

# T-110.5140 Network Application Frameworks

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## 4/2014 Examination

The use of a calculator is ok. All other material is forbidden.

Remember to include the following information in your paper: the course name, date, student ID, name, and signature. You can answer in English, Finnish, or Swedish.

**Choose 3 of the 4 topics below** and write essays on them. Each topic has additional questions as hints on what kind of material you should include. Discuss other relevant issues as well. Remember to consider what is important and what is not when writing your essay.

In some questions you are required to state your own views. Pay attention that you also justify your opinions.

### 1. Web performance

You have been nominated to a project manager responsible for the web site of your company. Customers are complaining that the web site is slow to use, especially with mobile devices. What would you do? In your reply you may want to touch the reasons of the slow speed of your site and of the ways you could improve the situation. Remember that you may not be able to fully control what kind of platforms your clients are using.

### 2. Data interchange with binary formats

XML and JSON are widely used data interchange formats. In addition to these a number of binary formats for data interchange have been proposed. Describe why such formats are appearing and what are the essential principles of their operation. Discuss what are the pros and cons of using the binary formats. What criteria should you consider when making the decision of data interchange format?

### 3. WebRTC

Describe what is WebRTC. How does it work? When would you use it? What is its relationship to other related standards?

### 4. Structured data processing

Compare the alternative ways to deal with structured data: HTML scraping, REST, and semantic web. Describe the essential operation of each approach and the key differences between them. What are the cases where each approach would make sense?