Assignment 1

Groups of 2. Send your answers to pitoura@cs.uoi.gr no later than Monday 3/3

1. Read Section 1.3.1 of Coulouris et. al or Sec 11.1 of Tanenbaum et al. (on the web). Web can be considered as an example of a distributed system. At what extend does the web satisfies the four goals of distributed systems that were set in the lecture? In particular:

Goal 1: connecting users and resources
What are the types of resources shared? How does web address the two problems of sharing?

Goal 2: For each type of transparency, explain the transparency degree offered by the web.

Goal 3: To what extent is web an open system? Briefly mention the protocols used by the web. Give an example of a web policy and a web mechanism (other than caching).

Goal 4: Is web scalable (in each of the three dimensions)? How is scalability at each dimension achieved, that is, which are the scalability techniques used along each dimension?

2. Read the following paper:
Jerome H. Saltzer, David P. Reed, and David D. Clark, "End-To-End Arguments In System Design", *ACM Transactions on Computer Systems*, Vol. 2, No. 4, Nov 1984, p. 277-288 (online copy at the course webpage).
(a) Write a short summary of the paper including the main points made by the authors.
(b) Give arguments against the end-to-end argument.
(c) Provide examples of distributed systems that violate the end-to-end argument.