UML: Advantages and Disadvantages (source: ChatGPT)

Advantages of UML	Disadvantages of UML
Visualizes complex systems – Makes architecture, behavior, and interactions easier to understand.	**Can be overly complex** – Has many diagram types and symbols that require time to learn.
Improves communication among developers, designers, analysts, and stakeholders through a unified language.	**Time-consuming to create & maintain** – Detailed diagrams quickly become outdated during rapid development.
Standardized notation – Provides an internationally recognized way to describe systems.	**Low practical usage for many diagrams** – Only a few diagrams are commonly used in industry.
Supports both structural and behavioral modeling, making it suitable for large systems.	**Often not aligned with agile/DevOps workflows**, which favor lightweight documentation.
Helps with documentation & maintenance – Serves as long-term reference during system evolution.	**Difficult to keep synchronized with real code** – Diagrams frequently drift out of sync.
Useful in requirements analysis (use case diagrams) and early design phases.	**Tools can be heavy or inconvenient** – Traditional UML tools are often slow or complex.
Effective for system architecture planning (component, deployment diagrams).	**Interpretation differences** – Some UML constructs are understood differently across teams.
Adopted in specific industries (automotive, aerospace, embedded systems).	**Less valuable for small or fast-paced projects** where code and tests communicate design better.