Name	Signature	Student Id Nr	*Points*

Operating Systems, miniexam 7, 25.4.2016 (6p)

Write your answer on this exam paper in the space given. Please notice, that the exam paper is 2-sided.

Embedded Systems

a) [2 p] In eCos operating system one can implement process synchronization with a monitor like structure, but one must implement it directly with condition variables.
How do you implement the monitor "automatic mutex" in eCos?

Does the "eCos monitor" implemented in this way follow *Hoare (signal and wait)* or *Lampson and Redell (signal and continue)* signaling semantics? Explain.

b) [1 p] How does the eCos interrupt handling differ from that of ordinary operating systems?
Why is it done this way?

Distributed Systems

c) [1 p] In main principles, how do you implement remote procedure call (RPC)?

Give two clear differences between RPC and ordinary subroutine call?

d) [2 p] Assume that program CreateStats uses Products server located in some external server. Products offers various general services (e.g., Products.Inventory or Products.Prices) with its own interface.
How do you implement this your code? How does CreateStats find the node where Products is located and the service Products.Prices there?

How can you make the solution work also in that case, where CreateStats will execute continuously (for weeks or months) and Products server is migrated meanwhile to some other more powerful node?