PROJECT DESIGN PHASE-I
SOLUTION ARCHITECTURE

Date	30 OCTOBER 2023
Team ID	NM2023TMID06561
Project Name	Project – INDIAN FOOD EDA.
Maximum Marks	4 Marks

SOLUTION ARCHITECTURE:

1. THE BEST TECH SOLUTION

For the Indian Food EDA project, our best tech solution combines the power of IBM Db2 on Cloud for data storage, Python and Jupyter Notebook for interactive analysis, and open-source frameworks like flask, analysis tool and python libraries for efficient data manipulation and visualization. Security measures, including IBM Cloud IAM and data encryption, ensure data integrity, while scalability through IBM Cloud resources and performance optimization techniques make the project efficient and accessible. Flask-based web applications and scheduled reports will make EDA insights available to stakeholders, fostering data-driven decision-making and collaboration.

2. CHARACTERISTICS:

Scalability: The system can handle large datasets, making it adaptable for extensive culinary research.

Flexibility: It's versatile, allowing users to define their analysis parameters and customize the EDA process for specific research needs.

Automation: Data collection and preprocessing are partially automated, saving time and reducing manual effort.

Interactivity: The EDA module provides interactive visualizations for better data exploration.

3. BEHAVIOR:

Data is collected from sources through web scraping and stored in a database.

The preprocessing module systematically cleans the data and structures it.

The EDA module follows a step-by-step analysis process, from basic statistics to in-depth ingredient and regional analyses.

4. FEATURES

Data Visualization: Offers data visualization capabilities, including charts, graphs, heatmaps, scatter plots, and geographical maps.

Ingredient Analysis: Analyzes the most frequently used ingredients, their regional variations, and frequency of use.

Regional Variations: Investigates diversity across Indian regions, assessing the prevalence of specific dishes, spices, and specialties.

Popularity and Ratings: Analyzes the popularity and ratings of Indian dishes based on user reviews, ratings, and social media mentions.

5. SPECIFICATION

Indian food eda aims to provide a comprehensive tool for exploring Indian cuisine through data analysis. The software will be developed in Python and will include modules for data collection, preprocessing, and exploratory data analysis. Users will have access to descriptive statistics, data visualization, ingredient analysis, regional variations, popularity and ratings,and nutritional insights. The software will be scalable, user-friendly, and secure. User guides and rigorous testing will be in place to ensure a smooth experience. This solution bridges the gap between data and culinary enthusiasts, offering valuable insights into the world of Indian food.

SOLUTION ARCHITECTURE DIAGRAM: