

BUSI 2710

Class 14

Examples for the workflow patterns:

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

A company may sell a product, and may sell a warranty or service plan for the product. However, the company may also sell service plans even when the customer does not purchase the product (for example, because she purchased it earlier or elsewhere). Thus, either or both activities “purchase product” and “arrange service plan” may be executed.

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

A company may require pre-payment of good from customers when the previous credit check has shown 'bad credit'. In this case, the company may not wish to give the customer or the sales person the choice of pre-payment, but may mandate pre-payment.

3. Structured partial join

A company that is hiring people for a licensed (regulated) industry (e.g. nurses, doctors, teachers) and the applicants have worked in that industry before. While normally the job orientation can only begin after licensing information is received and the employment agreement has been signed, the company may begin with orientation even before the licensing information is received, because it is understood that the person is already licensed (as she/he has worked in that industry before).

4. Recursion

A company checks and fixes electronic parts. The process to “check the part” is as follows:

“Identify faulty components” -> “Fix the part” -> “Check the part”

The final step, “check the part” is itself that process again. The reason is that any fix can introduce other errors or faults, and consequently these need then to be fixed, etc.

The key issue is to determine when the recursion stops. In this example, the recursion stops when no faulty components are identified. In that case, “fix the part” and “check the part” do need to be done anymore.

5. Critical Section

A company needs to back-up its computer system. As part of this process, the earlier back-up copy is deleted. Another process in the company regularly tests the back-ups to make sure they work. The two processes cannot at the same time delete the back-up copy (in one process) and test it (in another).

The key issue here is that the mutual exclusion is not due to resource availability, but is due to the logic of the process/workflow.

6. Interleaved routing

A company services cars. As part of the regular winter-check for a customer's car, the tires will be rotated, the washer fluid topped up, and the oil changed. The order of the tasks doesn't matter, but they cannot be done at the same time: For the tire change, the car has to be jacked up, so there is no access to the engine to top up fluid or change oil. For the oil change, the car has to be lowered over a pit, so that the tires cannot be changed, nor can the fluid be topped up. For the fluid top-up, the car has to sit on the ground, so the tires cannot be rotated, nor can the oil be drained.

The key issue here is that the interleaving is not because of resource constraints (e.g. because there is only one mechanic), it is because of the process logic.

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

A customer wishes to cancel an order for which he has already paid and which is already being picked and packed for shipping. The entire case cannot be cancelled, as other actions are now required, e.g. Refund the money and return the goods to the warehouse. For the same reason it is also not sufficient to just cancel the shipping task and let the process continue. Thus, a certain region of the process needs to be cancelled (shipping, tracking, delivery), and, in addition, the case must now include other, compensating activities.