Software Engineering
Academic year 2007-08

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.
- Your choice of language: write in English or in Dutch.

Golf club

The owner of a golf club, having closed his previous fiscal year with a revenue of over 1 million euros, would like to modernize his club. He is thinking of coupling his existing database of members with sensors and card readers. He wants that members have a card with which they can gain access to areas of the golf club, rent carts, reserve the track and pay their drinks at the bar. He wants that a real-time monitoring of the club is performed showing who is in the club at any given moment and where the carts are. He also desires to have the possibility of reserving and managing reservations on-line via the Web. He is willing to in vest as much as half of his revenues from the previous year. The owner would like to have the system implemented within 12 months and that the installations which require to shut down the club happen at months 8, 9, 10 (that is, when the club has its seasonal closing).

Questions

1. List the requirements coming from the Golf club 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. Which process model would you use for engineering the Golf club? Why?
5. Identify activities, tasks and milestones to run the project.
6. Make a temporal planning of the execution of the project based on the activities, tasks and milestones identified at the previous point and represent it graphically with a Gantt chart.
7. Explain the differences between the locking approach and the copy-modify-merge one to concurrent resource access.
8. Which approach of the two above does SVN use? Why?
9. Discuss the differences between and similarities of component based architectures and service oriented architectures.
10. Explain what lessons can be learned from past experiences with the components based approach to make service orientation yet more successful.