Project Design Phase
Solution Architecture

Date	28 june 2025
Team ID	LTVIP2025MID48455
Project Name	Visualizing Housing Market Trends: An Analysis of Sales Prices and Features”
Maximum Marks	4 Marks

Solution Architecture:

1. Data Sources:
    - File-based sources: CSV, Excel, or SQL databases.
    - Online real estate datasets: such as those from Kaggle or Zillow.
      These sources provide historical housing sales data including prices, locations, and property features.
2. Data Preprocessing:
    - Python or Excel for initial cleaning and formatting.
    - Tableau Prep for visual data wrangling and reshaping.
      This step ensures the dataset is accurate, consistent, and ready for analysis.
3. Processed Dataset Layer:
   Once preprocessing is done, a structured and refined dataset is created. It includes:
    - Cleaned tables free from null values and anomalies.
    - Calculated fields such as price per square foot, year groups, or location codes.
      This layer acts as the direct input to Tableau Desktop for visualization.
4. Tableau Desktop:
   The heart of the visualization development process. Using Tableau Desktop, several types of dashboards are created:
    - Price Trends: Line charts showing price fluctuations over time.
    - Feature Impact: Scatter plots or bar charts showing how property features like bedrooms or square footage affect price.
    - Geo Heatmaps: Regional pricing visualized on maps.
    - Filter Panels: Allow users to filter data by year, location, price range, and property type.
      These dashboards offer a rich, interactive exploration of housing data.
5. User Presentation:
   This is the final output consumed by users. Dashboards are published through:

- Tableau Public Link: Easily accessible online without needing Tableau license.
- Embedded Web Portal: Integration into a custom website or internal portal.
- PDF/Image Exports: For static reporting or sharing insights offline. This stage ensures insights are visually clear, accessible, and actionable by all stakeholders.

6. **Example - Solution Architecture Diagram:**

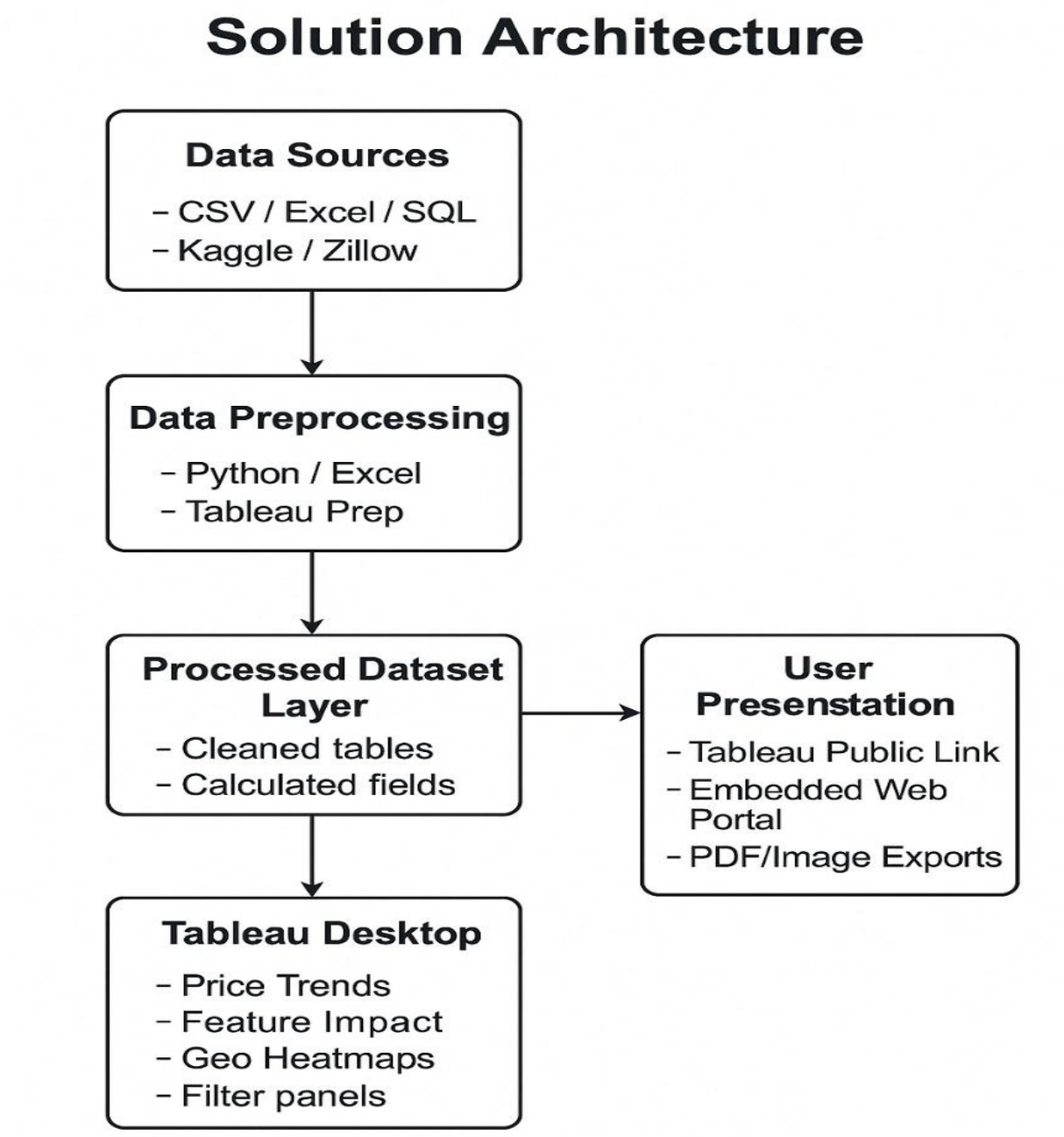

Figure 1: Architecture and data flow of the voice patient diary sample application

Reference: https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/