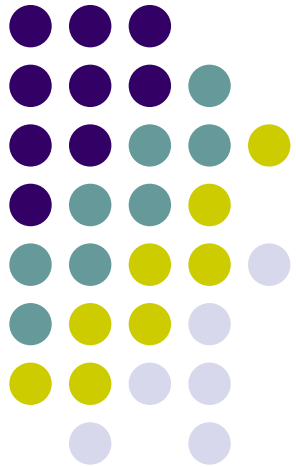
Web-Based Technology

2110213 Information System Organization

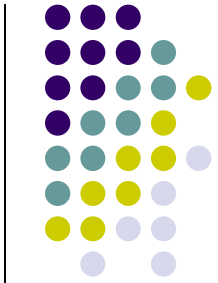
Natawut Nupairoj, Ph.D.
Department of Computer Engineering
Chulalongkorn University



Outline

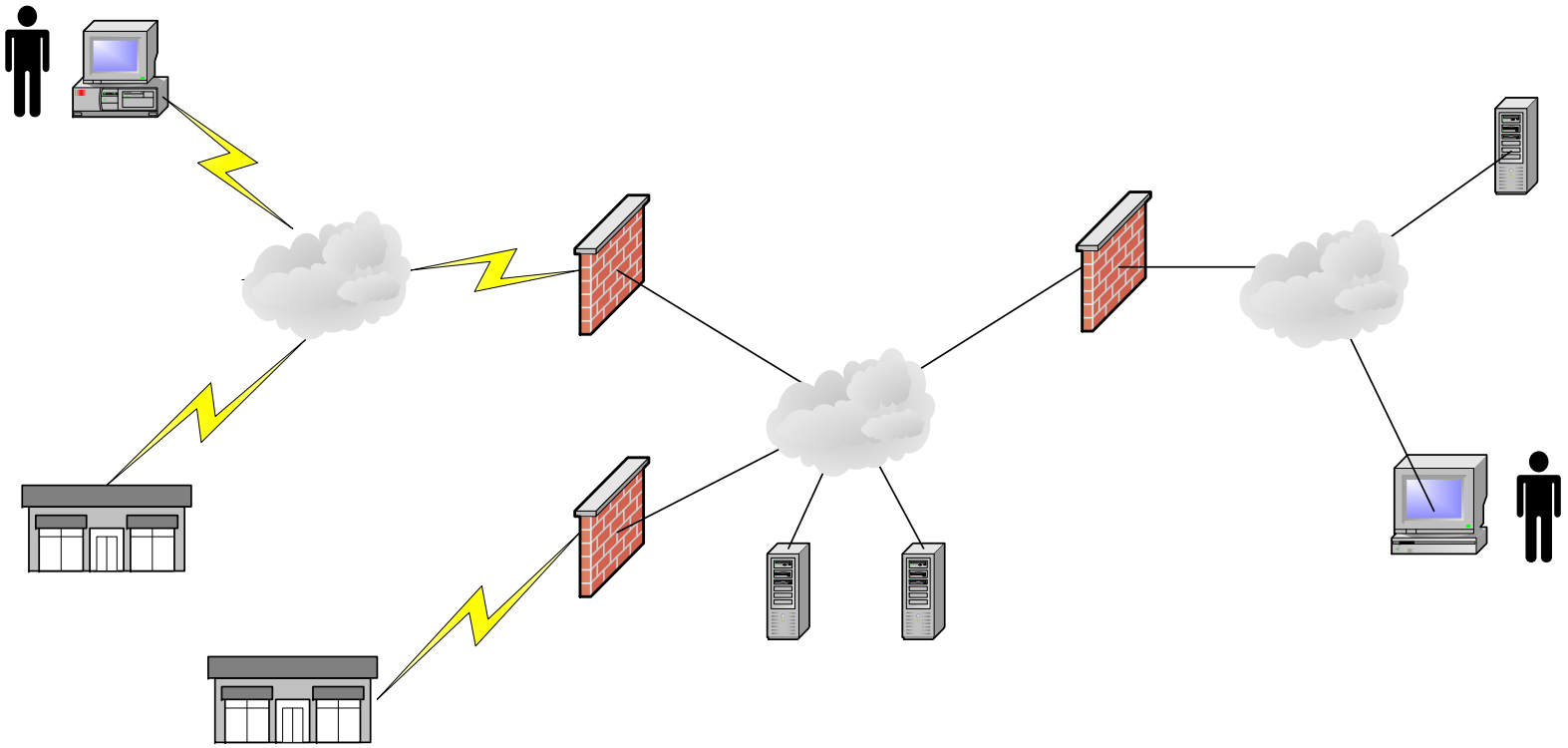
- Internet and E-Commerce.
- Basic Internet Mechanisms.

Basic Terminologies



- Internet
  - Anyone don’t know ?
- Intranet
  - Very important.
  - Internal applications.
- Extranet
  - Integrating with external parties.
  - VPN.

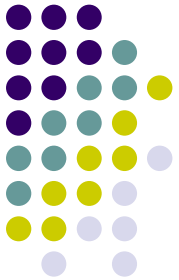
Network Layout



E-everything

- E-Commerce: Amazon, eBay, Dell, etc.
- E-Business / E-Service: Fedex, etc.
- E-Learning
- E-Government: Thai eGov

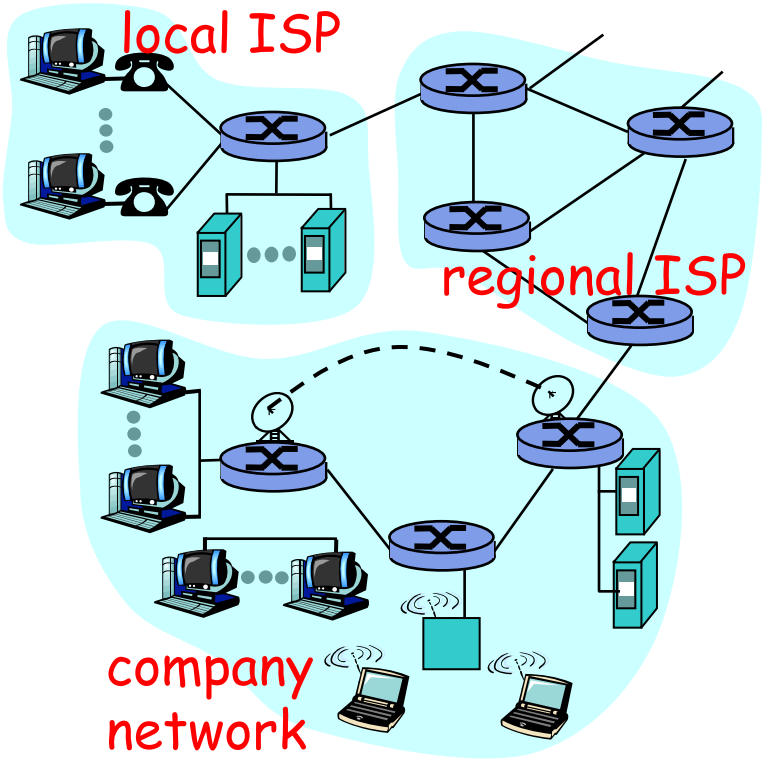
A-2-Z

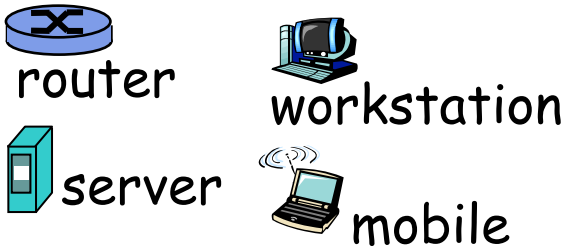


- From who To who.
- B2C.
- B2B.
- B2E.
- G2B.
- G2G.

How Internet Works?

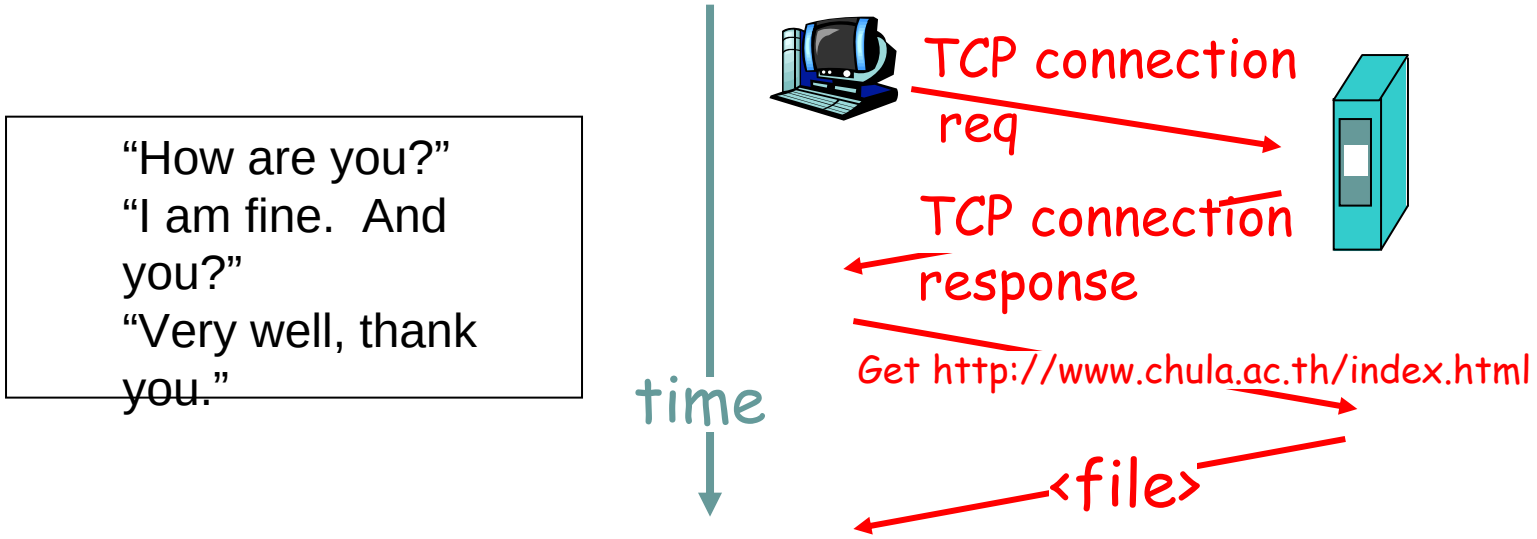
- Millions of connected devices.
- Network of networks.



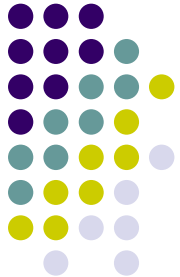


What is Protocol ?

- Define format, order/sequence of communication, and actions when sending or receiving.



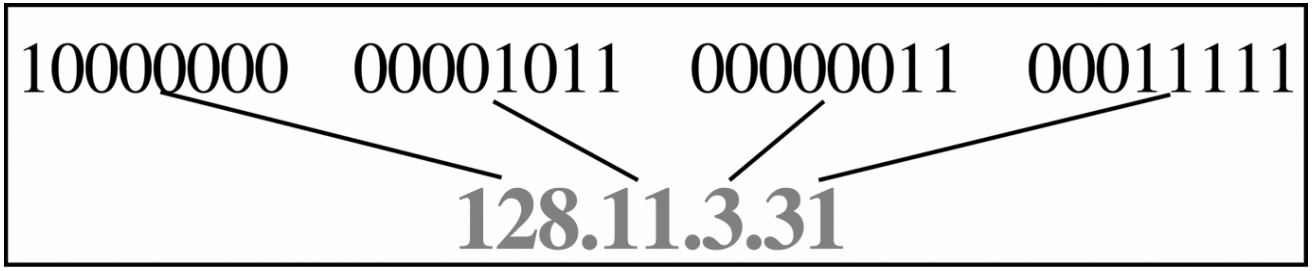
Internet Protocols



- System protocols
  - IP – basic protocol to deliver from source host to destination host.
  - TCP – reliable (guarantee no-loss) protocol to deliver from application to application.
- Application protocols
  - HTTP – web-based protocol.
  - SMTP – mail transmission protocol.
  - FTP – file transfer protocol.
  - DNS – domain name service.

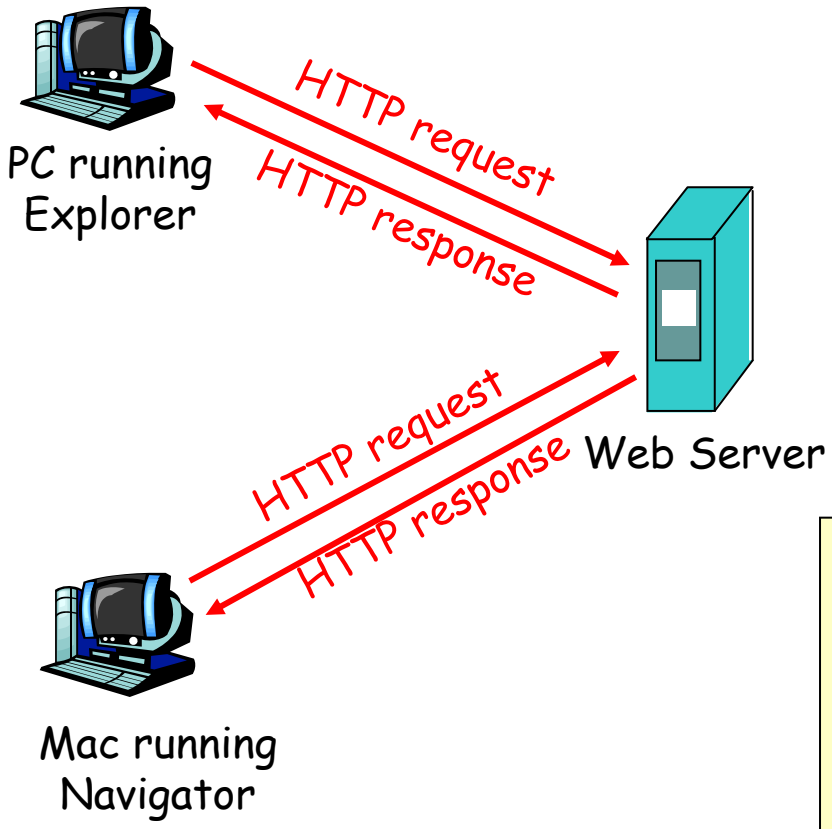
Internet Naming System

- IP address vs. Domain name.



www.cp.eng.chula.ac.th

HTTP Protocol



- Text-based protocol
  - Good: simple.
  - Bad: inefficient.

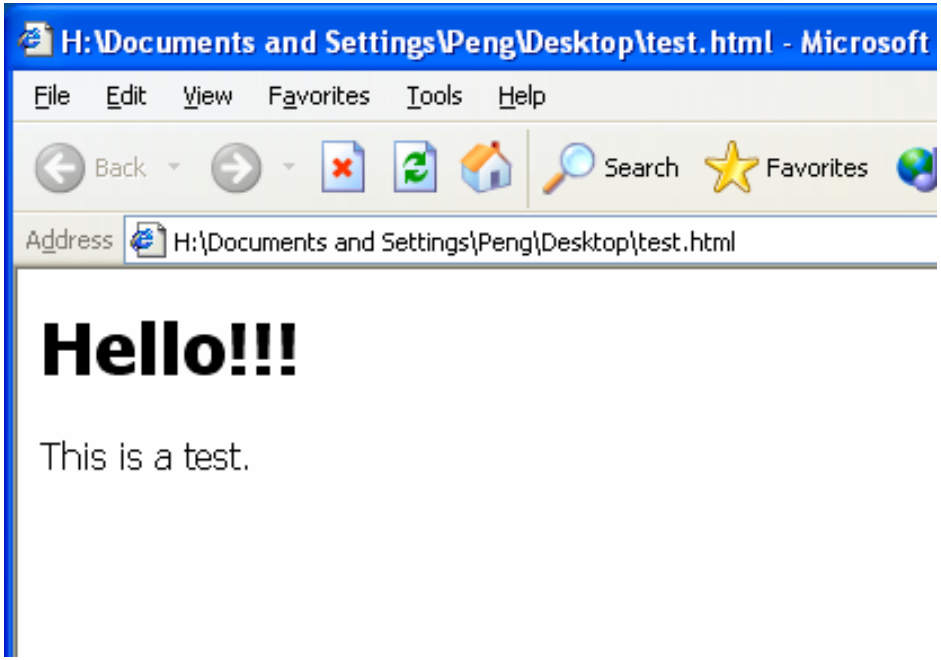
```
GET /somedir/page.html HTTP/1.1
Host: www.someschool.edu
User-agent: Mozilla/4.0
Connection: close
Accept-language:fr

(extra carriage return, line feed)
```

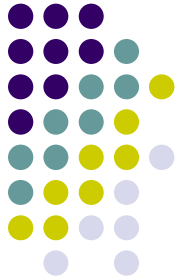
HTML Format

- Text-based format that tells browser what to "display" on the screen.

```
<body>
<H1>Hello!!!</H1>
This is a test.
</body>
```

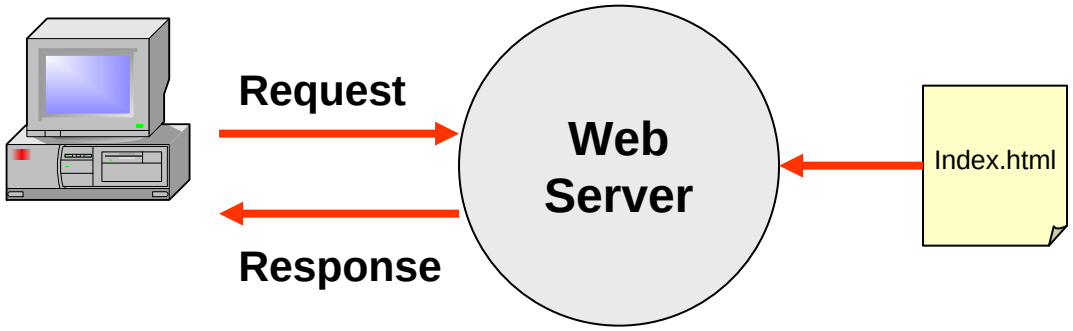


Static vs. Dynamic Pages

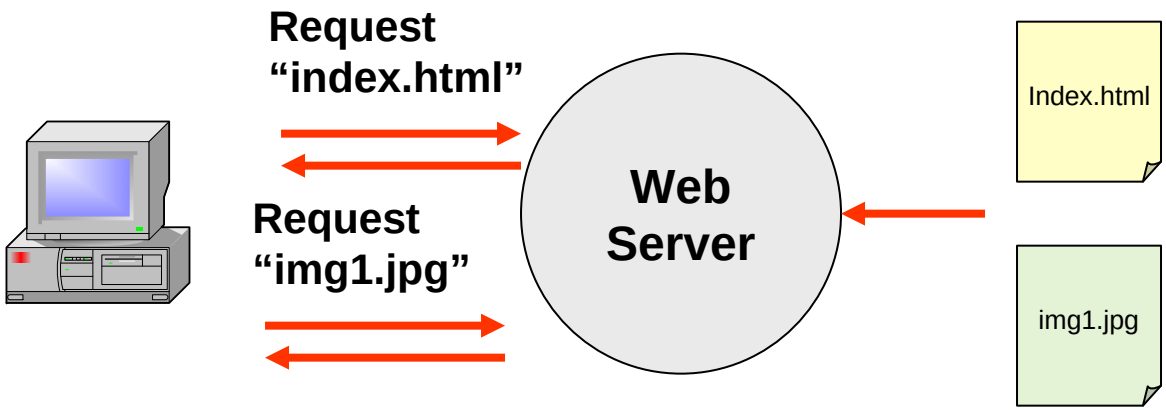


- Web-based applications consist of 2 page types
  - Static pages: HTML, picture, audio, text, etc.
  - Dynamic pages: result of search pages, form submission, etc.
- To serve a static page
  - Web server grabs a static page from a file in the server.

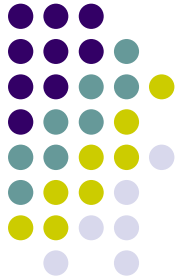
Serving a Static Page



Serving a Static Page with Images

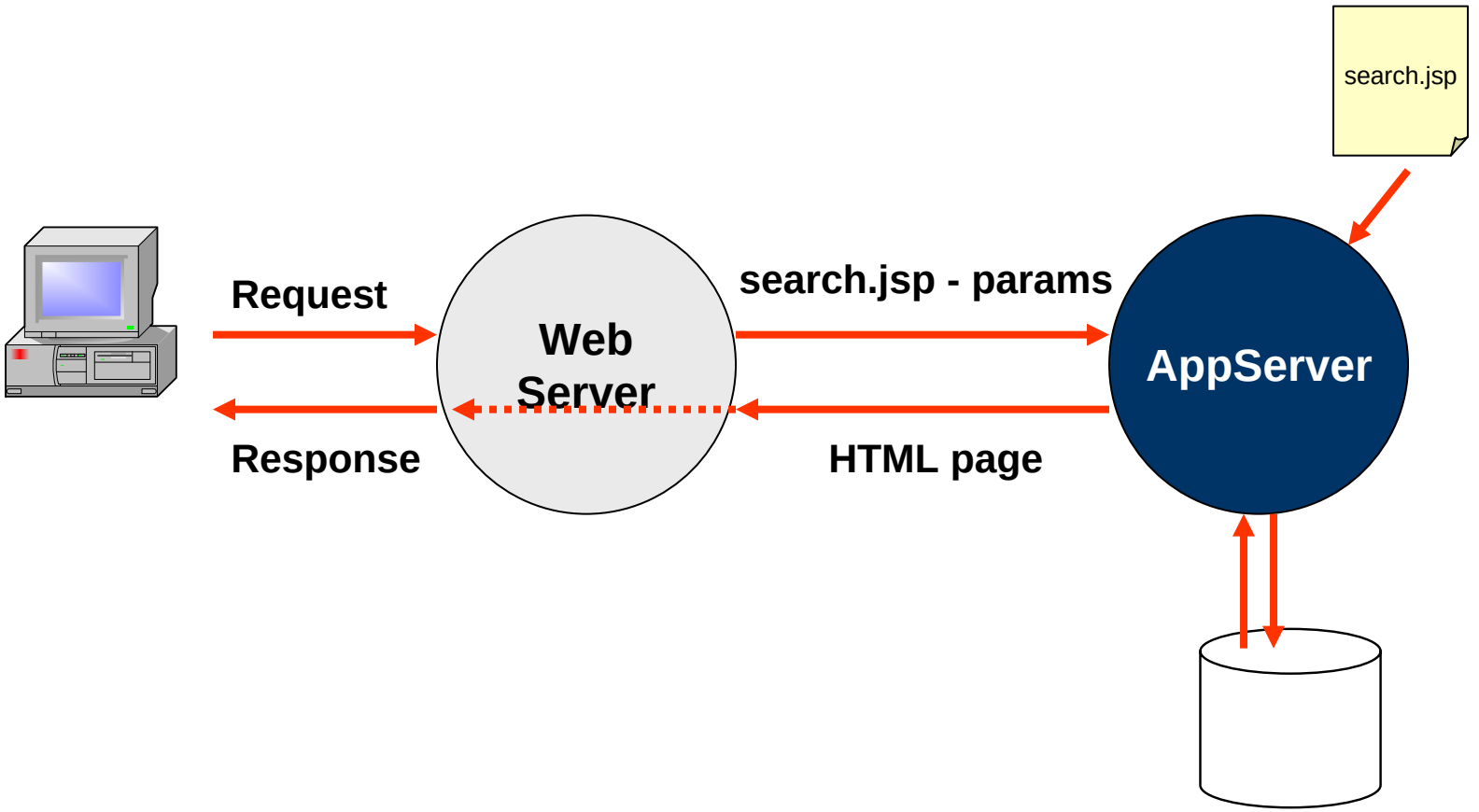


Serving a Dynamic Page

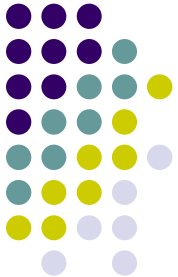


- Web server will activate designated user programs
  - Common Gateway Interface (CGI).
  - Server-sided Java program.
  - Used mostly to connect to database.
- File extensions
  - JSP, ASP, PHP, EXE, Class, etc.

Serving a Dynamic Page



JSP Example



```
<TABLE WIDTH=60% BGCOLOR=lightblue BORDER=1 CELLPADDING=10>
<TR> <TH> Time </TH> <TH> Appointment </TH> </TR>
<%
    for(int i=0; i<table.getEntries().getRows(); i++) {
       cal.Entry entr = table.getEntries().getEntry(i);
%>
    <TR>
    <TD>
    <A HREF=cal2.jsp?time=<%= entr.getHour() %>>
          <%= entr.getHour() %> </A>
    </TD>
    <TD BGCOLOR=<%= entr.getColor() %>>
    <% out.print(util.HTMLFilter.filter(entr.getDescription())); %>
    </TD>
    </TR>
<%
    }
%>
</TABLE>
```