HELSINKI UNIVERSITY OF TECHNOLOGY

Networking Laboratory

S-38.2188 Computer Networks, Spring 2008

Exercise 4

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1. Write an *essay* on internetworking.

   Explain the tasks of different layers, and how they interoperate. If necessary, use charts to illustrate co-operation of different nodes. To get a practical viewpoint, discuss the following scenario:

   Assume two Ethernet type local area networks, connected with each other by a router. The other network has a WWW server (www.lahi2.fi) and a name server (ns.lahi2.fi, 192.168.2.12) and the other network workstations.

   Describe what happens when a user asks his web browser to download the WWW page `http://www.lahi2.fi/index.html` on his workstation. Assume the workstation caches are empty.

   Describe the address translations and different actions by the protocols in detail. Draw the network topology and a diagram showing protocol messages between network elements.

   Target: The student is able to express technical details in a clear, fluent, and concise manner. The student understands how a layered protocol architecture works in the Internet.

   Note: the target is **not** to learn how to cut and paste text. The essay should not be longer than a couple of pages — it should show your thinking, not everything you can find in the net.