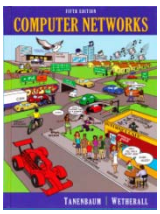
# Solutions – HTTP




*The solutions below are based on our capture and use of tools. Your answers will differ in the details if they are based on your own capture and use of tools in a different network setting. Nonetheless, we expect our solutions to help you understand whether your answers are correct.*

## Step 1: Manual GET with Telnet

Answers to the questions:

1. HTTP 1.1, according to the start of the response. While other versions are possible, this is the version of HTTP spoken by the vast majority of servers.
2. As with the response, a blank line separates the headers from the content. The client simply looks for this blank line.
3. The response includes a Content-Type header that gives the MIME type of the content. This header should override any hint in the file name, e.g., photo.jpg is expected to be of type image/jpeg, but in case of a disagreement the Content-Type is authoritative.

## Step 3: Inspect the Trace

Answers to the questions:

1. Each header line consists of the name of the header field and its value separated by a colon. There can be whitespace before (and after) the value. The line ends with a "carriage return, line feed" pair of characters, often written CRLF or "\r\n".
2. The type of the content is given by the Content-Type header, and its length is normally given by the Content-Length header. (It is possible but unlikely that these headers are not present.)

## Step 4: Content Caching

Answers to the questions:

1. The header is called "If-Modified-Since", i.e., it asks the server to send the content if it has been modified since a given time.
2. The timestamp value comes from the "Last-Modified" header of the most recent download of the content. It is a server timestamp for when the content last changed – it is not a timestamp according to the browser clock, and it is not a timestamp of the time of the download

[END]