



Politecnico di Milano

Facoltà di Ingegneria dell'Informazione - Polo Regionale di Como

via Anzani 42, 22100 Como

Tel.: 031-332.7332 Fax: 031-332.7321

prof. Giuseppe Pozzi - Workgroup and Workflow Management Systems

e-mail: giuseppe.pozzi@polimi.it

Workgroup and Workflow Management Systems-Written Test of Sep. 7th, 2010

Family name _____ First name _____ Politecnico ID # _____

Master Course in _____

Please, fill in this sheet carefully. All answers must be provided on this sheet, which must be returned at the end of the test. No additional sheet will be considered¹.

Rules. The examination is passed if the student obtains at least 13 points out of a total of 25 points available for this test, and the grand total of obtained points, including those obtained with a presentation or a project, is greater than or equal to 18. Use of books, handbooks, lecture notes is not permitted: only the sheets provided by the teacher can be used. All the questions must be answered, at least partially: tests in which even one question has not been answered will not be evaluated. Duration of the test: 2 hours.

Exercises

(1) Provide a taxonomy for expected exceptions with respect to the techniques used to map them inside activity graphs.

space reserved to your answer

¹**Remark.** Complete specifications whenever needed. Clarity and order will be taken into account for the evaluation.

(2) In order to provide better quality products to its customers, **Inamra**, a small-medium weaving company, is planning to install a new system to support its quality department during the cloth review phase. As a roll of cloth gets out of the power loom, it needs to be revised to check for possible faults and to be classified according to some quality parameters. Rolls are identified by a roll code and described by a width, length, and type of material (e.g., cotton, wool, silk, acrylic).

Each type of fault holds a specific weight which reflects how deep it impacts the product quality. A roll of cloth can have as many imperfections and, for that reason, the weight of each imperfection is summed up. According to this number, the roll of cloth is divided in four categories, namely *A*, *B*, *C*, and *D*. In case of quality *A* or *B*, the roll is sent to the cloth-dyeing factory to receive the predefined color. If the roll is classified as *C*, it is stocked and sold at a reduced price. Products of category *D* cannot be sold, but instead, they are analyzed by the quality department experts. If the problem is caused by external factors, such as yarn low quality, a re-negotiation is started with the yarn provider in order to come up with a money reimbursement or any other kind of agreement. Such process involves the quality department and the account department of **Inamra**.

When the dyed rolls of cloth come back to **Inamra**, they are again reviewed by a quality process which works quite similar to the previous one, changing of course, the possible imperfection list. Now the roll of cloth is classified as *first*, *second* or *reprocess*. The first two are stocked separately and sold to the customers at different prices. The third one, *reprocess*, is sent back to the cloth-dyeing factory in order to try to correct the faults: if this is not feasible, a re-negotiation process is started with the cloth-dyeing factory.

Provide a reasonable schema of the outlined process(es), according to one of the following modeling formalisms: WIDE model, Workflow Management Coalition model. Please, suitably model all the *pre-conditions* and *post-conditions* of every task.

(3) With respect to the process described in Exercise 2, provide an example of a reasonable mapping of the process model onto tables of a relational DBMS.

space reserved to your answer - exercise 3

space reserved to your answer - exercise 2

(4) Describe the main goals of the Workflow Management Coalition. Who are the typical members of such a coalition?

space reserved to your answer

This part for use by the teacher, only.

Ex. 1	Ex. 2	Ex. 3	Ex. 4	Total
