1. Identify the application you are examining.

Application: Netflix

1. Break the system down...what are its major components?

Major components of Netflix:

1. Client: Any end-user device having capabilities of accessing Netflix on a browser or on an app.
2. Open Connect or Content Delivery Network: A distribution server that broadcasts a video stream whenever the user hits play on the client side.
3. Backend (Database): Most of the database handling is done on Amazon Web Services. This component is where the distributing server takes onboarded content and makes it ready for distribution.
   1. Create a system context diagram that describes the system.

A diagram of a computer

Description automatically generated

* 1. Create use cases for each part of the system context.

A diagram of a company

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1. Explain what the design pattern is and how it is evident the design pattern exists OR why you suggest using that design pattern in the application.

A design pattern is what strategy the system is using to efficiently solve a specific problem. Figuring out the reusable components of the system can uncover the design patterns.

Design Pattern: Service Oriented Architecture(SOA) and Microservice Architecture

Reason to suggest:

* 1. SOA: Netflix needs to deliver fast and reliable content delivery to users worldwide.
  2. Microservice: Netflix must Manage a large and complex streaming platform efficiently while ensuring scalability and fault tolerance.

1. Architectural Design Decisions:
   1. Is there a generic application architecture that can be used?

It is true that Netflix uses a general application design built on microservices and service-oriented architecture (SOA). With this architecture, the application is divided into several discrete, autonomous services that communicate with one another using clear APIs. It is a general pattern that enables scalability, flexibility, and fault tolerance.

* 1. How will the system be distributed?

To provide high availability and minimal latency, the system is dispersed over numerous data centers and geographical areas. While microservices are deployed in a distributed way across servers and regions, content is disseminated through content delivery networks (CDNs).

* 1. What architectural styles are appropriate?

A combination of Microservices Architecture and Service Oriented Architecture will allow for modular development, easier testing, and maintenance. It will also Divide the application into small, independent services, each responsible for a specific task. Enable independent deployment and communication between services.

* 1. What approach will be used to structure the system?

The structural approach will emphasize modularity and independence of services.

* 1. How will the system be decomposed into modules?

The system could decompose into modules based on functional boundaries, with each microservice representing a specific module or functional unit.

* 1. What control strategy should be used?

The System should be able to prevent cascading failures when a microservice experiences repeated issues. Implementing a circuit breaker mechanism that temporarily stops sending requests to a failing service will help the service recover and prevent overloading.

* 1. How will the architectural design be evaluated?

By A/B testing for user experience and various test modules for the major components, the performance of the architecture is evaluated.

* 1. How should the architecture be documented?

The architecture can be documented by a combination of code documentation and architectural design tools.

1. Architecture:
2. Explain which architecture pattern you believe is used.

Microservice and Service Oriented Architecture

1. Also provide a diagram for what you think that architecture pattern would look like.

A diagram of a television show

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