**Smart-Kitchen-Helper Case Study and Presentation**

**Scenario:**

As a team of recent cloud computing graduates, you've been tasked with developing a microservice-based web application named "Smart-Kitchen-Helper." The application is designed to enhance users' kitchen experiences by helping them manage their household cooking ingredients and access a comprehensive database of recipes. This project requires a secure, highly available, and scalable cloud-based infrastructure to handle peak usage and maintain a seamless user experience.

The application will consist of two main services:

1. **Public Front-End Service:** This allows users to sign up, store details about their household cooking ingredients, and access recipes based on the ingredients they have on hand.
2. **Private Back-End API Service:** This handles data processing, connections to the PostgreSQL database, and MongoDB for storing images and videos.

Your team is responsible for designing a cloud architecture that meets the project’s requirements. You must provide an accurate and detailed architectural diagram that considers scalability, high availability, security, and redundancy.

**Details that MUST be Captured:**

* Proper labeling of resources and components.
* Use of provider-specific icons in the diagram.
* Clarity and readability of the architecture diagram.
* Consideration of compute, storage, and network layers/services.
* CIDR and subnet division.
* Security best practices at every layer.
* Redundancy, scalability, and high availability considerations.

**Deliverables:**

1. **Official Document:**
   * **Team Members:** List of members who worked on the project.
   * **Introduction:** A standard introduction to the "Smart-Kitchen-Helper" project.
   * **Background:** Information on the scenario and challenges presented by the project.
   * **Rationale:** Explanation of the design methodologies and reasons behind the architectural decisions made.
   * **Results/Body/Artefact Produced:** Detailed descriptions of the architecture, including diagrams and explanations.
   * **References:** A reference section using APA format (6th or 7th edition), with a minimum of three sources.
2. **Architectural Document Package:**
   * A slide showing the complete architecture design.
   * Slides detailing each member's specific contributions to the architecture, as each member will present and answer questions on their part of the design.

**Group Evaluation Rubric:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Evaluation Items** | **Excellent** | **Competent** | **Inadequate** | **Score** |
| Proper labeling of components | 3 points | <=1.5 points | 0 points | /3 |
| Diagram used service-specific icons | 2 points | <=1 points | 0 points | /2 |
| Diagram clarity and readability | 3 points | <=1.5 points | 0 points | /3 |
| Compute Layer/Services | 5 points | <=2.5 points | 0 points | /5 |
| Storage Layer/Services | 4 points | <=2 points | 0 points | /4 |
| Network Layer/Services | 5 points | <=2.5 points | 0 points | /5 |
| Adherence to Document Structure | 3 points | <=1.5 points | 0 points | /3 |
| Proper referencing format and quantity | 4 points | <=2 points | 0 points | /4 |
| Accuracy and Correctness | 5 points | <=2.5 points | 0 points | /5 |
| Redundancy, High Availability, and Scalability Considerations | 3 points | <=1.5 points | 0 points | /3 |
| Security Considerations | 3 points | <=1.5 points | 0 points | /3 |
| **Total** |  |  |  | **/40** |

**Presentation Evaluation Rubric:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Graded** | **Excellent (5)** | **Good (4)** | **Satisfactory (3)** | **Some Problems (2)** | **Many Problems (1)** | **Did Not Present (0)** |
| Accuracy | Exceptional information accuracy matching requirements. | Good information accuracy matching requirements. | Satisfactory information accuracy matching requirements. | Problems with information accuracy toward requirements. | Minimal accuracy of information matching requirements. | DNP |
| Presence & Delivery | Exceptional presentation skills (Tone, Eye contact, Pacing & Interaction with Slide) | Good presentation skills | Satisfactory presentation skills | Moderate presentation skills | Poor presentation skills | DNP |
| Q&A | Accurate and exceptional answers to instructor’s questions. | Good answer to instructor’s question. | Satisfactory answer to instructor’s question. | Slightly accurate answer to instructor’s question. | Poor answer to instructor’s question. | DNP |