

UML Modeling

- UML is an industry standard modeling language with a rich graphical notation, and comprehensive set of diagrams and elements.
- Standard language for specifying, visualizing, constructing, and documenting the artifacts of software systems, business modeling and other non-software systems.
- The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems.
- The UML is a very important part of developing objects oriented software and the software development process.
- The UML uses mostly graphical notations to express the design of software projects.
- Using the UML helps project teams communicate, explore potential designs, and validate the architectural design of the software.

UML 2 defines the following diagrams:

- [Package diagrams](#)
- [Class or Structural diagrams](#)
- [Object diagrams](#)
- [Composite Structure](#)
- [Component diagrams](#)
- [Deployment diagrams](#)
- [Use Case Diagrams](#)
- [Activity diagrams](#)
- [State Machine diagrams](#)
- [Communication diagrams](#)
- [Sequence diagrams](#)
- [Timing diagrams](#)
- [Interaction Overview diagrams](#)
- [Profile diagrams](#)

Complete Example: Library Management System(LMS)

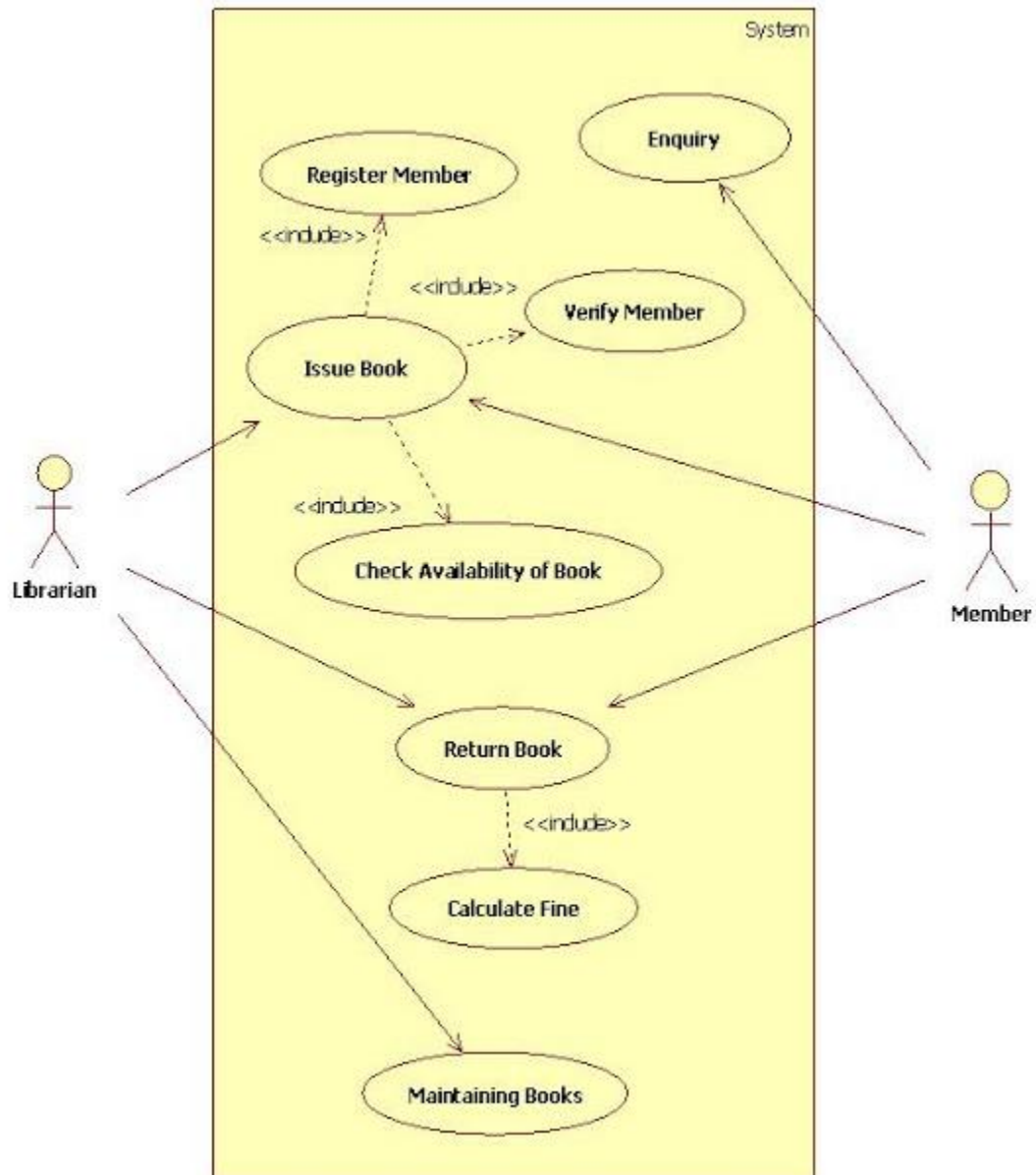


Fig: Use case model for LMS

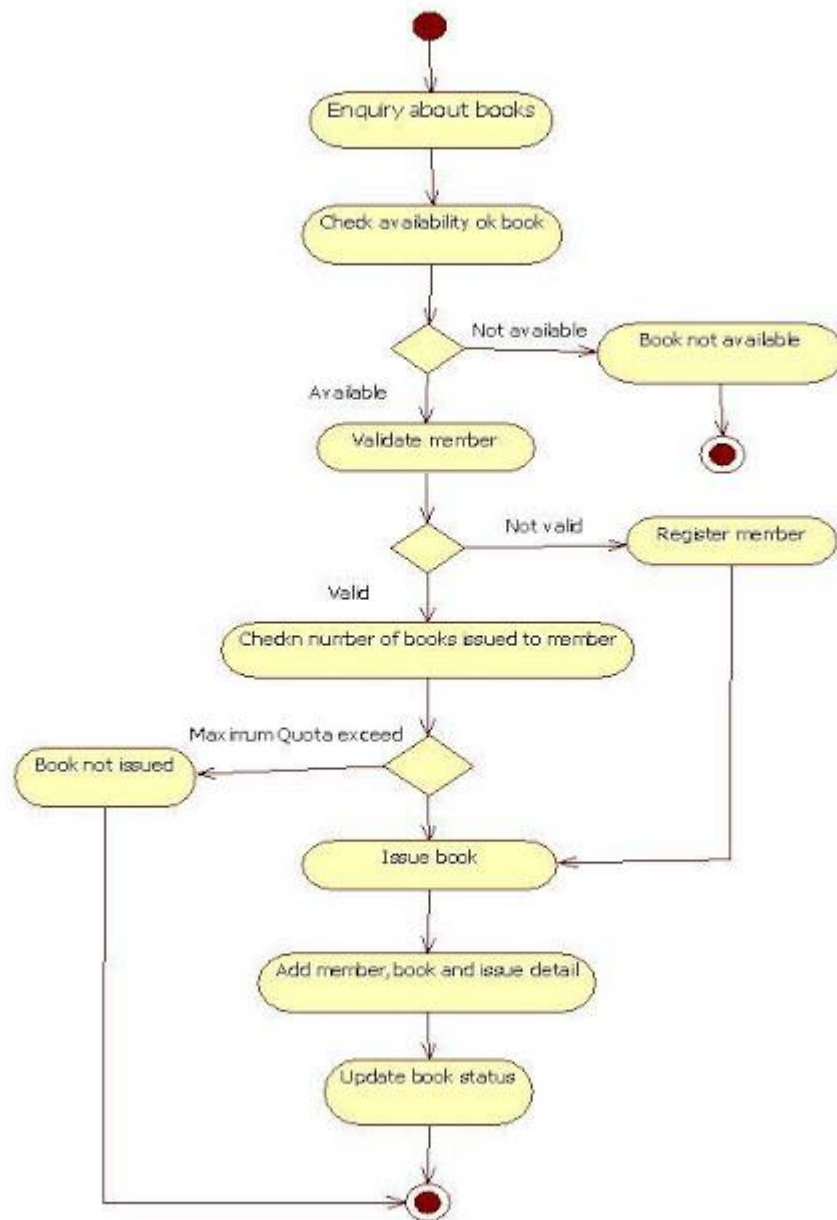


Fig: Activity Diagram for issue book

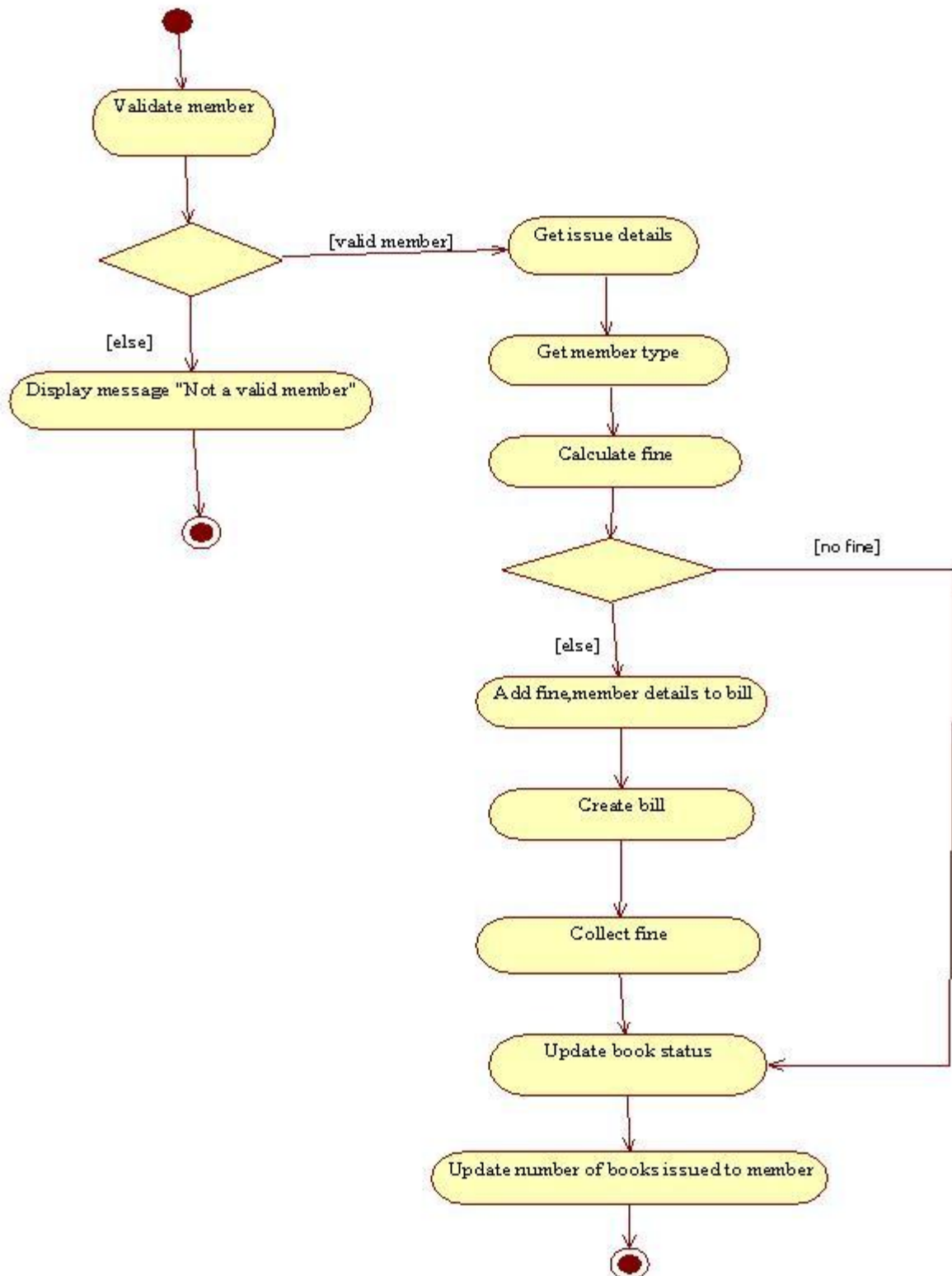


Fig: Activity Diagram for return book

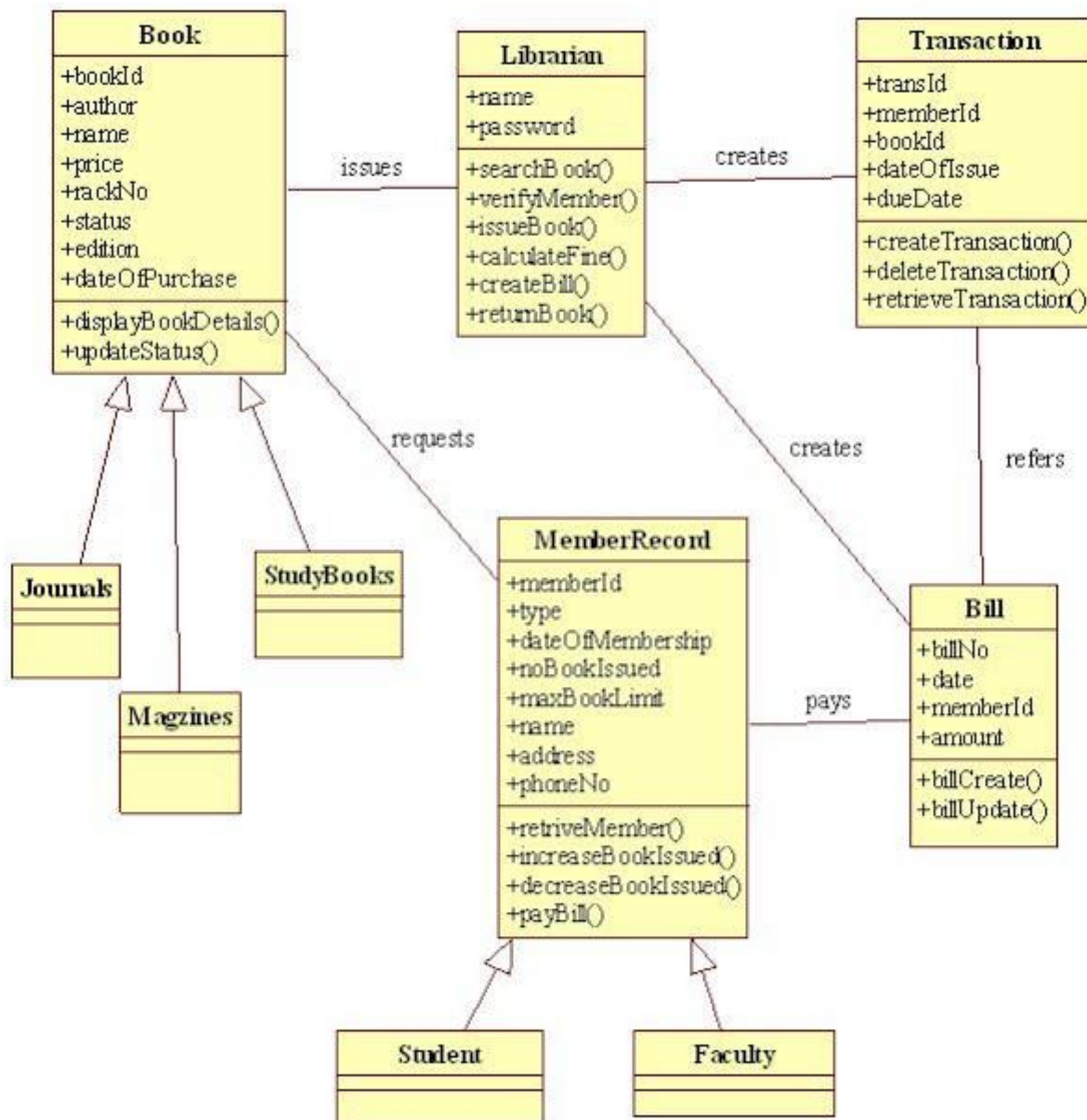


Fig: Class Diagram for LMS

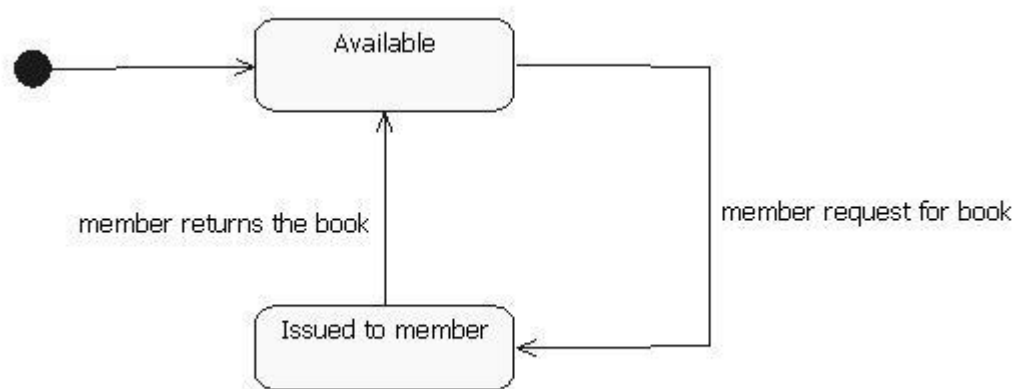


Fig: State diagram for Book

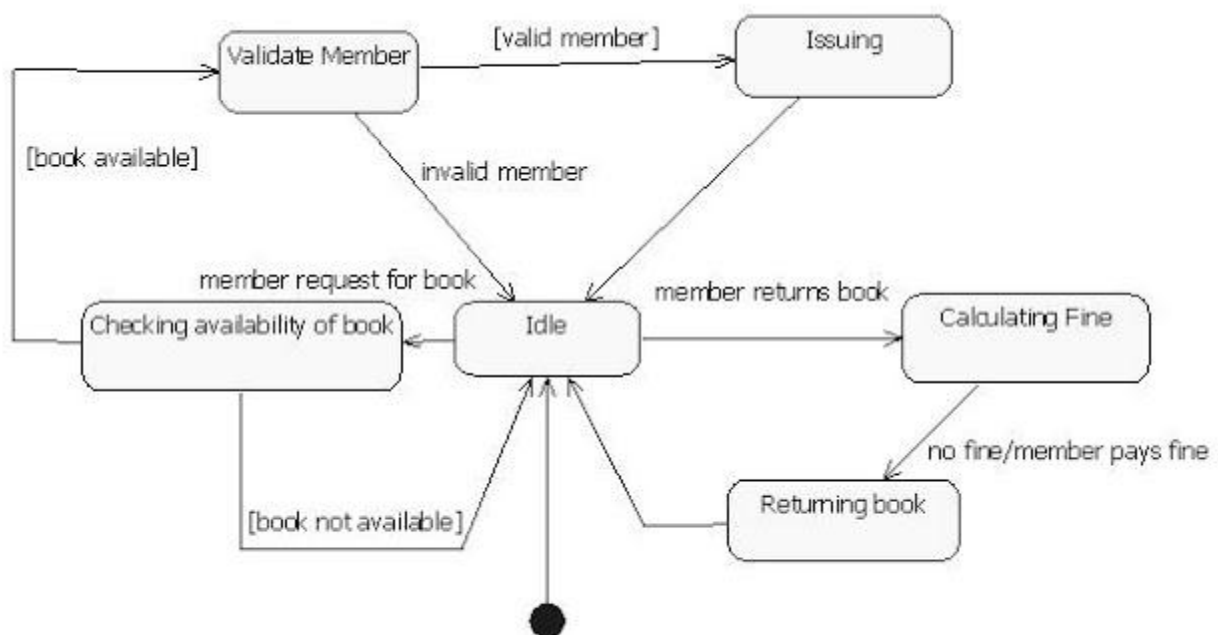


Fig: State diagram for Librarian

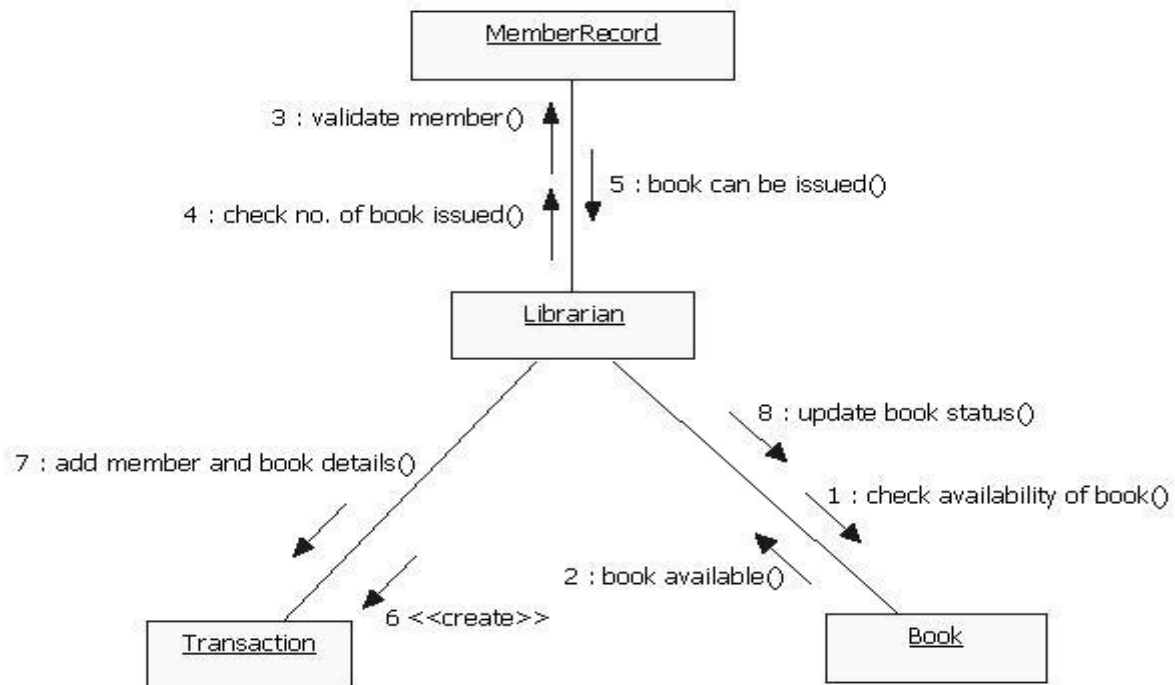


Fig: Collaboration Diagram for issue book

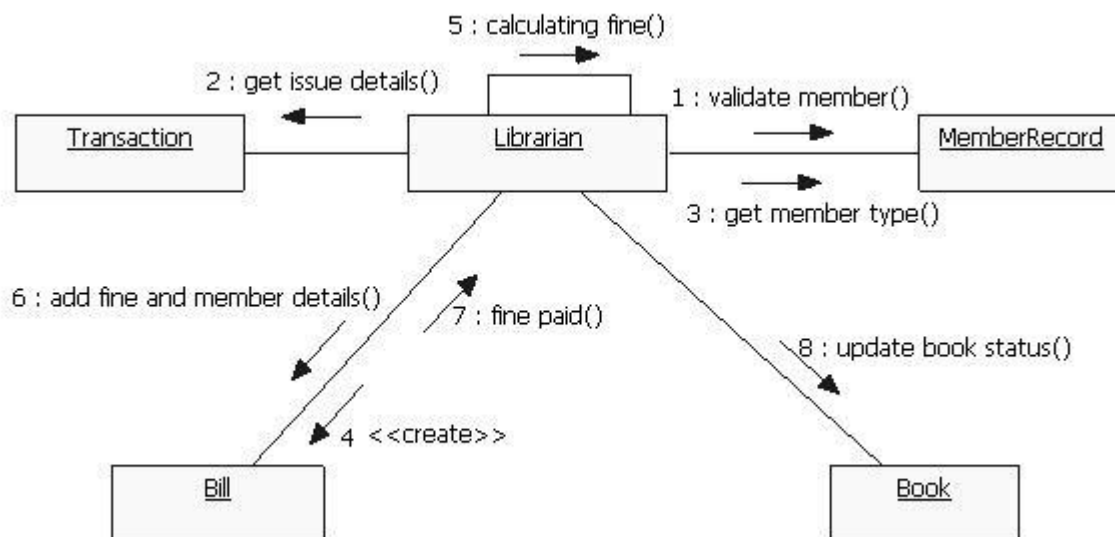


Fig: Collaboration Diagram for return book

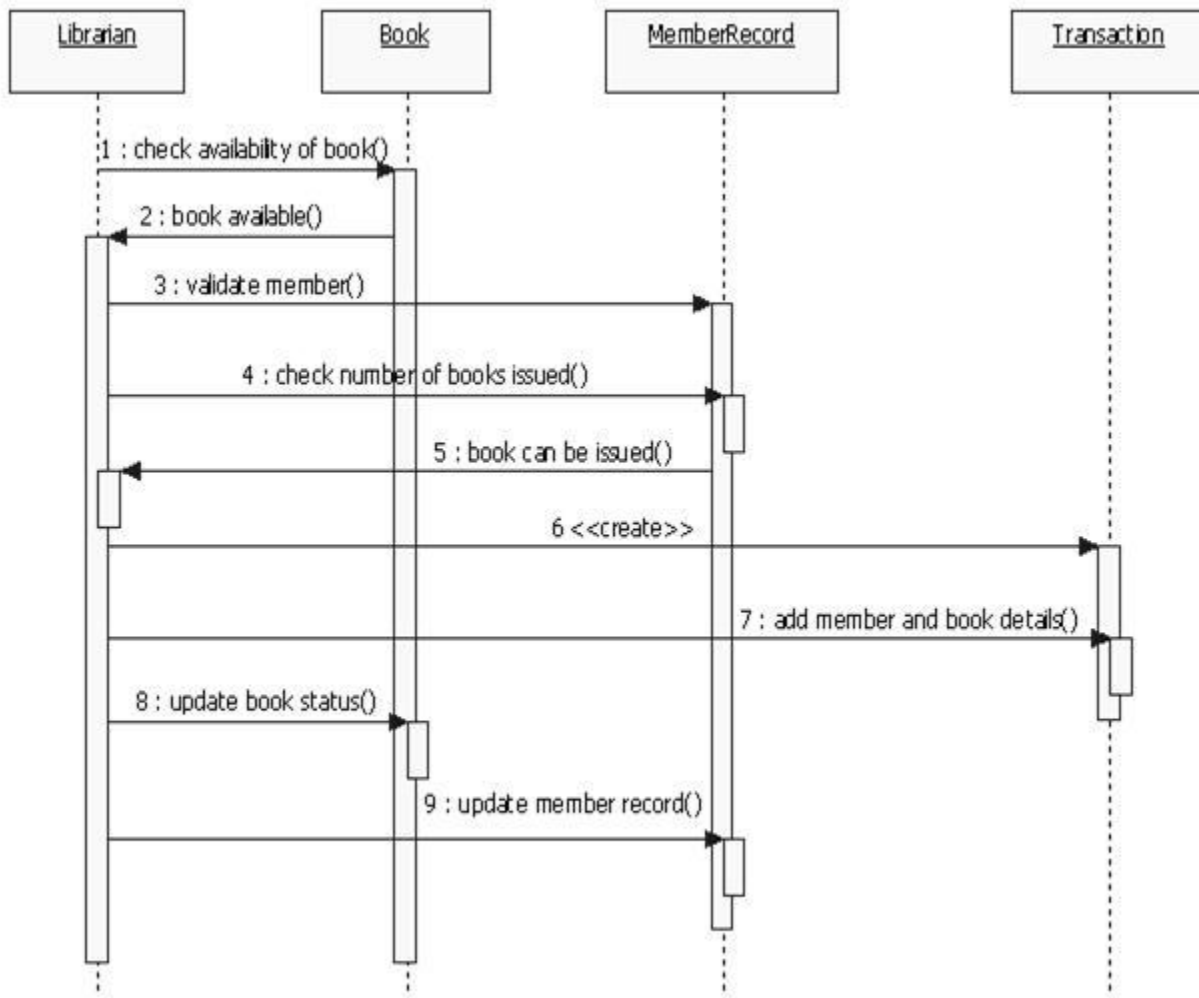


Fig: Sequence Diagram for issue book

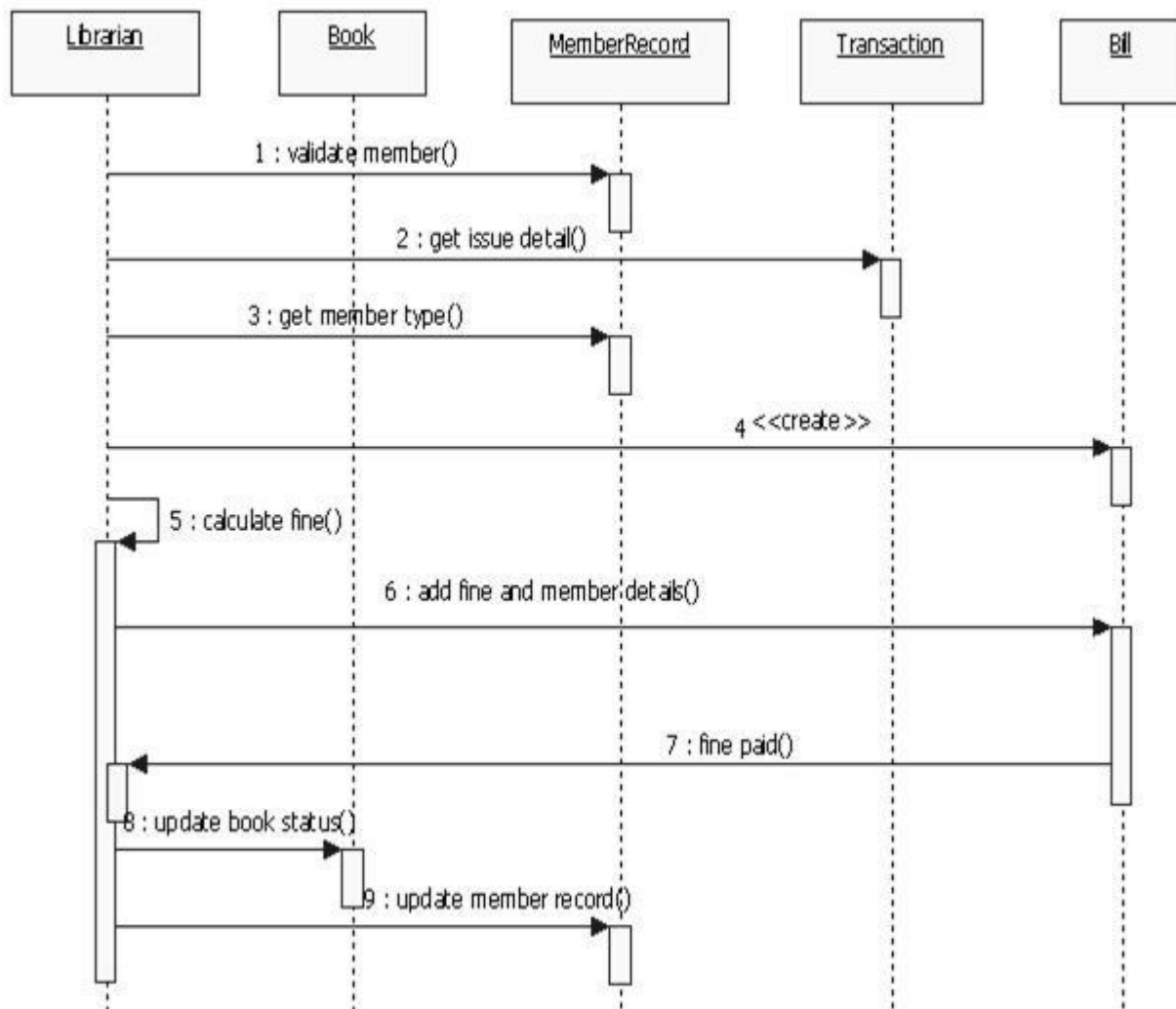


Fig: Sequence Diagram for return book

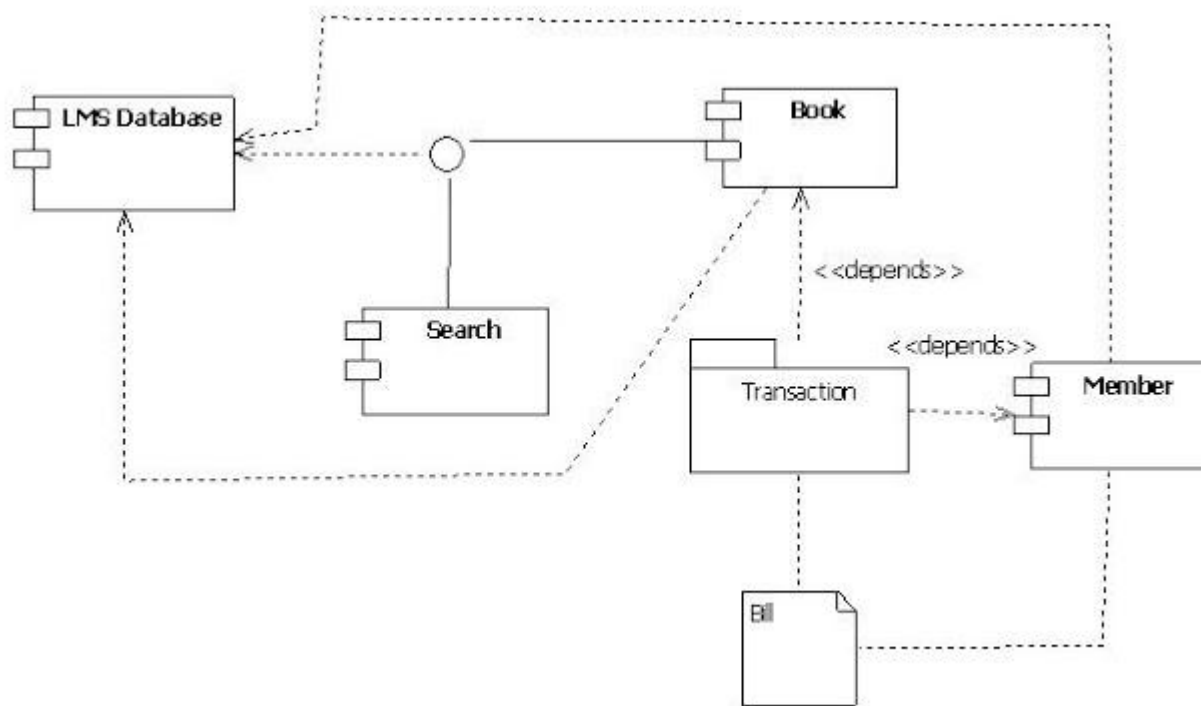


Fig: Component Diagram for LMS

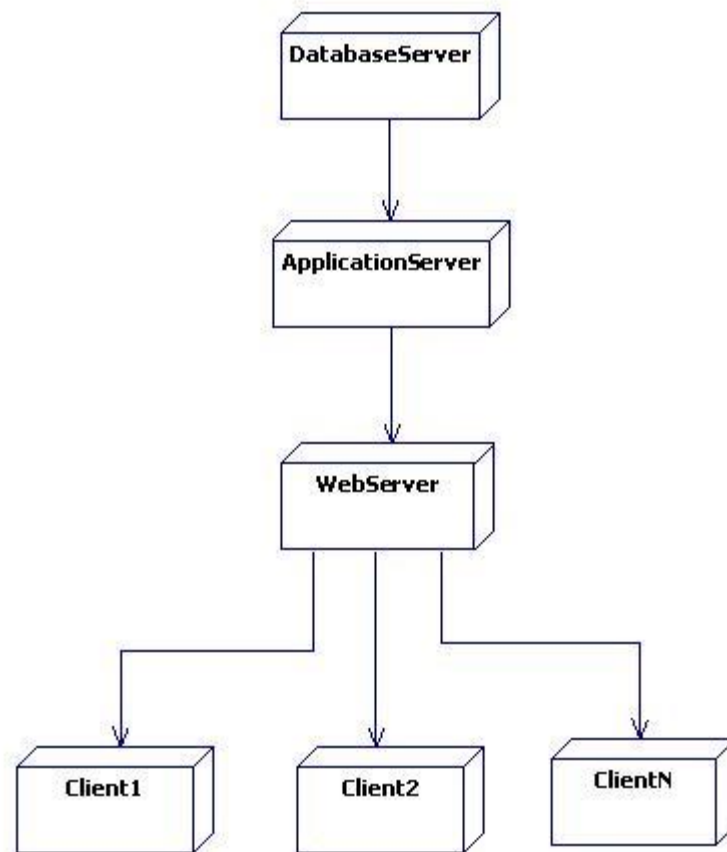


Fig: Deployment Diagram for LMS

References:

<http://en.wikipedia.org>
<http://www.sparxsystems.com/platforms/uml.html>
<http://itkaka786.blogspot.com/>
<http://www.uml.org/>