Visualizing Use Case Sets as BPMN Processes



Problem Description

Especially in SOA projects but in other projects as well, software has to support business processes. These processes are part of the software requirements as well as the Use Case descriptions. Both models overlap which wastes time for creating and maintaining the software requirements.

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Generate BPMN processes from textual Use Cases

- Generate sequential flows for scenario
- Create decision points for extensions
- Match Pre- and Postconditions of Use Cases
- Join Use Cases

Advantages

- Useful to generate skeleton business processes
- Helps visualizing and identifying dependencies between Use Cases
- Helps validating dependencies between Use Cases
- Helps validating pre- and postconditions of Use Cases

Open Questions for Future Work

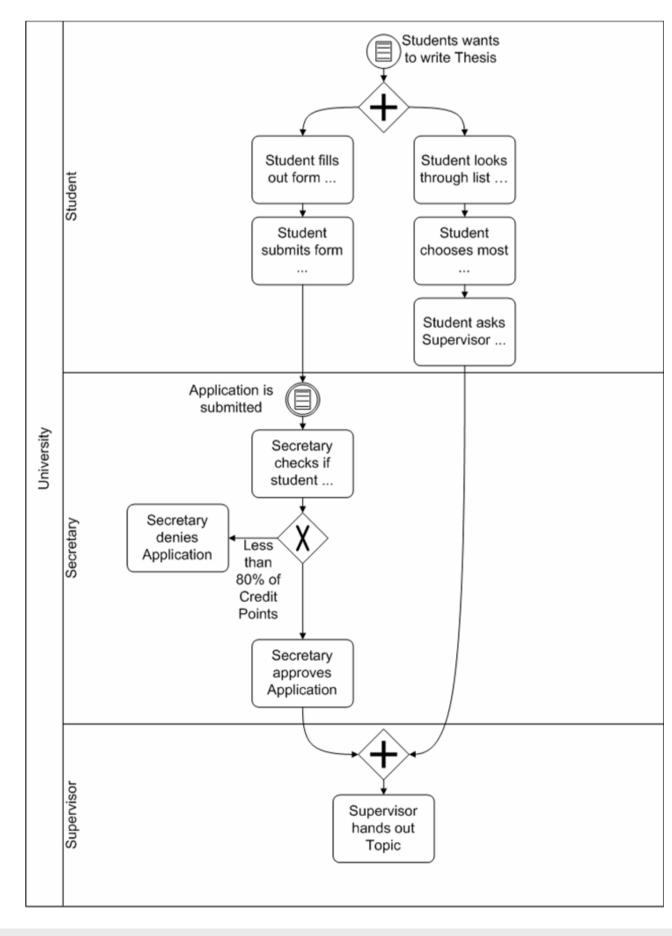
- Non-Literal matching of pre- and postconditions
- Also useful for comparing business processes with given Use Cases?
- Advanced Tool-Support

Use Case	#1: Student applies for Thesis			
Primary Actor	Student			
Stakeholders	Student: wants to apply easily Secretary (Academic Examination Office): wants easy to use/read forms for further handling registration			
Minimal Guarantees	none			
Success Guarantees	Application is submitted			
Preconditions	none			
Triggers	Student wants to write thesis			
Main Success Scenario	1	Student	selects "Apply for Thesis"	
	2	System	Shows application form	
	3	Student	fills out application form and submits it	
	4	System	shows confirmation	
Extensions	none			

Use Case	#2: Academic Examination Office approves Thesis			
Primary Actor	Student			
Stakeholders	Secretary (Academic Examination Office): wants easy to use/read forms for further handling registration Manager (Academic Examination Office): wants short handling times			
Minimal Guarantees	Student's data are handled according to regulations			
Success Guarantees	Student may write Thesis			
Preconditions	Application is complete			
Triggers	Application is submitted			
Main Success Scenario	1	Secretary	Selects "Process Applications"	
	2	System	Shows list of all applications	
	3	Secretary	checks if student has 80% of Credit Points	
	4	Secretary	marks application as approved	
	5	System	stores application as approved	
Extensions	3a If Student has less than 80% of Credit Points then Secretary denies Application			

Use Case	#3: Student selects Topic			
Primary Actor	Student			
Stakeholders	Student: wants to have interesting topic			
Minimal Guarantees	none			
Success Guarantees	Student has picked a Topic			
Preconditions	no	none		
Triggers	St	Student wants to write thesis		
Main Success Scenario	1	Student	chooses most interesting topic	
	2	Student	asks Supervisor to get the topic	
	3	Super- visor	Enters student for topic	
	4	System	saves topic with student and shows confirmation	
Extensions	none			

Use Case	#4: Supervisor approves Topic		
Primary Actor	Supervisor		
Stakeholders	Supervisor: wants no paperwork Secretary (Academic Examination Office): wants easy to use/read forms for further handling registration		
Minimal Guarantees	none		
Success Guarantees	Student has Topic		
Preconditions	Student may write Thesis Student has picked a Topic		
Triggers	none		
Main Success Scenario			
	1	Supervisor	hands out Topic
Extensions	(left out)		





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