Assignment Online Airbnb Booking System

Task: Design an Online Airbnb Booking System

You are working as an architect for a company that wants to build an online booking platform like Airbnb. Your task is to design the architecture and infrastructure for this system.

Requirements:

* Users should be able to search for properties based on location, dates, price range, and other filters.
* Property owners should be able to list their properties, set prices, manage availability, and communicate with potential guests.
* Guests should be able to book properties, make payments, and communicate with property owners.
* The system should provide a secure payment gateway and handle transactions securely.
* The system should be scalable and able to handle high traffic during peak periods.
* The system should be reliable and ensure that bookings are not lost due to technical issues.
* The system should have a review and rating system where guests can rate properties and hosts can rate guests.

Tasks:

1. Develop a high-level architecture for the system, including the front-end, back-end, and database components.
2. Identify the technologies and tools that will be used for each component.
3. Develop a detailed data schema for the database component.
4. Develop a scalable and fault-tolerant infrastructure plan.
5. Develop a security plan for the system, including secure authentication and authorization mechanisms.
6. Develop a plan for handling payments securely and integrating with payment gateways.
7. Develop a plan for implementing a review and rating system for the properties and users.

Deliverables:

1. A detailed architecture diagram that outlines the different components of the system and how they interact.
2. A list of technologies and tools that will be used for each component of the system.
3. A detailed data schema for the database component.
4. An infrastructure plan that includes information about the hardware and software components, as well as how they will be deployed.
5. A security plan that includes secure authentication and authorization mechanisms.
6. A payment plan that includes the payment gateway that will be used and how payments will be handled securely.
7. A plan for implementing a review and rating system for the properties and users.

Note: You can assume that the system will be developed using modern web development technologies and hosted on cloud-based infrastructure.