

The following documents are allowed during the exam:

1. Documents in Compendium 1, printed on colored paper.
2. Documents in Compendium 2, printed on colored paper.
3. Documents in Compendium 3, printed on colored paper.
4. Documents in Compendium 7, printed on colored paper.
5. Documents in Compendium 9, printed on colored paper.
6. Ordinary language dictionaries between English and Swedish.

Note 1: Compendium 0, 4, 5, 6 and 8 are not allowed during the exam.

Note 2: The exam supervisor will check that you do not have copies of the disallowed compendiums. Bringing such compendiums on colored paper is cheating and can result in suspension of your rights to study.

Note 3: Underscoring and short handwritten notes in the yellow documents are allowed.

Note 4: A few copies of the allowed compendiums will be available for loan during the exam for students who have not brought the compendiums.

Important warning

It is not acceptable to answer an exam question by just a verbatim quote from the allowed documents above. You must show that you understand the question and your answer by using your own words.

Jacob Palme will be available for clarification of exam questions by coming to the exam room at about 11:00.

7.5 hp or 6 hp?

Most students will study this course segment in its present, 7.5 hp shape. However, some students may have chosen to take the course segment in its old, 6hp shape. New Stockholm University students for this course segment in the fall of 2007 have to take the course segment in its new, 7,5 shape.

The difference is that the 7,5 shape of the course segment includes the following topics not covered by the old 6 hp course segment: Webdav, Bittorrent, RSS, Podcasting. If you are taking the course in its 6hp segment, write this with visible block letters on the envelope of the exam. Those taking the 6hp segment should not answer question 4 in the exam.



No.	Question in English	Question in Swedish	Max points
1	Which are the drawbacks of uncontrolled caching, and how can these drawbacks be reduced by cache control methods?	Vilka är nackdelarna med okontrollerad cachning, och hur kan dessa nackdelar reduceras genom metoder för styrning av cachningen?	6

Solution:

The main drawback is that the cache may contain an obsolete version of a document. Additional drawbacks are security risks with non-public pages and that web access statistics will be incorrect security against falsified pages, saving information which need not be saved(0,5).

These methods can be reduced by controlled caching, such as:

- Check for every access if the document is the latest version
- Erase cached documents after an expiration date,
 - Set by the master server, or
 - Estimated from the age of the document
 - Just an arbitrary limit, for exempel 6 hours
 - Forbid all caching of certain documents .
- Allow user to request the latest version of a document.
- Allow master server to tell caches that they need a new version of a document (not used by HTTP).

2	Write a protocol for a new e-mail service, which allow people to request one or more documents from an hierarchical directory structure using e-mail and have them returned by e-mail. Use either ABNF or XML or both as syntax specification language. Note: The protocol may need a few words of semantic description, just syntax only may not be enough.	Skriv ett protokoll för en ny e-post-tjänst, som tillåter folk att beställa ett eller flera dokument ur en hierarkisk katalogstruktur med hjälp av e-post och få dem returnerade via epost. Använd antingen ABNF eller XML eller bådaddera som syntax-specifikationspråk. Observera: Protokollet kan behöva några ord av semantisk beskrivning, enbart syntax är kanske inte tillräckligt.	6
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Solution:

The protocol MAILGET allows requests of files from a hierarhichal catalog of files, and have them sent by return e-mail.

Requesting files DTD

```
<!ELEMENT directory ((file | directory)*)>
<!ATTLIST directory
  name CDATA #REQUIRED
```



No.	Question in English	Question in Swedish	Max points
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```
>
<!ELEMENT file EMPTY>
<!ATTLIST file
  name CDATA #REQUIRED
>
```

Requesting files example

```
<?xml version="1.0" standalone="no"?>
<!DOCTYPE directory SYSTEM
"http://www.dsv.su.se/~jpalme/internet-
course/xml/directory.dtd">
<directory name="misc">
  <directory name="project">
    <directory name="group 1">
      <file name="Firstfile.html" />
      <file name="Secondfile.html" />
    </directory>
  </directory>
  <directory name="group 2">
    <file name="Thirdfile.html" />
  </directory>
</directory>
```

Returning files

Use the multipart/mixed format as defined in the MIME standard (RFC 2046). Send one of the requested files in each body part. Include in the content headings one additional heading "Content-Mailget-Result:" containing the path to the returned file.

Example:

```
Content-Mailget-Result: /misc/project/Firstfile.html
```

ABNF syntax for Content-Mailget-Result

```
Content-Mailget-Result = "Content-Mailget-Result:" [CFWS]
                        Path
```

```
Path = Directory "/" Path / Filename
```

```
Directory = Unquoted-Name / Quoted-Name
```

```
FileName = Unquoted-Name / Quoted-Name
```

```
Unquoted-Name = (Letter / Digit )*
```



No.	Question in English	Question in Swedish	Max points
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Quoted-Name = "" (Any char except "") ""

- | | | | |
|---|------------------------------------|--|---|
| 3 | Which web pages need XSLT and why? | Vilka webbsidor behöver XSLT och varför? | 6 |
|---|------------------------------------|--|---|

Solution

Web pages in XML will usually need both CSS and XSLT to achieve a neat rendering, since XML itself does not contain formatting information which can be understood by a web browser. This is of especial value if the same XML source is to produce multiple result pages in different formats.

- | | | | |
|---|---|--|---|
| 4 | Why does WEBDAV partially use XML as a data format? | Varför använder sig WEBDAV delvis av XML som dataformat? | 6 |
|---|---|--|---|

Solution:

Because XML provides extensibility, can handle ISO 10646 characters and provides internationalization support.

Also because WEBDAV contains operations returning information about a set of files and directories in a hierarchical directory structure, and the hierarchical nature of XML makes it very suitable to handle such information.