USE CASE DIAGRAMS

- A use case diagram is a diagram that shows a set of use cases and actors and their relationships

- Figure 1 shows A Use Case Diagram

- Use case diagrams commonly contain Use cases, Actors, Dependency, generalization, and association relationships

- use case diagrams may contain packages, certain times instances of use cases, notes and constraints

- apply use case diagrams to model the static use case view of a system by modeling the context of a system and by modeling the requirements of a system
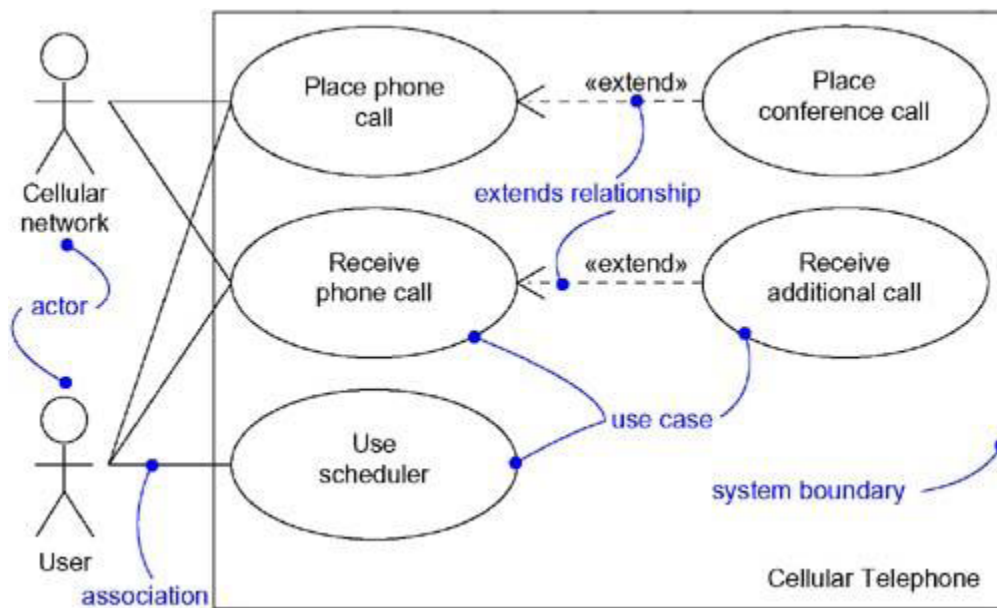

Figure 1: A Use Case Diagram

Modeling the Context of a System

To model the context of a system,

- Identify the actors that surround the system by considering which groups require help from the system to perform their tasks; which groups are needed to execute the system's functions; which groups interact with external hardware or other software

systems; and which groups perform secondary functions for administration and maintenance

- Organize actors that are similar to one another in a generalization / specialization hierarchy
- Where it aids understandability, provide a stereotype for each such actor
- Populate a use case diagram with these actors and specify the paths of communication from each actor to the system's use cases

  Figure 2 shows the context of a credit card validation system, with an emphasis on the actors that surround the system
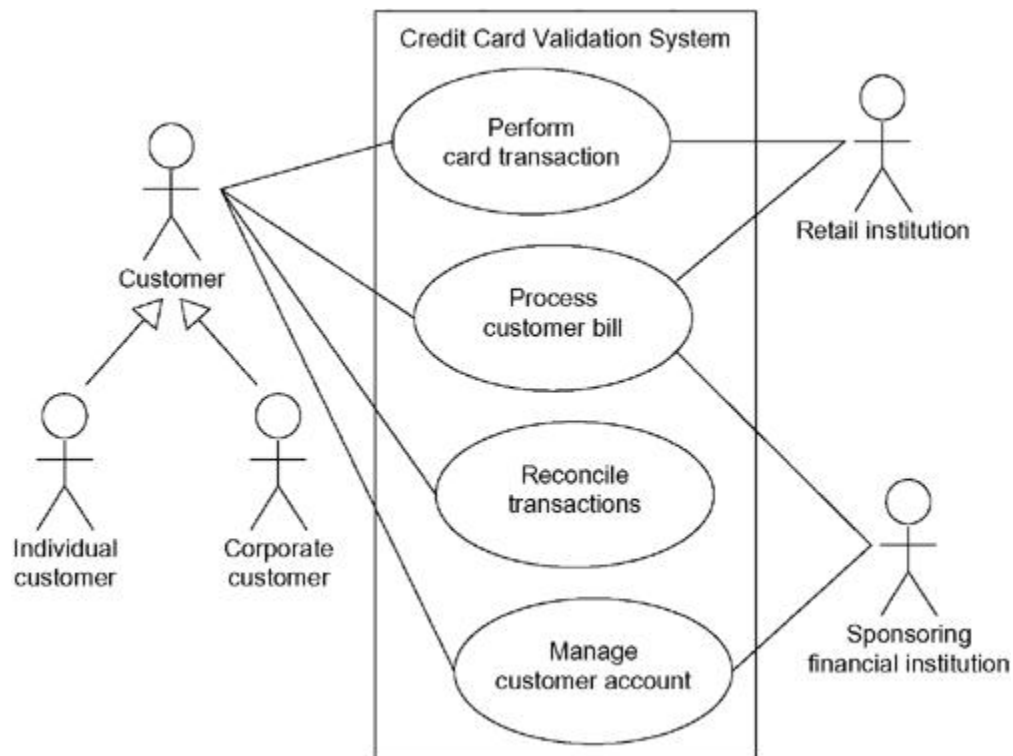

Figure 2: Modeling the Context of a System

Modeling the Requirements of a System

To model the requirements of a system,

- Establish the context of the system by identifying the actors that surround it
- For each actor, consider the behavior that each expects or requires the system to provide

- Name these common behaviors as use cases
- Factor common behavior into new use cases that are used by others; factor variant behavior into new use cases that extend more main line flows
- Model these use cases, actors, and their relationships in a use case diagram
- Adorn these use cases with notes that assert nonfunctional requirements; you may have to attach some of these to the whole system

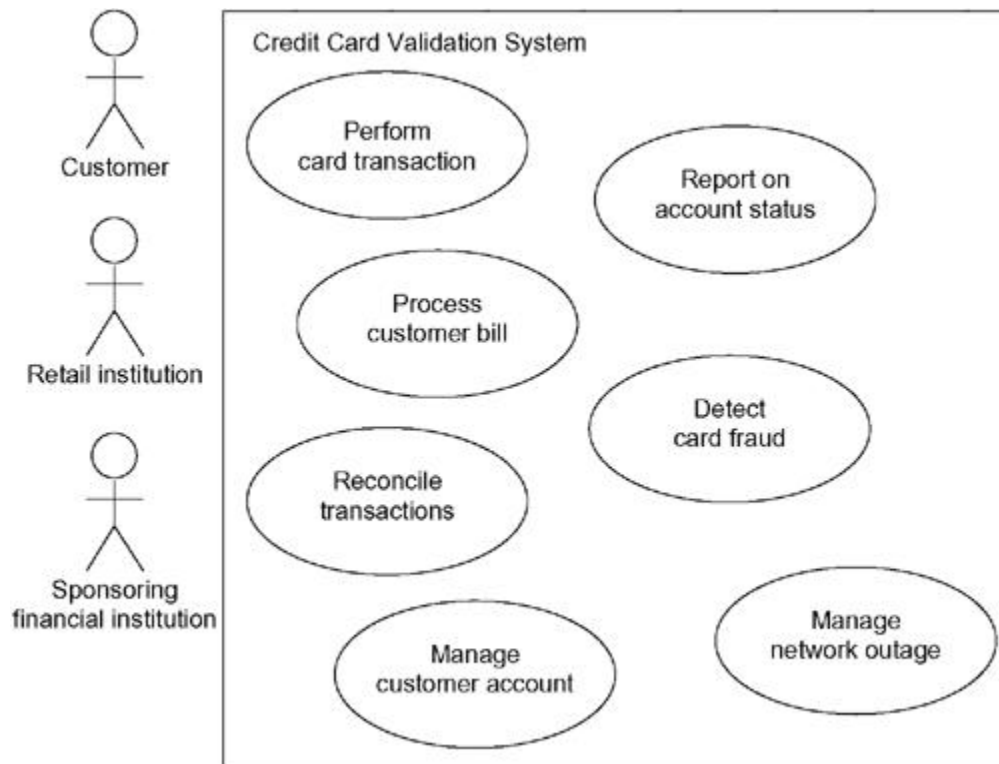Figure 3 expands on the previous use case diagram

Figure 3: Modeling the Requirements of a System