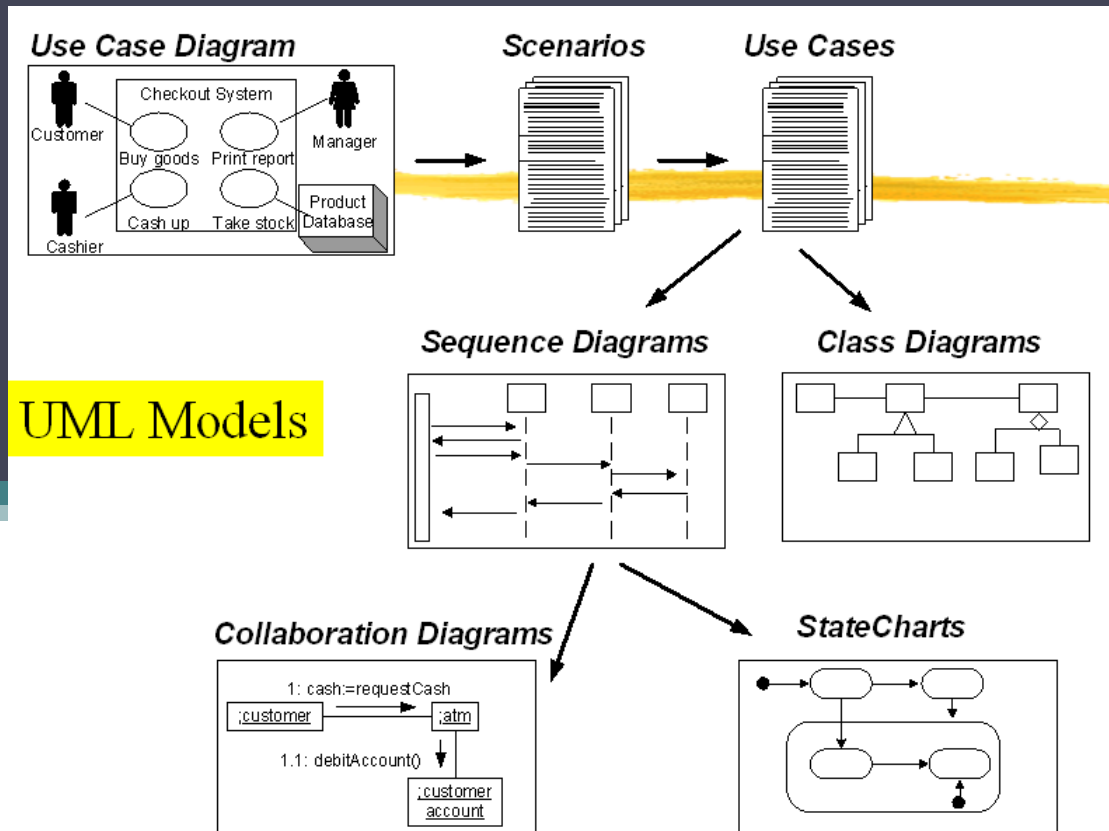


System Modeling



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Introduction

- System modeling is the process of developing **abstract models** of a system, with each model presenting a different view or **perspective** of that system.
- System models are used during
 - Requirements Engineering
 - System Design
 - After Implementation

Introduction..2

- You can also develop system models to describe:
 - **Existing system**: facilitate communication and understanding with customer, derive requirements, etc.
 - **Future System**

System Models to View Different Perspectives

- **An external perspective**, where you model the context or environment of the system
- **An interaction perspective** where you model the interactions between a system and its environment or between the components of a system
- **A structural perspective**, where you model the organization of a system or the structure of the data that is processed by the system.
- **A behavioral perspective**, where you model the dynamic behavior of the system and how it responds to events.

Main UML Models

Use Case
Diagrams

Activity
Diagrams

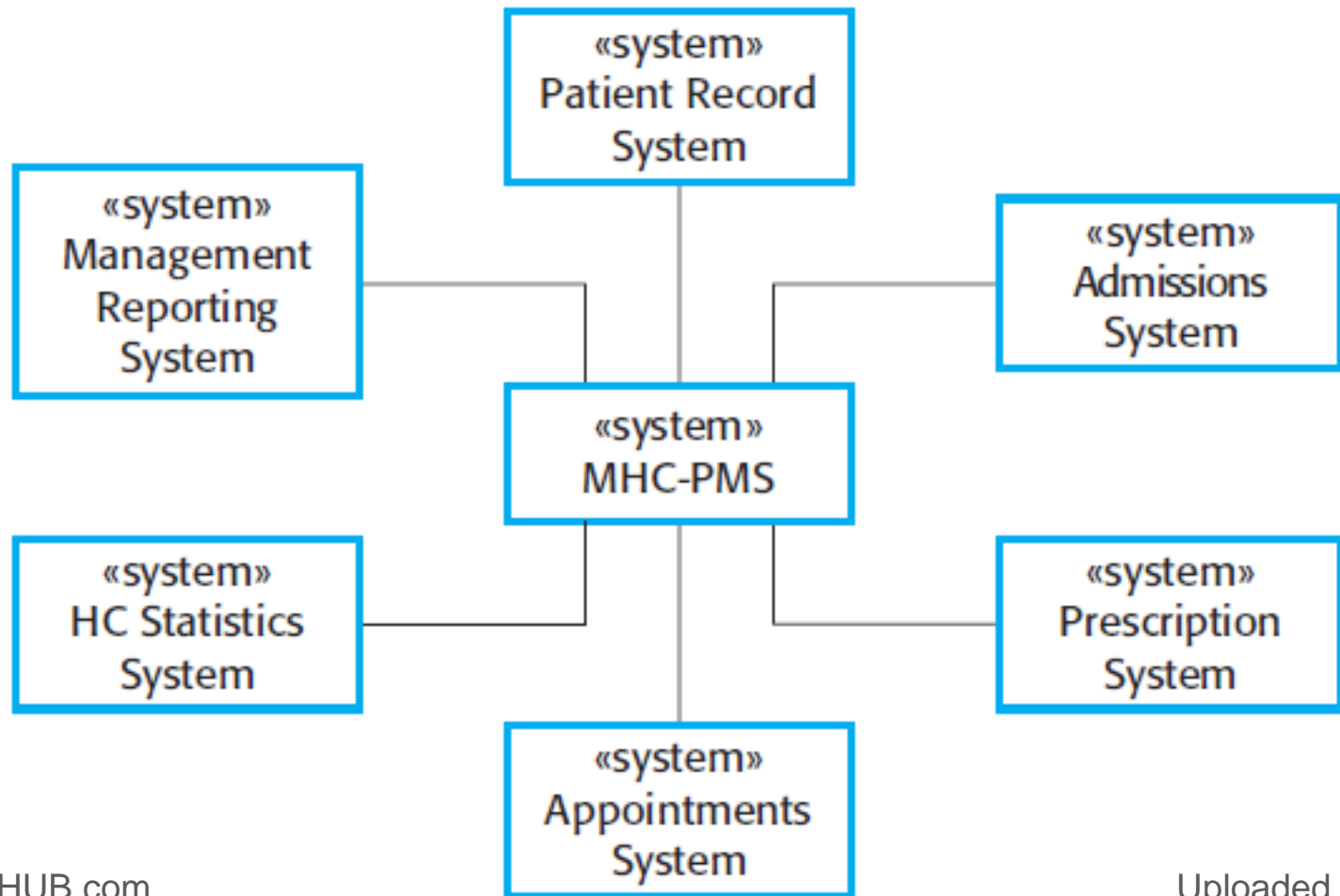
Class
Diagrams

Sequence
Diagrams

State
Diagrams

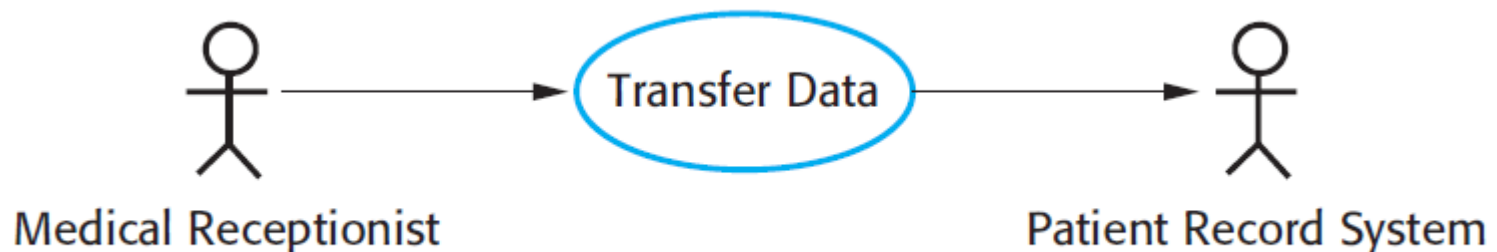
Context Models

- Describe the boundary of a system
- Used early during requirements engineering



Interaction Models: Use Case Diagrams

- Use case modeling, which is mostly used to model interactions between a system and external actors (users or other systems).
- High level interaction.

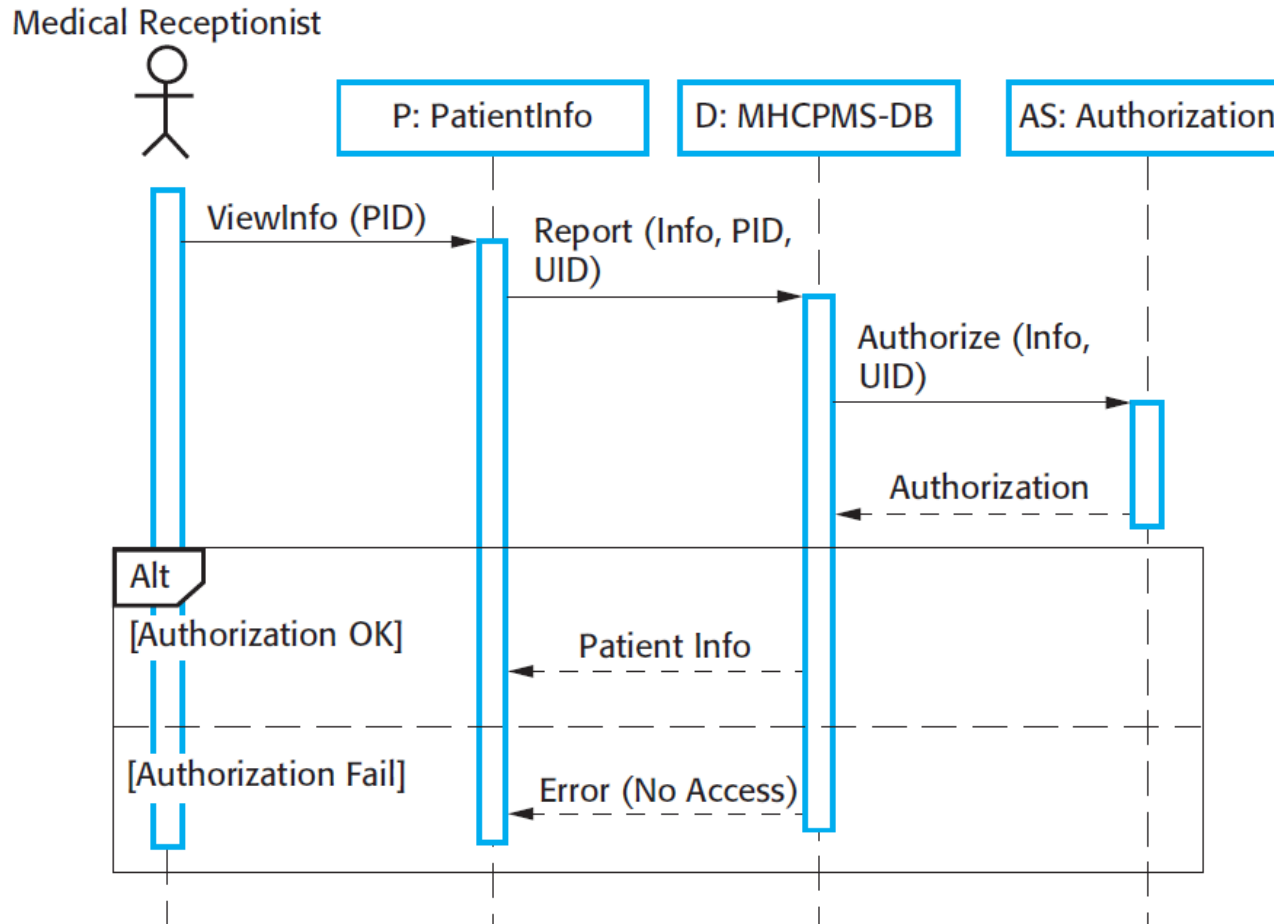


Can Also Use Tabular Presentation to show more details

MHC-PMS: Transfer data

Actors	Medical receptionist, patient records system (PRS)
Description	A receptionist may transfer data from the MHC-PMS to a general patient record database that is maintained by a health authority. The information transferred may either be updated personal information (address, phone number, etc.) or a summary of the patient's diagnosis and treatment.
Data	Patient's personal information, treatment summary
Stimulus	User command issued by medical receptionist
Response	Confirmation that PRS has been updated
Comments	The receptionist must have appropriate security permissions to access the patient information and the PRS.

Higher level Sequence Diagram



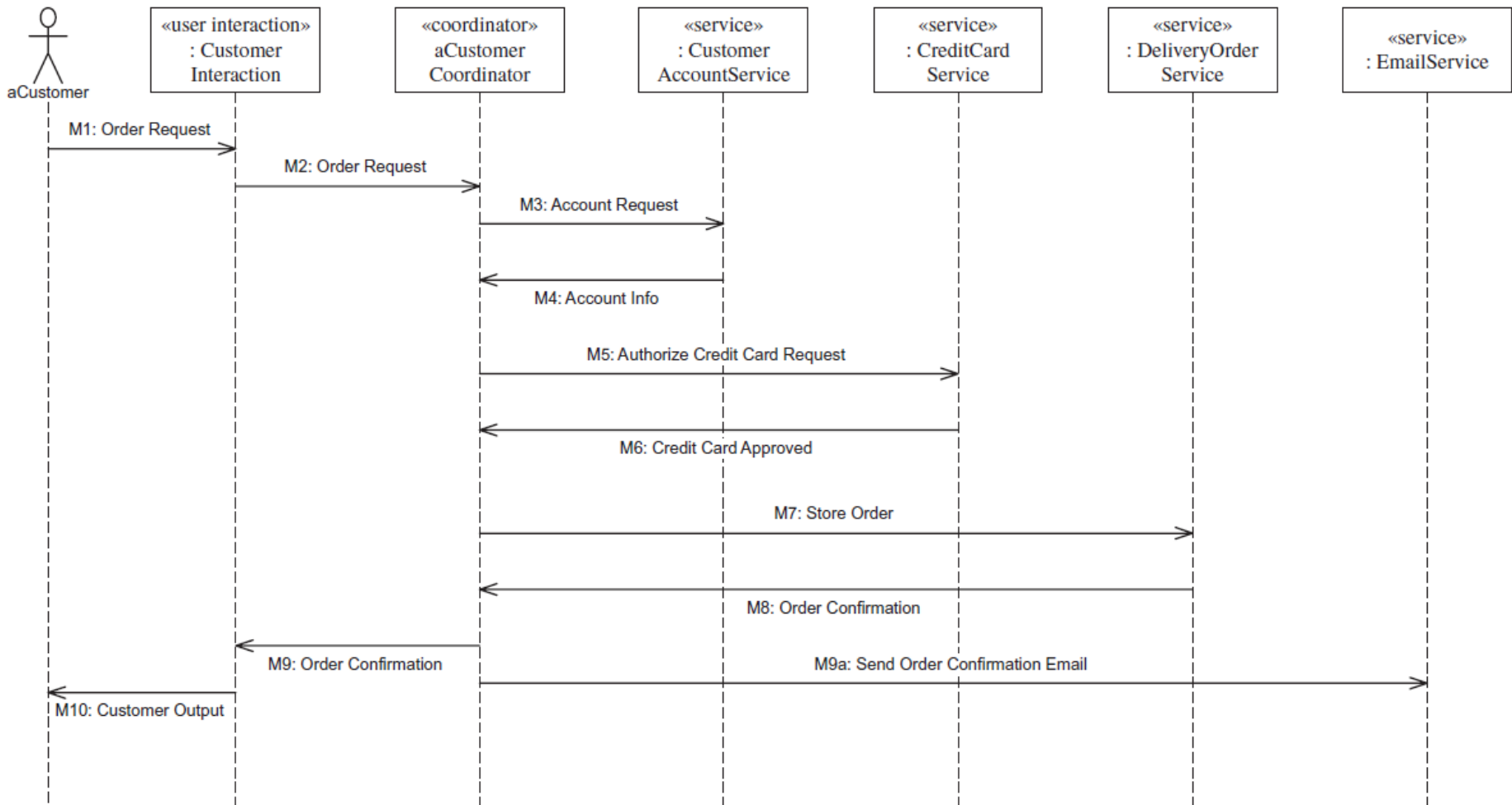


Figure 9.6. Sequence diagram for the Make Order Request use case: main sequence