

# Applying CoCoViLa Model- Based Software Development technology on industrial (Bole Manufacturing Scheduling) project

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# The problem description

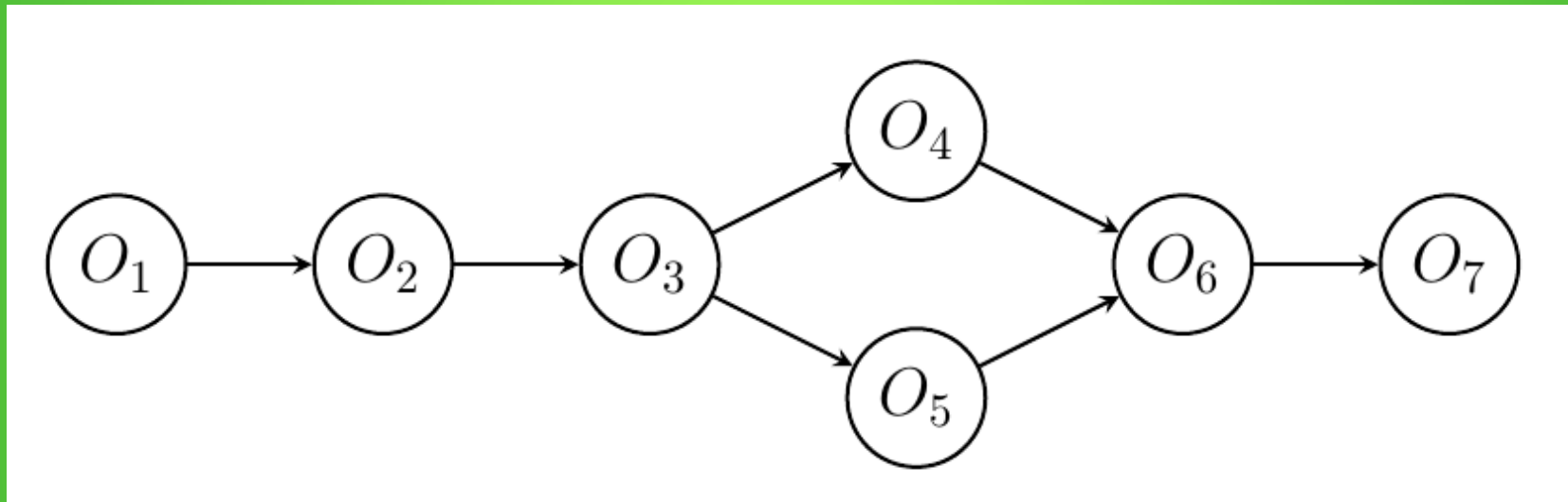


**“It took us five days to figure out how to finish our project two days early. That’s why we’re three days late.”**

# Manufacturing Scheduling

- **Activities:** technological operations (e.g., sanding, painting, gluing, oiling)
- **Resources:**
  - **Renewable Resources:** workers and machines
  - **Non-Renewable Resources:** power, time, money, material, etc
- **Constraints:** due dates, cost, precedence, capacity, power, ...
- **Criteria:** priority, preference, objectives, ...

# Process description



# Scheduling guts

- **Modeling:** real-world domains are hard to model
- **Complexity:** large number of combinations, different options, NP
- **Criteria/Objectives:** difficult to quantify, multiple objectives, conflicting objectives
- **Uncertainty:** unexpected events, new orders hurry orders, cancellations, changing cost/priorities, failures, ...
- **Domain-Specific Dependencies:** unique heuristics and rules make it hard to transfer results from one domain to another

# Roadmap of Software Development

- Idea
- Requirements / Interviewing
- UseCases
- Class Hierarchy
- Process model
- ...

# Applying Ontologies

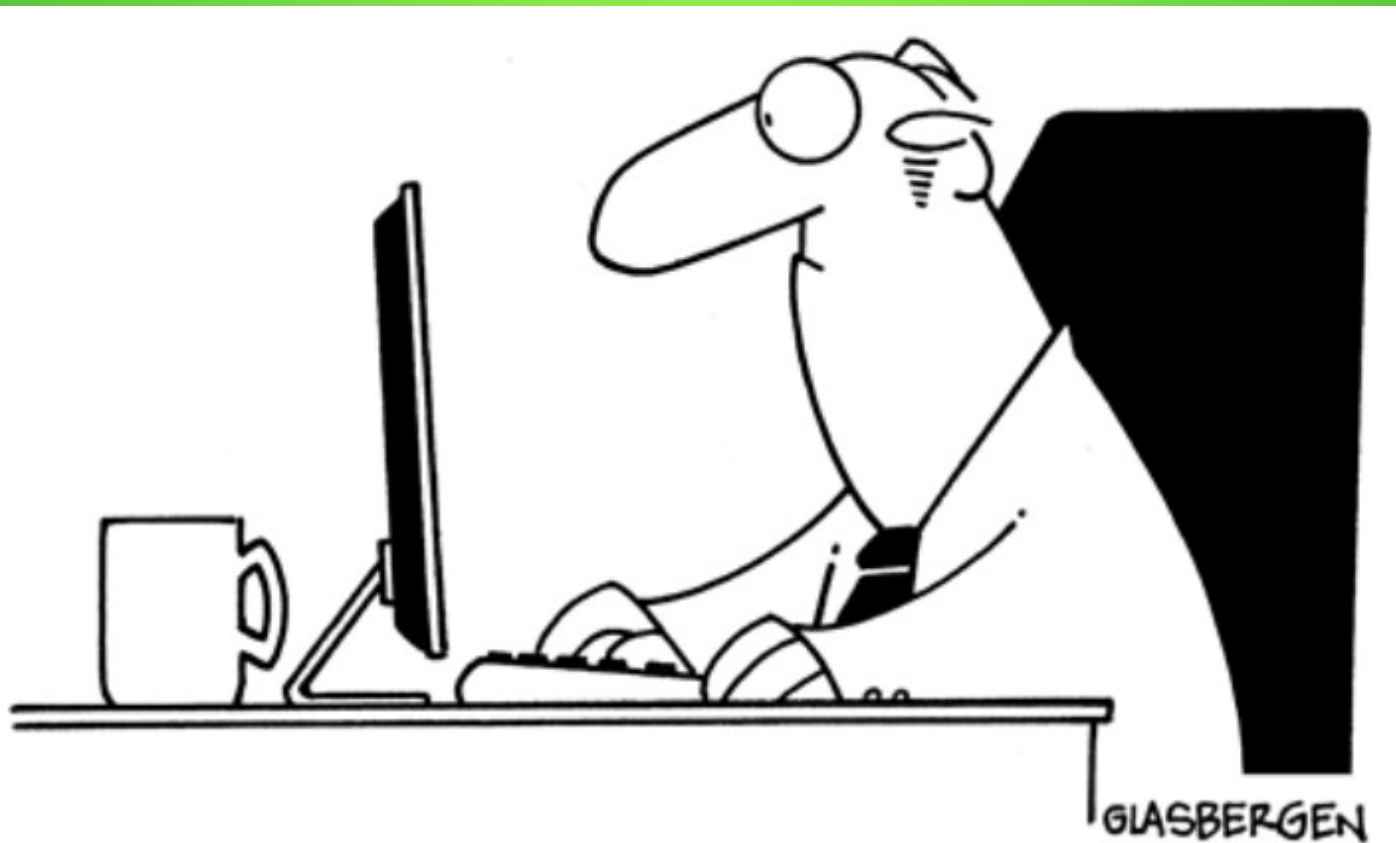
- We need common wocabulary!

# Lessons learnt

- system ontology differs from user ontology
- ontologies are difficult to understand without proper presentation
- formal ontologies are useful, but require alot of effort for building them
- DSL meta-model ontology comes to help!?



# Thank You!



**“Due to a scheduling conflict, yesterday has been rescheduled until tomorrow, tomorrow has been moved to today and today has been postponed indefinitely.”**