

- **Data Integration:** Combines data from different sources for comprehensive insights.

- **OLAP (Online Analytical Processing):** Enables fast querying and multi-dimensional analysis.

- **Data Aggregation:** Summarizes data at different levels (daily, monthly, yearly).

- **Time-Series Analysis:** Supports date-based analysis for seasonal trends and patterns.

3. STEPS FOR TREND ANALYSIS :

1.Define Objectives:

- Clarify the purpose of the analysis.
- Identify specific trends or metrics to investigate.

2.Data Extraction:

- Use ETL processes to extract relevant data.
- Ensure data is timely and from reliable sources.

3.Data Transformation:

- Cleanse data to remove errors and duplicates.

- Standardize formats for consistency across datasets.

4.Data Aggregation:

- Aggregate data at suitable time intervals (daily, monthly).

- Facilitate analysis over different periods for better insights.

5.Analytical Querying:

- Use SQL or analytical tools to perform queries.

- Focus on time-based analysis to identify trends.

6.Data Visualization:

- Create charts and graphs for clear representation.

- Highlight significant trends and patterns for easy interpretation.

7. Interpret Results:

- Analyze visualizations to derive insights.
- Consider the context and implications of the findings.

8. Reporting:

- Summarize key insights and trends in reports.
- Provide actionable recommendations based on analysis.

5. CHALLENGES IN TREND ANALYSIS:

- **Data Quality Issues:** Incomplete or inconsistent data affects accuracy.

- **Storage & Processing Limits:** Large datasets require efficient data warehousing solutions.

- **Changing Business Conditions:** External factors like economic shifts impact trend predictions.

- **Complexity in Interpretation:** Correlation does not always imply causation.

CONCLUSION

- Trend analysis in data warehousing helps businesses make informed decisions by identifying past patterns and predicting future outcomes.

- With the right data, tools, and techniques, organizations can gain valuable insights, improve efficiency, and enhance strategic planning.

THANK YOU