**Summary for Cloud Deployment**

**Design Overview**

To process and analyse the provided Zomato data, I would design and deploy a solution using a cloud service, focusing on creating a scalable, automated, and secure environment that can process the data according to the specified requirements.

**Data Ingestion and Storage**

1. **Ingesting Data from Hosted Links**

The solution can be designed to directly fetch data from publicly accessible URLs, such as "https://raw.githubusercontent.com/Papagoat/brain-assessment/main/restaurant\_data.json". The system would periodically, or on-demand retrieve the data from these links, ensuring that the data is regularly updated or hosted on external platforms.

1. **Hosting Data in the Cloud**

Alternatively, the data could be first downloaded from external sources and then uploaded to a secure cloud storage environment, ensuring better control over the data, including access permissions and versioning. The cloud storage would then serve as the central repository from which the data processing pipeline retrieves the necessary files, allowing for more robust data management and integration with other cloud services.

**Data Processing and Workflow Automation**

To process the data, I would set up multiple automated functions that triggers when new data is uploaded. These functions will handle tasks such as performing data quality checks (e.g. Primary Key Check / Duplication Detection), extracting the required fields and filtering the data for specific conditions.

For more complex data transformations or larger datasets, a dedicated data processing pipeline could be implemented, allowing for the orchestration of multiple steps in the data processing workflow, ensuring that all required transformations are applied in the correct order. A workflow management system could also be implemented, where each step is triggered automatically when the previous step is completed, reducing the need for manual intervention and ensuring a seamless flow of data.

**Data Storage and Querying**

After processing, the transformed data would be stored in a structured format within a cloud-based database. This allows for easy querying and analysis, enabling the extraction of insights such as aggregated user ratings or event data for specific time periods.

The solution could also include the capability to export data as CSV files automatically or on-demand, depending on the requirements. The exported CSV files can be stored back in cloud storage or downloaded for local use.

**Key Considerations**

Scalability and Cost Management:

Cloud-based environments offer the ability to scale resources up or down based on demand, which is essential for handling varying data volumes. Therefore, I would prioritize using services that offer a pay-as-you-go model. This ensures that costs are in line with actual usage and it keeps the solution cost-effective while still being capable of handling larger workloads as the project grows.

Security and Compliance:

Ensuring data security and compliance with relevant regulations is critical, especially when handling sensitive information. By securing the data storage environment and controlling access through role-based permissions, the solution protects against unauthorized access and data breaches. This decision aligns with best practices for data management in cloud environments, ensuring that the solution is both secure and reliable.