

# The component diagram - IBM Developer.pdf

## What it covers:

- **UML component diagrams:**
  - Show how a system is divided into **components**.
- **Components:**
  - Encapsulated, replaceable units.
  - Have well-defined interfaces (provided/required).
- **Notation:**
  - Components as rectangles.
  - Lollipop → provided interface.
  - Socket → required interface.

## Insights:

- **Component diagrams:**
  - Clarify high-level architecture.
  - Show which components interact.
- **Interfaces:**
  - Defined explicitly.
  - Help plan dependencies and contracts between parts of the system.
- **Subsystems:**
  - Specialized components.
  - Aggregate several components into one bigger logical unit.
- **Internal structure:**
  - Components can be shown containing smaller components.
  - Ports connect inner workings to the external world.

## Why it matters:

- **Helps:**
  - Plan reusable architectures.
  - Manage dependencies in large projects.
  - Communicate architecture to developers and stakeholders.
- **For AI:**
  - Helps design microservice-based ML systems.
  - Clarifies what services (e.g. model servers, APIs, data collectors) provide or require