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Business Process Modelling – Written Test of Jan 31st, 2017

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 considered[1].

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) For the process model in BPMN of Figure 1, compute the control flow complexity (CFC), and the size and coupling of the organizational model. Explain how you computed the three metrics.

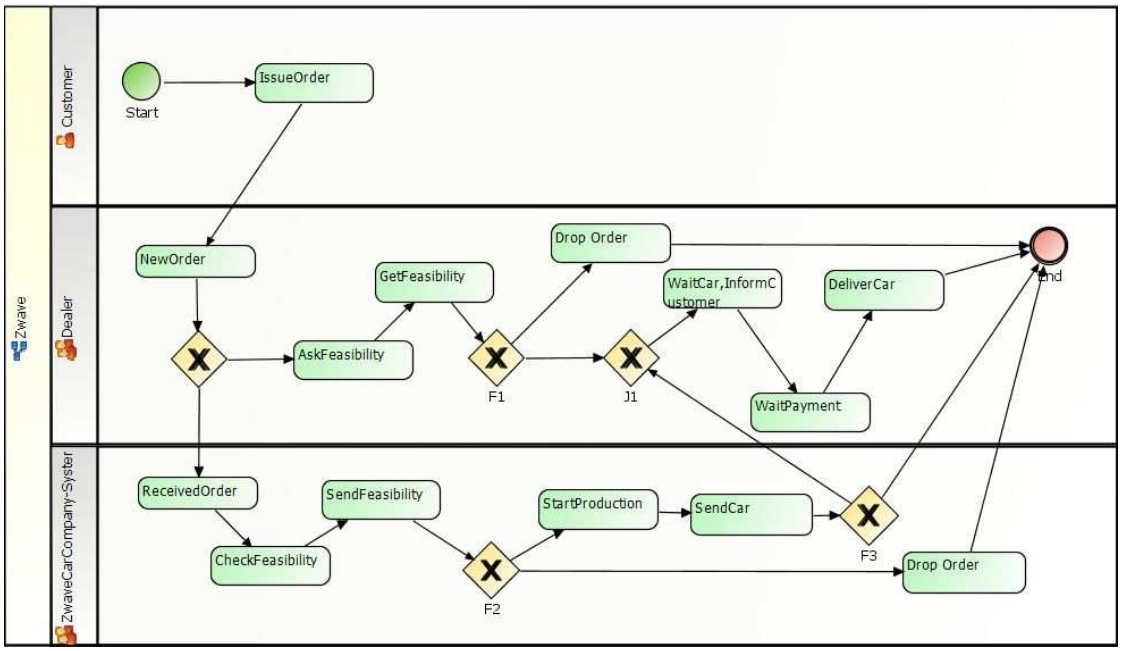

Figure 1: "X" means XOR, "+" means AND split/join

space reserved to your answer

CFC =

Size =

Coupling =

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

(2) The ParkYourCar (PYC) company rents long-term parking places in its downtown silo.

The customer logs into the company's web site, declares his/her requirements (small-size car, med-size car, big-size car) and expected duration of the rental (1 month, 3 months, 6 months, 1 year) via the `IncomingRequest` table. PYC checks the availability (the `ParkPlace` table is available) and, when places are available for the proper car size and duration, informs the customer via an e-mail message. The customer, then, has to confirm the request - and the process continues, or to cancel the request - and the process ends.

PYC sends out the invoice and, after having received the correct payment (the `IncomingPayment` table is available), sends out to the customer the password to open the entrance gates of the silo. One week before the end of the rental (by a proper *wait* task), PYC sends out an e-mail message to remind the customer about the end of the rental.

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. Also provide a reasonable description of the needed external database tables.

(3) With respect to the process described in Exercise 2, design the graphical structure of the local transaction (*business* transaction) which includes the activities of issuing the invoice, of receiving the payment, and of sending out the password.

space reserved to your answer - exercise 3

space reserved to your answer - exercise 2

(4) With respect to the process described in Exercise 2, design a Chimera Exception trigger that monitors a late reply by the customer to the e-mail notification from the organization.

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