

Declarative Workflow as Dynamic Condition-Response Structures and the Resultmaker Process Matrix

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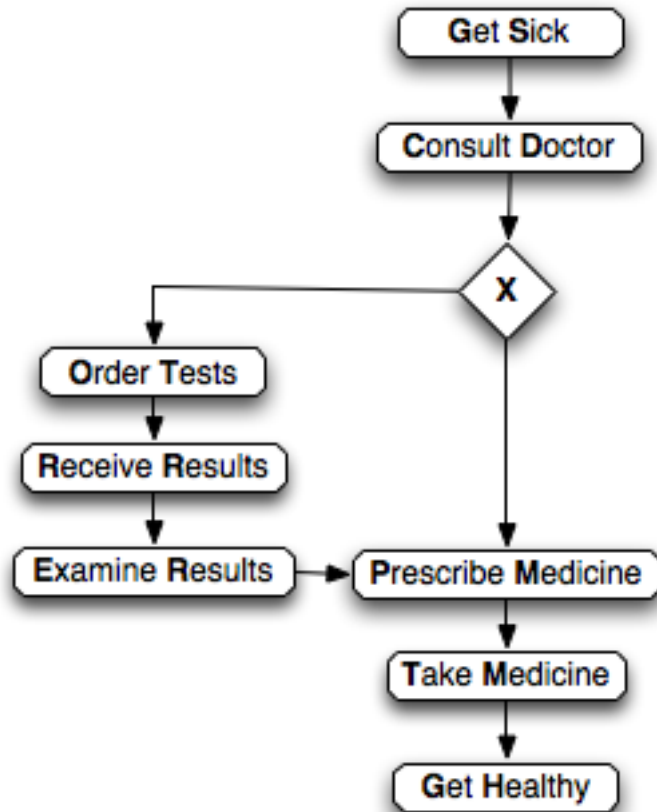
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2009-12-07

Overview

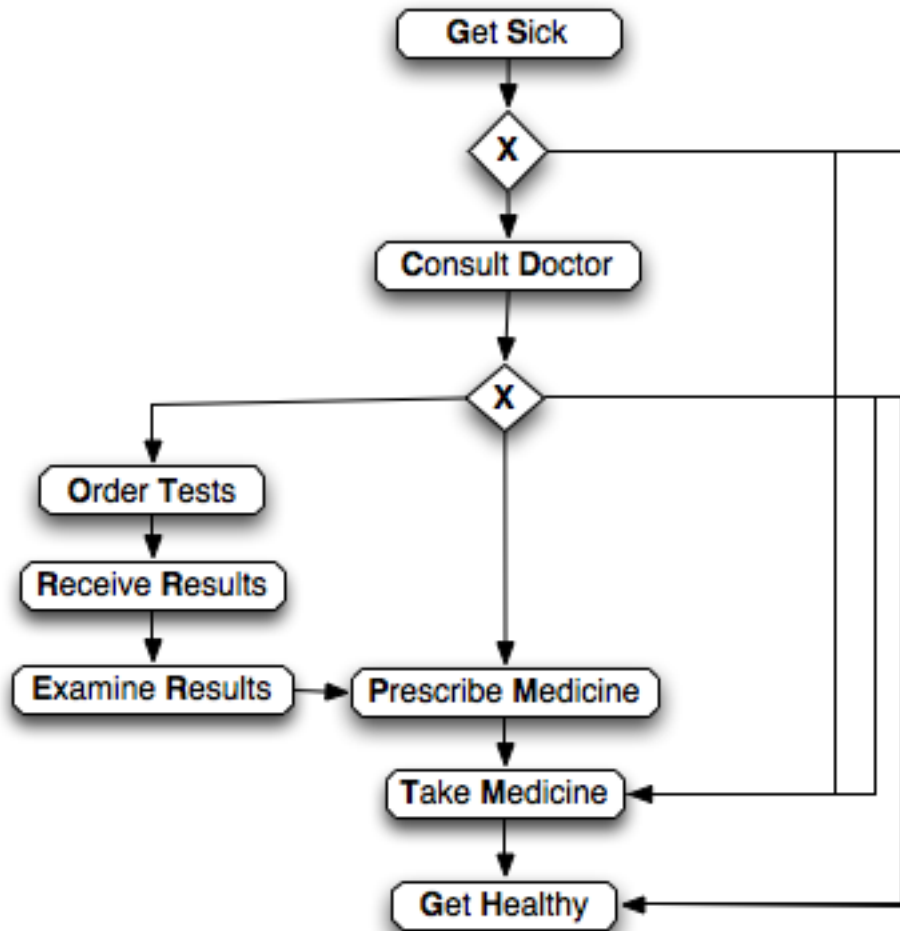
- BPMN Flow Chart – Get Sick example
- Imperative verses Declarative
- Dynamic Condition Response Structures (DCRS)
- BPMN and DCRS comparison
- Future work

BPMN Flow chart – Get Sick example



- GS, CD, PM, TM, GH
- GS, CD, OT, RR, ER , PM, TM, GH
- GS, GH
- GS, TM, GH
- GS, CD, GH

BPMN Flow chart – Get Sick example updated

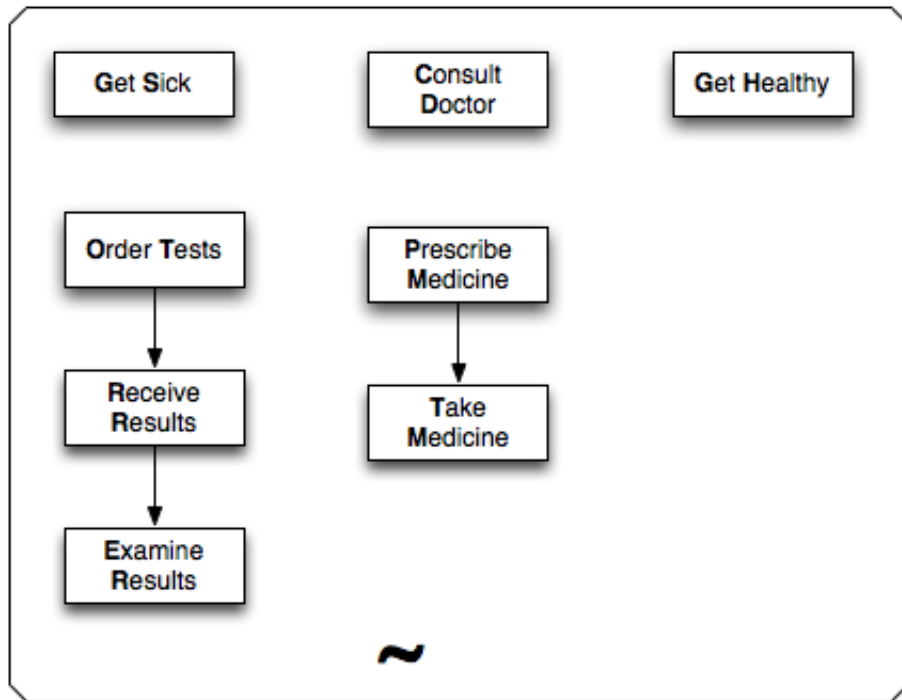


- GS, CD, PM, TM, GH
- GS, CD, OT, RR, ER , PM, TM, GH
- GS, GH
- GS, TM, GH
- GS, CD, TM, GH
- GS, CD, GH
- **GS, TM, CD**
- **GS, CD, OT, RR, ER, CD**

Imperative verses Declarative

- Imperative models (e.g. Flow charts)
 - Good for Processes with static behaviors and no deviations
 - Too rigid, impose a strictly pre-defined execution procedure
 - Specify “How” the process should behave, so over specification
- Declarative Models
 - Specify “What” results a model should produce, instead of “How”
 - Start with all possible flows, restrict with constraints to get desired behavior
 - Suitable for rapidly evolving processes and dynamic changes

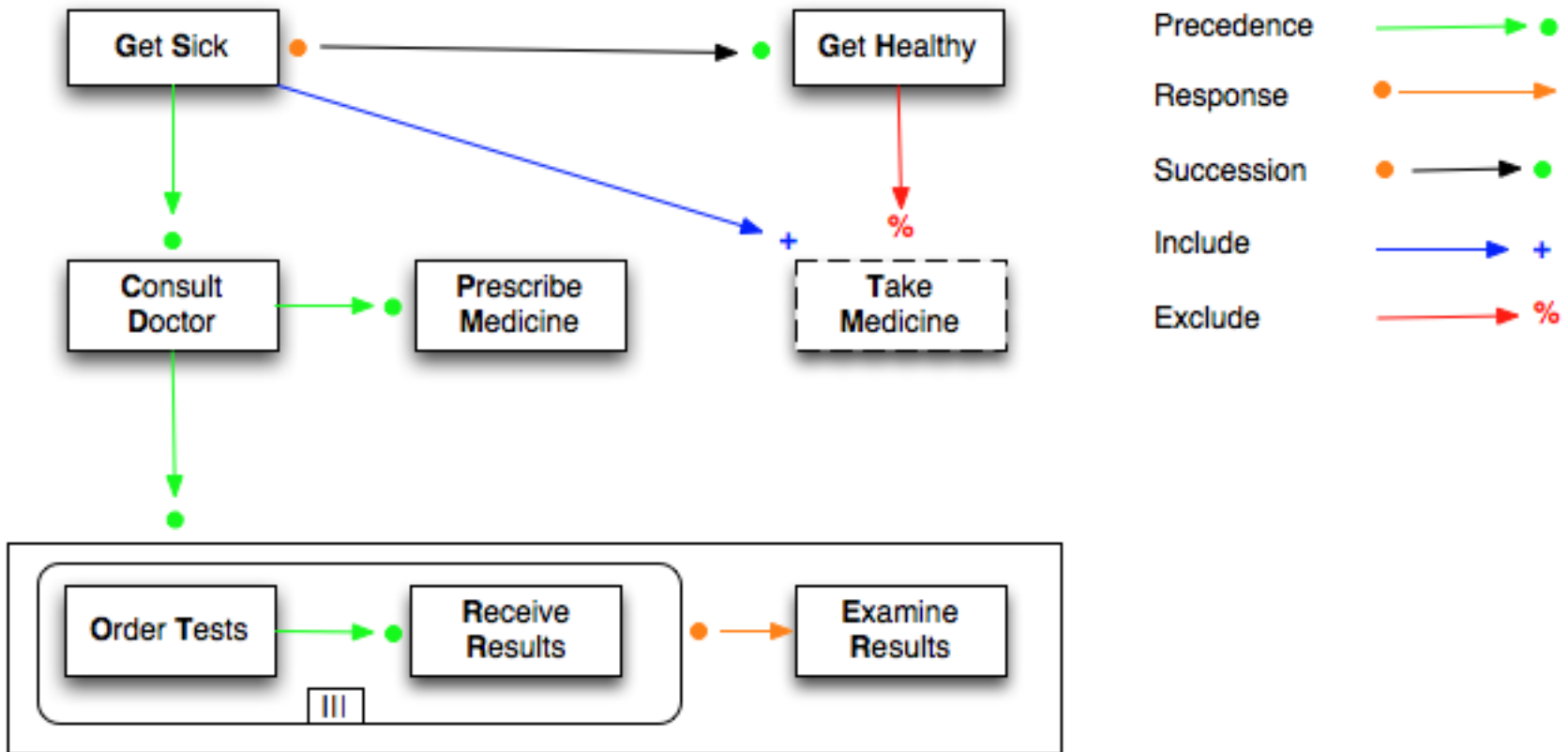
BPMN Ad Hoc Process



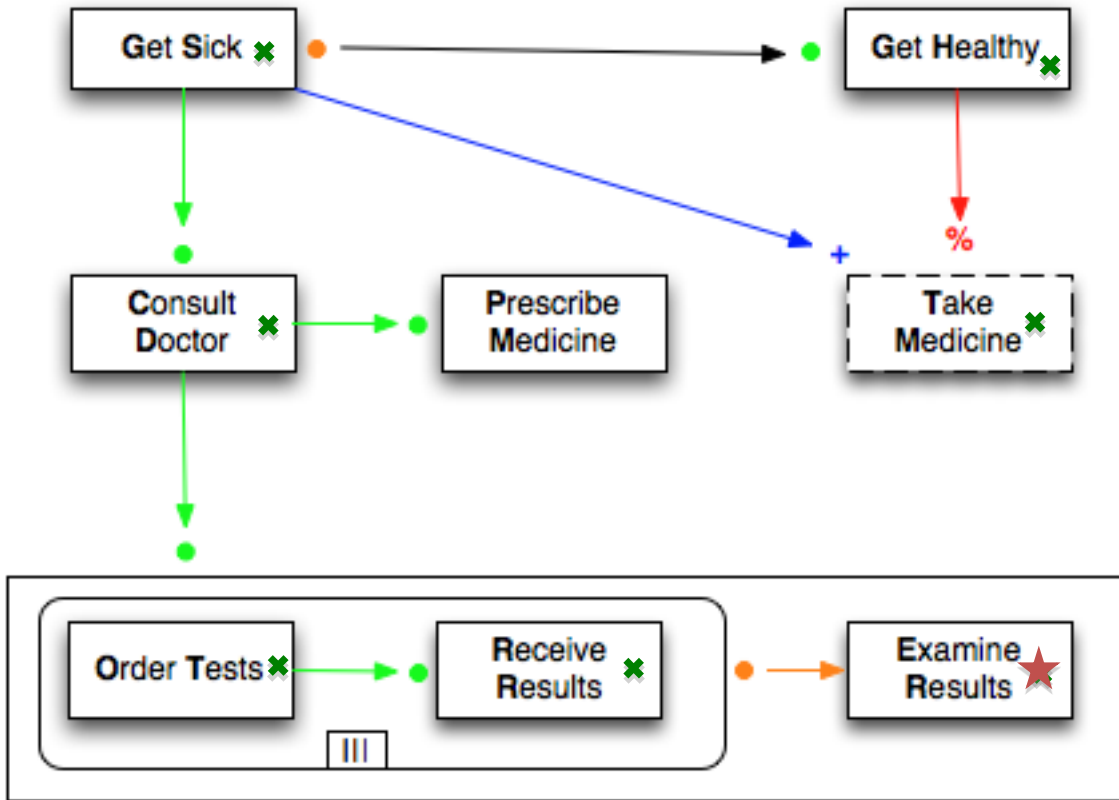
+ Completion condition

- No clear semantics in BPMN specification.
- Not implemented by many vendors

Dynamic Condition-Response Structures (DCRS)

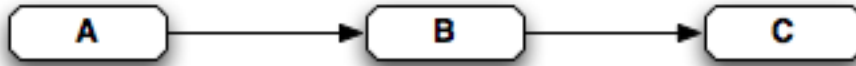


Dynamic Condition-Response Structures (DCRS)

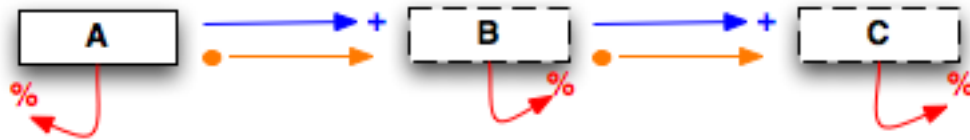


- GS, GH
- GS, TM, GH
- GS, CD, [OT, RR]*, ER , GH
- GS, CD, [OT, RR], GH

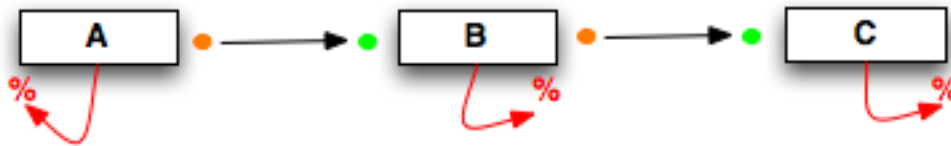
BPMN and DCRS comparison



Sequence Pattern in BPMN

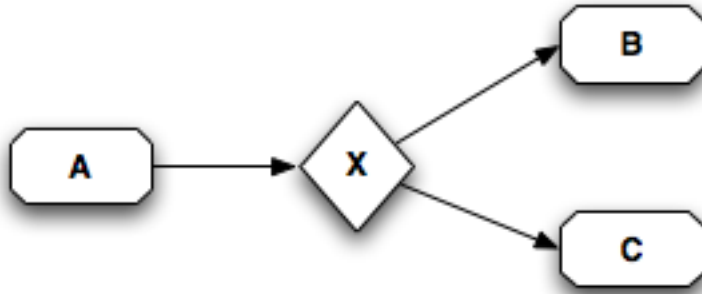


Sequence Pattern in DCRS (using dynamic include/exclude)

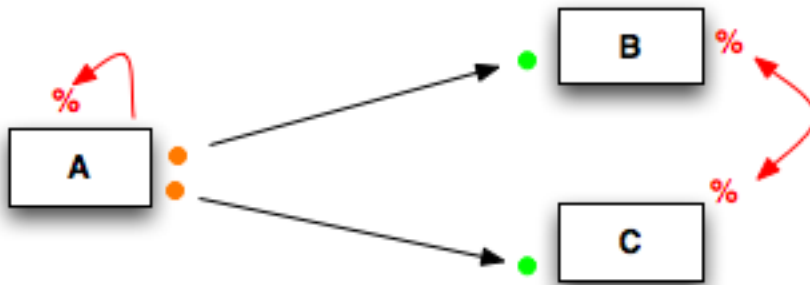


Sequence Pattern in DCRS (using succession)

BPMN and DCRS comparison

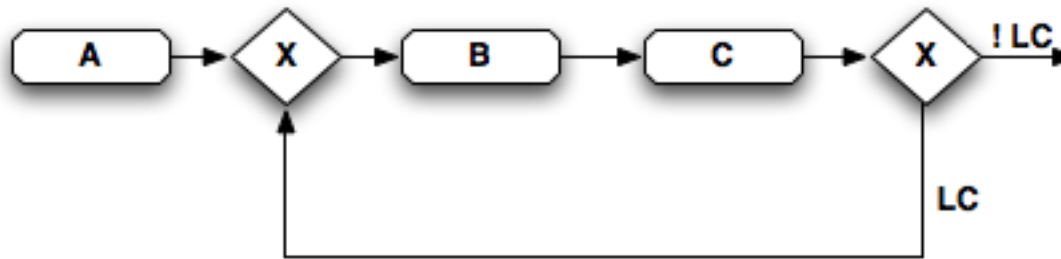


Exclusive Choice Pattern in BPMN

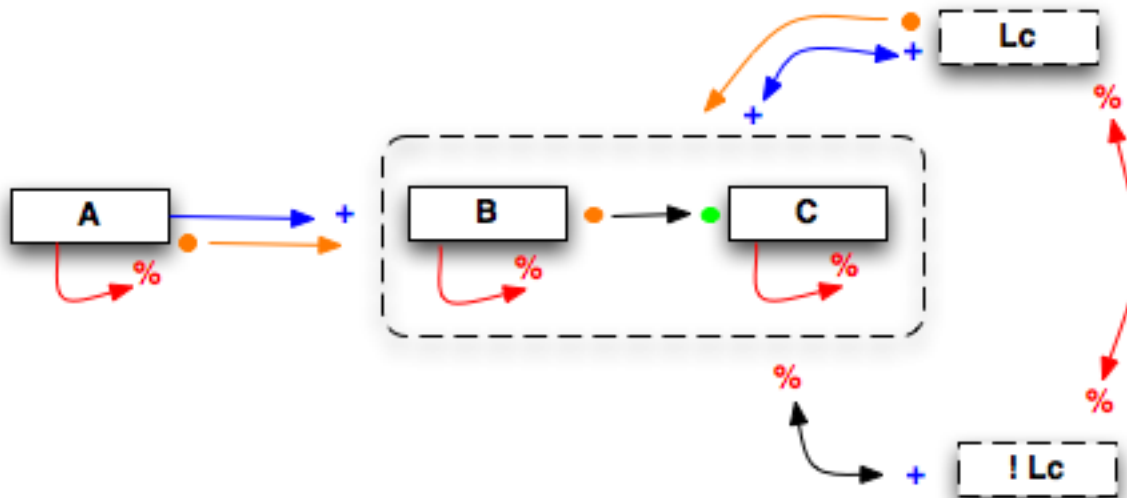


Exclusive choice Pattern in DCRS

BPMN and DCRS comparison



Structured Loop Pattern in BPMN



Structured Loop Pattern in DCRS

Future work

- Add Roles & Access rights
- Add Time and Data
- Add Exception & compensation
- Continue modelling workflow patterns
- Integrate with Pervasive User Interfaces

Thank You
Questions and Comments