

CS1001

Lecture 8

Overview

- Internet Services
- Security
- Markup Languages
- HTML

Goals

- Understand Internet Services
- Examine network security issues
- What is a “Markup Language”?
- Learn Basic HTML

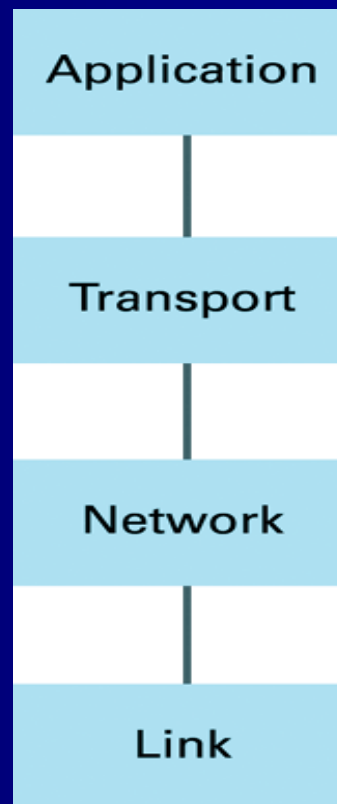
Assignments

- Brookshear: Ch 8.2, 8.3 (Read)
- Read HTML Primers
 - <http://www.columbia.edu/acis/webdev/>
 - <http://www.davesite.com/webstation/html/>
 - <http://www.w3.org/MarkUp/>
- Primer on the Semantic Web
 - <http://www.scientificamerican.com/article.cfm?articleID=00048144-10D2-1C70-84A9809EC588EF21&catID=2>
- Read linked documents on these slides (slides will be posted in courseworks)

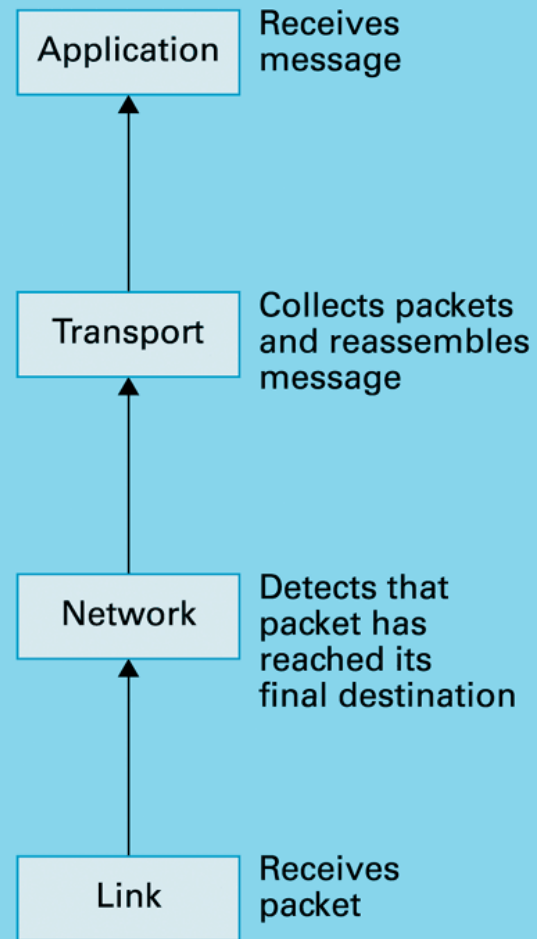
Network Protocols

- A Protocol is a means for two parties to exchange data. Contains ways of sending/receiving/acknowledging data, error recovery, ability to switch context
- Example: HTTP, SMTP

Figure 3.18: The Internet software layers

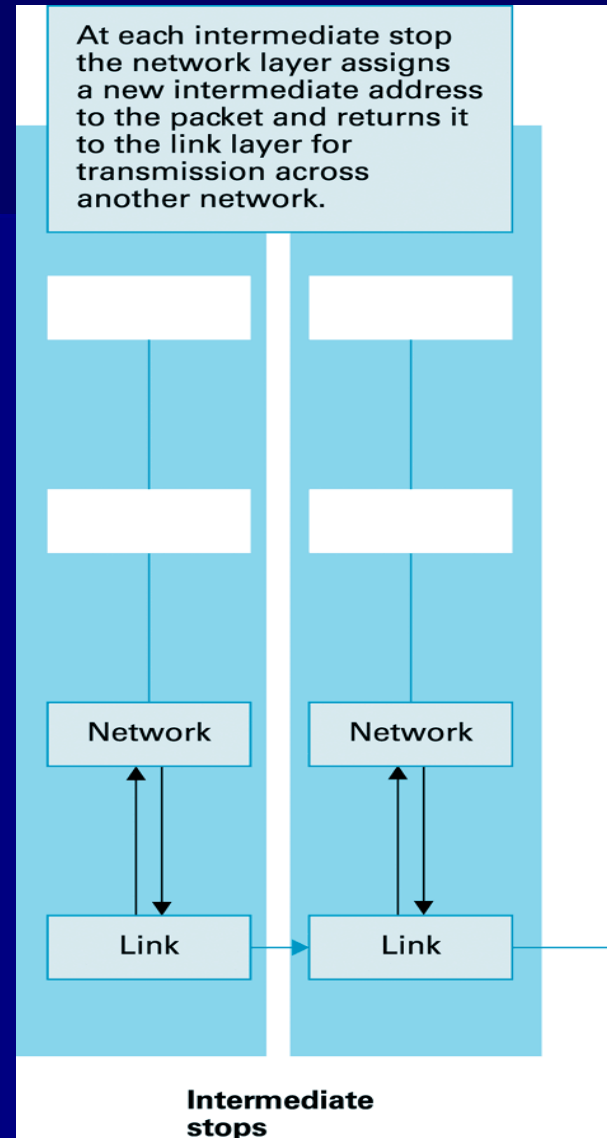


**Figure 3.19:
Following a
message
through the
Internet**



**Final
destination**

Figure 3.19: Following a message through the Internet (continued)



Protocols

- There are distinct protocols at *each* of the Link, Network, Transport, Application layers
- Protocols establish standards for exchanging binary data
- Protocols can be optimized for each task (some protocols are good for transferring large files... others are better for transferring streaming video)

Figure 3.20: Choosing between TCP and UDP

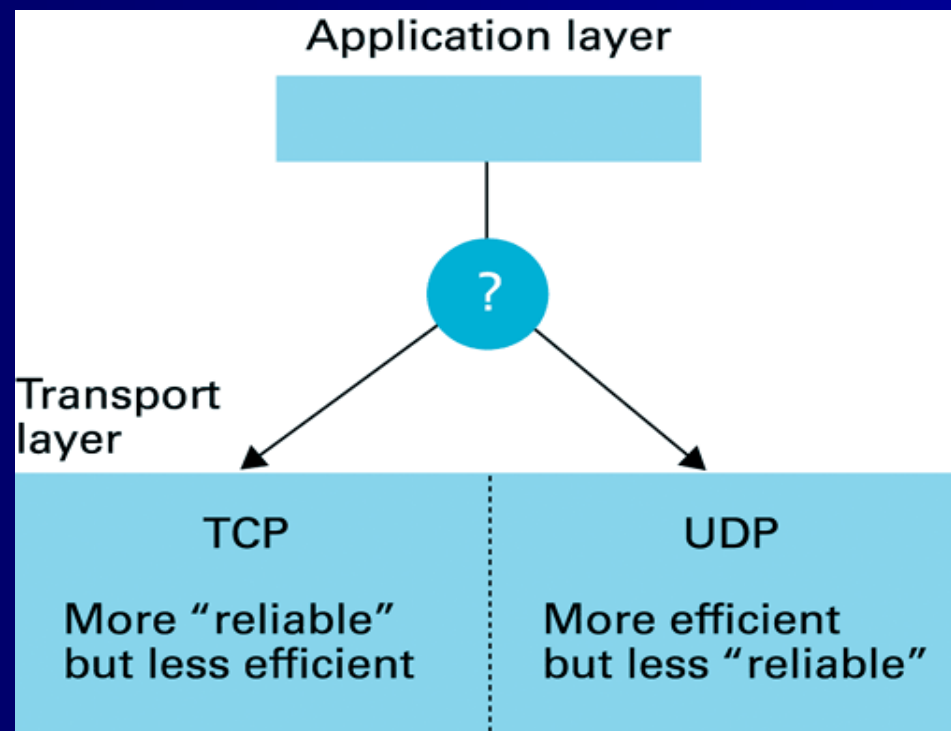


Figure 3.17: Package-shipping example

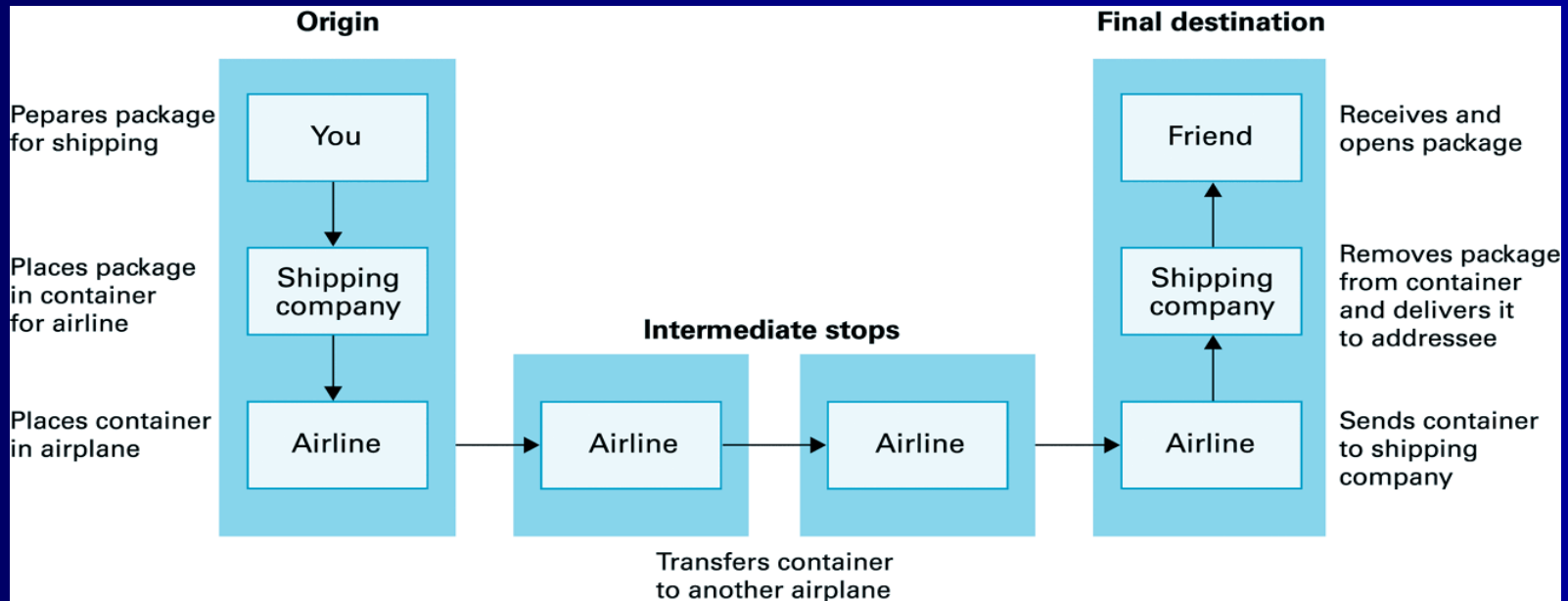
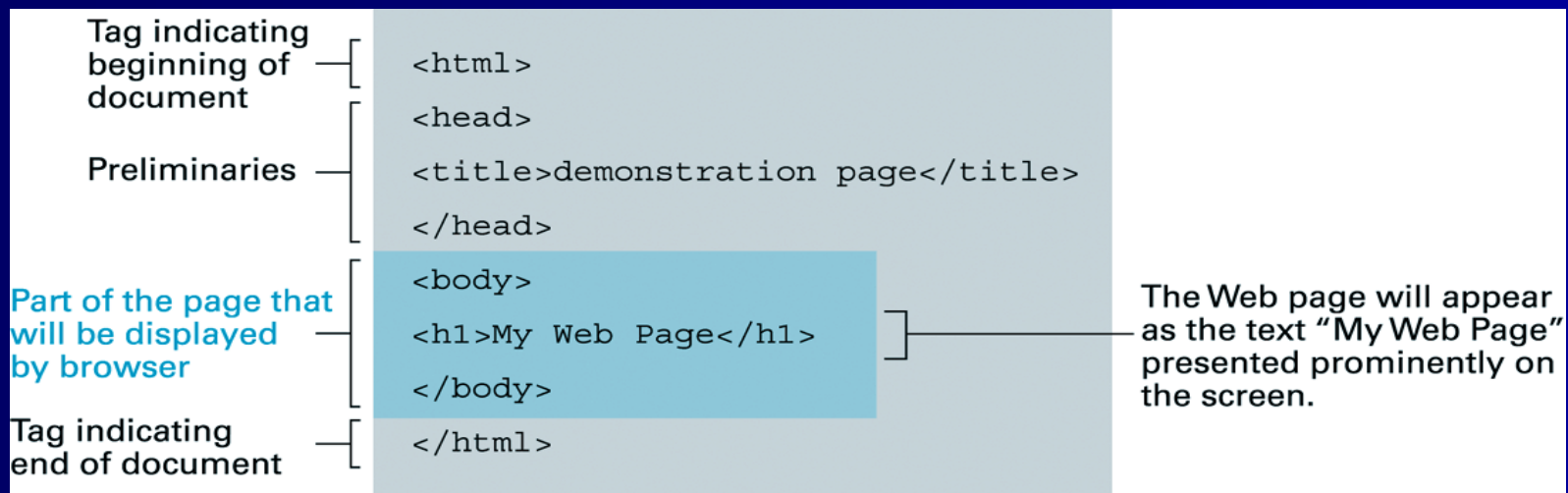


Figure 3.13: A typical URL

`http://ssenterprise.aw.com/authors/Shakespeare/Julius_Caesar.html`

| | | | |
|--|--|--|--|
| | | | |
| | | Mnemonic name of host holding the document | Document name |
| Protocol required to access the document. In this case it is hypertext transfer protocol (http). | | | Directory path indicating the location of the document within the host's file system |

Figure 3.14: A simple Web page expressed in HTML



The Internet

- HTTP (Hypertext Transfer Protocol) is sent *over* TCP/IP (Transmission Control Protocol/Internet Protocol).
- HTTP is a means of efficiently requesting and sending HTML pages/graphics.
- TCP/IP is generic and operates at the lower "Transport" layer

Core Internet Services

- DNS – Translates Names to numerical IP Addresses
- IP Addresses consist of 4 “octets” of data (a number from 0 to 255)

Markup Languages

- A markup language exists only in the context of some other language. A markup language surrounds and “marks up” terms in an existing language.
- HTML “marks up” human languages with structural and presentational information
- Examples: HTML, XML, LaTeX

HTML

- Hypertext Markup Language
- “Hyper” => Text in multiple dimensions
- International Standard (W3C)
- Describes the *structure* of information (not really the presentation of it)