



Politecnico di Milano

School of Industrial and Information Engineering
Polo Territoriale 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 Feb. 18th, 2014

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) Describe the main services provided by the interface between a Workflow Management System and the external information system (EIS).

space reserved to your answer

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

(2) CopperWing (CW) is a company specialized in repairing motorbikes of the Wave brand, and wants to improve the customer relationship management by a Workflow Management System.

The customer calls CW to agree the date and then he/she hands his/her motorbike to the garage: frequent customers, whose data are stored by a suitable database table, may pick a courtesy motorbike whilst the repair takes place. As soon as one of the mechanics of the garage is available, he/she performs a check-up of the customer's motorbike, analyzes its current condition, and issues a cost estimation for the repair. A secretary of CW contacts the customer, asking for his/her approval of the expense. If the customer accepts the estimation, the same mechanic starts the repair: otherwise, the customer has to return the courtesy motorbike - if any -, to pay the rental at a charge of 25.00 euros a day, and to pick his/her motorbike back.

After the motorbike has been repaired, a secretary of CW informs the customer. When the customer is back at CW, the rented motorbike - if any - is refueled, and the customer is charged for the gasoline. The customer pays the invoice and leaves CW with his/her repaired motorbike.

Provide a reasonable schema of the outlined process(es), according to the modeling formalism of WIDE. 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 the information model, including all the external database tables.

space reserved to your answer - exercise 3

space reserved to your answer - exercise 2

(4) With respect to the process described in Exercise 2, provide the complete graph of transactions, labelling every transaction/subtransaction as *critical* or as *non critical*.

space reserved to your answer

This part for use by the teacher, only.

| Ex. 1 | Ex. 2 | Ex. 3 | Ex. 4 | Total |
|-------|-------|-------|-------|-------|
| 4 | 12 | 5 | 4 | 25 |
