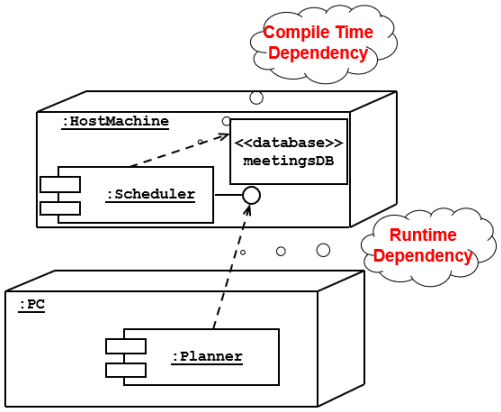
Deployment diagrams are useful for showing a system design after the following decisions are made.

- Subsystem decomposition
- Concurrency
- Hardware/Software Mapping

A deployment diagram is a graph of nodes connected by communication associations.

- Nodes are shown as 3-D boxes.
- Nodes may contain component instances.
- Components may contain objects (indicating that the object is part of the component)



Persistent Object: Provide clean separation points between subsystems with well-defined interfaces.

A persistent object can be realized with one of the following.

- Data structure (volatile data)
- Files (coding required, cheap, simple and permanent storage)
- Database (multiple writes and reads and powerful)

Relational Databases: Data is presented as 2-dimensional tables. Tables have a specific number of columns and arbitrary numbers of rows.

Primary key: Combination of attributes that uniquely identify a row in a table. Each table should have only one primary key.

Foreign key: Reference to a primary key in another table.

Referential integrity means that references to entries in other tables actually exist.

SQL is the standard language defining and manipulating tables.

Object-Oriented Databases:

- Supports Classes, Attributes, Methods, Associations, Inheritance

Global Resource Handling:

- Discusses access control.
- Describes access rights for different classes of actors.
- Describes how object guards against unauthorized access.

Defining Access Control:

- During analysis: associating different use cases with different actors.
- During design: examing the object model by determining which objects are shared among actors.

Access matrix:

- The rows of the matrix: the actors of the system.
- The column: classes whose access we want to control.

Access Right: An entry in the access matrix. It lists the operations that can be executed on instances of the class by the actor.

Global access table: Represents explicitly every cell in the matrix as a (actor,class, operation) tuple.

Access control list associates a list of (actor,operation) pairs with each class to be accessed.

A capability list associates a (class,operation) pair with an actor.