

Name _____

Lastname _____

Student number

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Software Engineering academic year 2006-07

Rules

- This is a closed books exam.
- The operation of any electronic device is prohibited (e.g, no calculator, phone or PDA).
- Write clearly and put your name and student number on each page you hand in.
- If possible, write in English, otherwise in Dutch.
- If you have passed the practicum last year and do not want to answer to the lab questions 8–10 please mark this box

On-line exam registration system

The Rector of the University of Nowhere has decided to have an information system for managing the student registration to exams. The students should be able to register/cancel/get information via the Web to all exams of the University. Students need to authenticate and their privacy should be guaranteed. The system should not cost more than 200.000 euros to design, implement and deploy, and—if possible—should be maintainable by one person working full time. The University of Nowhere has an Oracle database where all information relating to students and personnel is stored. The system should be up and running by the next academic year in 8 months.

Questions

1. List the requirements coming from the **On-line exam registration system** in a form of your choice (motivate the choice).
2. Classify the requirements into functional and non-functional, and into user and system requirements (explain the classification).
3. Prioritize the requirements on the basis of the description and your personal understanding of the problem (provide explanations for the choices).
4. Choose the most appropriate graphical representation model for the requirements and use it for the requirements with highest priority of the **On-line exam registration system**.
5. Which process model would you use for engineering the **On-line exam registration system**? Why?
6. Give the cost estimation (time and money) following Parkinson's law. If you need additional assumptions for estimating the costs, please state which assumptions you made.
7. Considering reuse, define the concept of object, component and web service and explain their role in reusability.

Consider the following set of operations on a UNIX shell:

```
(command 1) ls -a
```

```
.  
..
```

```
(command 2) svn checkout file:///Users/pippo/tentamen/  
A tentamen/exam.txt  
Checked out revision 2.
```

```
(command 3) cd tentamen
```

```
(command 4) ls -a
```

```
.  
..  
...  
.svn  
exam.txt  
tentamen  
examRevision.txt
```

<editing of the file exam.txt occurs via a word processor>

```
(command 5) svn update exam.txt  
C exam.txt  
Updated to revision 3.
```

```
(command 6) svn commit
```

8. Assuming that the output of (command 1), (command 2), and (command 3) are correct and no other concurrent processes are running, is the output of (command 4) correct? Which files or directories are missing? Which ones should not be there?

9. In your own words, what will be the result of the operation (command 6)? If it is a conflict, what will you do to resolve it? If it is not a conflict, assume another user has modified the file exam.txt but not yet committed it, what will he do to resolve the conflict?

10. Describe the XP methodology and say why you would or would not use it in the case of the web service challenge as described during the labs.