Università della Svizzera italiana | Faculty of Informatics

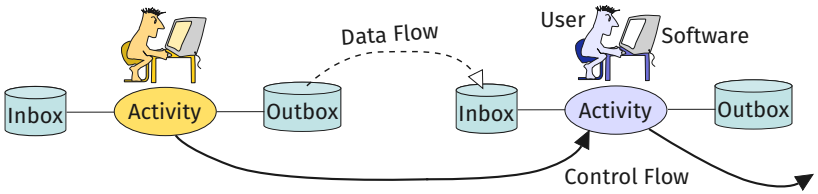
Business Process Modeling, Management and Mining

Business Process Modeling

Prof. Cesare Pautasso
http://www.pautasso.info
cesare.pautasso@usi.ch
@pautasso

Activities

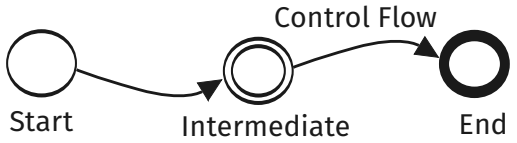
Activities represent atomic tasks of a process, which consume an input to produce an output.



Activities are executed whenever they receive control and some data conditions are satisfied

Events

Events represent asynchronous interactions of the process with the external world



Start Events: when does the process begin?

Intermediate Events: wait for something to happen (catch), or send a notification (throw)

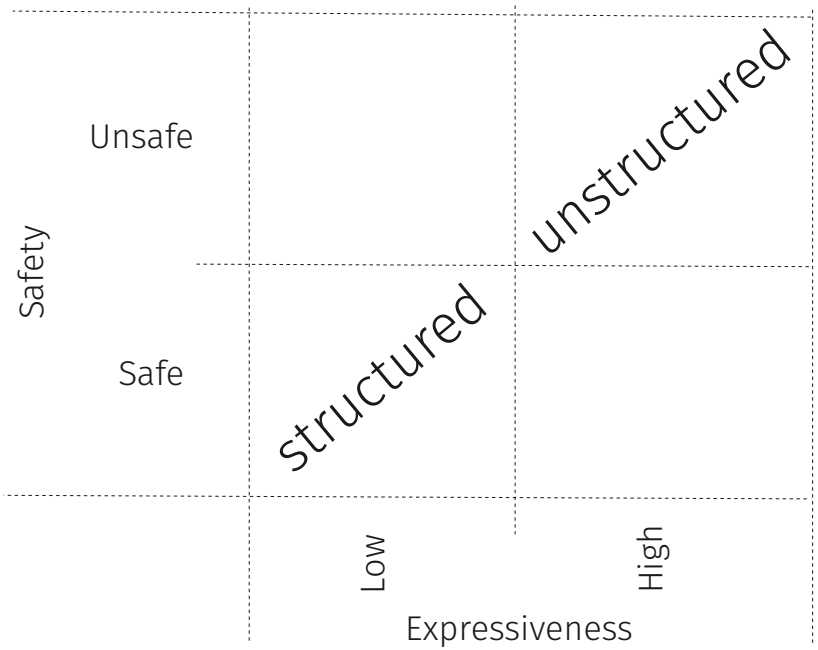
End Events: when does the process finish?

Control Flow

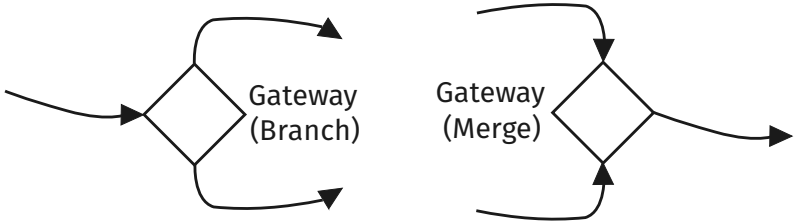
The control flow graph defines the partial execution order of activities and events

Structured Control Flow well-known sequential programming constructs are used to define the order of execution (if, switch, while, for, foreach) with the addition of explicit parallelism constructs (fork/join, parallel foreach)

Unstructured Control Flow directed (a)cyclic graphs of activities and events are used to specify arbitrary dependencies

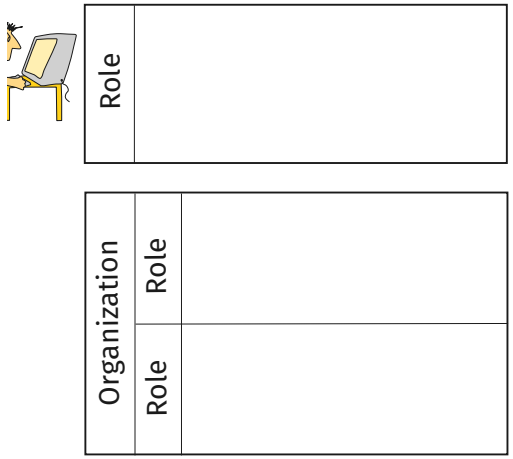


Gateways



Unstructured languages use gateways to represent branches (forks) and merges (joins) in the control flow graph

Resources



Roles are represented using the layout.

Activities associated with a Role are positioned in the corresponding "swimlane".

Data

Activities produce and consume data objects, whose lifecycle is tied to a process instance.

Persistent data survives beyond the processes that share it using data stores

Processes may also use messages to exchange data (and events to react to message arrivals)