Business Processes Modelling BPM - 295AA - 48h (6 cfu) (1st sem., project + oral exam)

(borrowed from DSBI)



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Business process management



Giving shape to ideas, organizations, processes, collaborations, practices To communicate them to others

To analyse them

To change them if needed





objectives



Key issues in Business Process Management (patterns, architectures, methodologies,...) Analysis techniques and correctness by construction (soundness, boundedness, liveness, free-choice,...)





Graphical languages (BPMN, EPC, BPEL, ...) Tool-supported verification (WoPeD, YAWL, ProM, ...)



Structural properties, behavioural properties and problematic issues (dead tasks, deadlocks, ...)

Performance analysis (bottlenecks, simulation, capacity planning,...)





Formal models (automata, Petri nets, workflow nets, YAWL, ...) Process mining (discovery, conformance checking, enhancement,...)



A sample BPMN model



Process mining





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Learning outcomes

Understand a concrete instance of the problem



Abstract modeling and generalization: Visual notation, informal, intuitive; Mathematical notation, rigorous



General solutions from formal reasoning: provably correct



Implementation and application to concrete instances: Formal models used in prescriptive manner (correctness by design)



Partner synthesis in collaboration diagrams Tools for efficient analysis of soundness Behavioural mining

...

