Exercise 1 – HTTP: Basics

1. What are the elements of an HTTP-request in general (detailed structure)?

Main elements of HTTP request are:

1. Request line = contains method type, url path and version of the HTTP
2. General header = contains date of the request and the state of connection
3. Request header = contains some useful information about request, like client type
4. Entity header = contains information about the content. For Example Content-Encoding, Content-Type etc.
5. Body = Only contains user data

2. What is the difference between an HTTP-request and an HTTP-response?

Most significant difference between HTTP-request and HTTP-response is Status line.
Status line contains information about the request process' result.

3. What are the parts of an URL? Read the JavaSE-API-description of class URL and provide answers to the following questions:

a. What is meant by Encoding and Decoding in the context of RFC2396 of URLs?

RFC2396 encoding system allows a few characters to be represented as it is: a-z, A-Z , 0-9 and some basic symbols ("(","0" etc.).

The remaining characters are represented as %<xx> format. Where <xx> is the hex-representation of the integer value of the character.

b. Which methods of class URL can extract parts of an URL from an URL-object?

There are 10 methods that related to parts of the URL.
They are getAuthority(), getContent(), getFile(), getHost(), getPath(), getPort(), getProtocol(), getQuery(), getUserInfo(), getRef()

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4. Use Java to read and print the following webpage line by line: https://next.unibz.it/en

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Can be found in the ex1.4.java

Exercise 2 – HTML: Structure and Meta-Tags

1. Explain the dependencies between Html-, Head- and Body-Tag.

Html tag indicates the start and end of the page. Also it contains information about encoding and version etc.
Head tag contains information about page's content and data relevant to search engines etc.
The body-tag contains all the contents that will be displayed.

2. Explain the function of Meta-Tags and describe it with some variation based on examples.

Meta-tags contain information(metadata) about the webpage; such as page description, keywords, author of the document. Metadata will not be visible on the page, but will be machine parsable, like for the search engines.

Some examples for meta-tag:

1 - Define keywords for search engines:
<meta name="keywords" content="classical, music, MIDI, composers, archive">

2 - Define a description of your web page:
<meta name="description" content="MIDI archive for classical music">

3 - Define the author of a page:
<meta name="author" content="Pierre R. Schwob">

4 - Refresh document every 15 seconds:
<meta http-equiv="refresh" content="15">

5 - Redirect to another webpage after 20 seconds:
<meta http-equiv="refresh" content="20;url= http://www.classicalarchives.com/">

6 - Specify the character encoding for the HTML document:
<meta charset="UTF-8">

3. What is meant by Charset? What is its purpose? Explain the function of HTML-Entities and their relation to Charsets.

Charset is the set of all characters and their corresponding values in a character encoding standard like ASCII, UTF-8.

Entities are references to the reserved characters in HTML. A character that is not present in the character set (encoding) used in the page can be produced as a combination of a char and a diacritical mark. For example:

́ = ´

á = a