Component Diagram

Component diagrams are used to represent the how the physical components in a system have been organized.

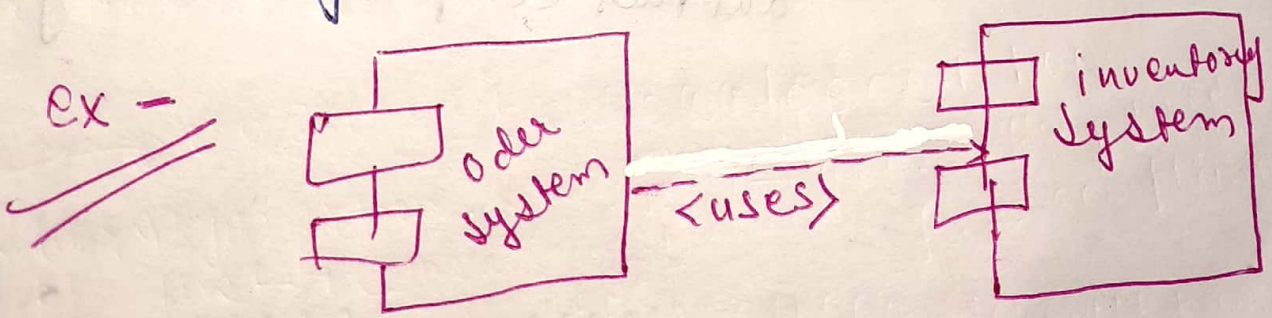
- we use them for modelling implementation details.
- Component Diagrams depict the structural relationship between software system elements and helps us in understanding if functional requirements have been covered by planned development

Component Diagram become essential to use when we design and build complex system

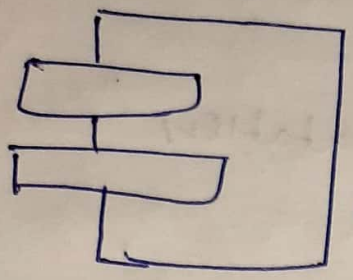
relationships used by components of the system to communicate with ~~eatch~~ each other.

- Component diagram are used to visualize the organisation and relationships among components in a system.
- These diagram use to make executable system

Ex -

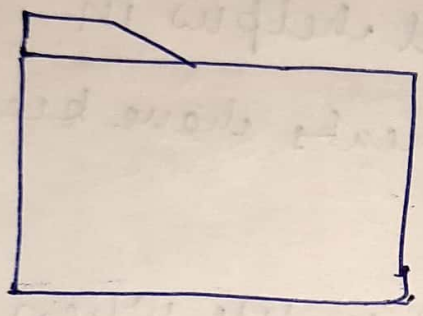


Notation used in component

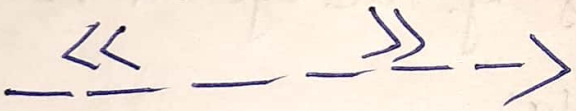


→ denote component

component represent modular part of a system. A component defines its behaviour in terms of provided and required interfaces



— denote Package or library files, classes use cases and component



— optional

one component will make to another component sometimes means optional

→ one component use another component always

Now the question is what are these physical aspects?

Physical aspects are the elements such as executables libraries files documents etc.

Purpose of Component diagrams

Component diagram is a special kind of diagram in UML. The purpose is also different from all other diagrams discussed so far.

- It does not describe the functionality of the system but it describe the components used to make those functionalities

Thus from that point of view component diagrams are used to visualize the physical components in the system. These components are libraries package files etc.

- A single component diagram cannot represent the entire system but a collection of diagrams is used to represent the whole

The Purpose of component diagram can be summarized as :—

Visualize the components of a system.

Construct executables by using forward and reverse engineering

Describe the organization and relationships of components.

Before drawing a components diagram the following artifacts are to be identified clearly.

- files used in the system
- libraries and other artifacts relevant to the application
- Relationships among the artifacts.

Component diagrams can be used to —

- Model the components of a system
- Model the database schema
- Model the executables of an application
- Model the system's source code