

Business 2710

Class 14 Handout

In groups of 2 to 4 students, identify realistic situations in a business and process where you might need to apply the following control flow patterns. The description from the textbook is provided for your reference. For extra marks, you may also try to model the pattern using a workflow net.

1. The OR split (but not the XOR split)

The OR split routes the thread of control in a given branch into one, several or all outgoing branches on the basis of an execution decision(s) made at runtime.

2. The exclusive choice (but not the deferred choice)

The exclusive choice occurs where the process contains sufficient information to determine where to route the thread of control when the decision construct is reached and does so automatically.

3. Structured partial join

This is a pattern describing an approach to AND-join implementation that allows the join to fire once a threshold of the incoming branches have been enabled, provided there is certainty that all incoming branches will ultimately be triggered. After the join has fired, it cannot do so again until a trigger has been received on each of the remaining (untriggered) branches. The Structured Partial Join can only operate in a process that is structured in form (i.e., has “balanced” splits and joins).

4. Recursion

Recursion provides a means of repeated execution of a task through the use of self-invocation. An example of this pattern is where the implementation of task A is made up of a set of tasks that also include task A, hence during its execution, task A may invoke subsequent instances of itself in order to fulfill its operational requirements.

5. Critical Section

This requires that two or more regions of a process model are identified such that the thread of control can only be active in one of these regions at any time.

6. Interleaved Routing (but not sequential or interleaved parallel routing)

The Interleaved Routing pattern requires only that none of the tasks in a group execute concurrently (at the same time). They may execute in any order and all of them must execute exactly once.

7. Cancel Region (but not cancel case or cancel task)

This pattern provides a general form of cancelation that is able to terminate a group of tasks.