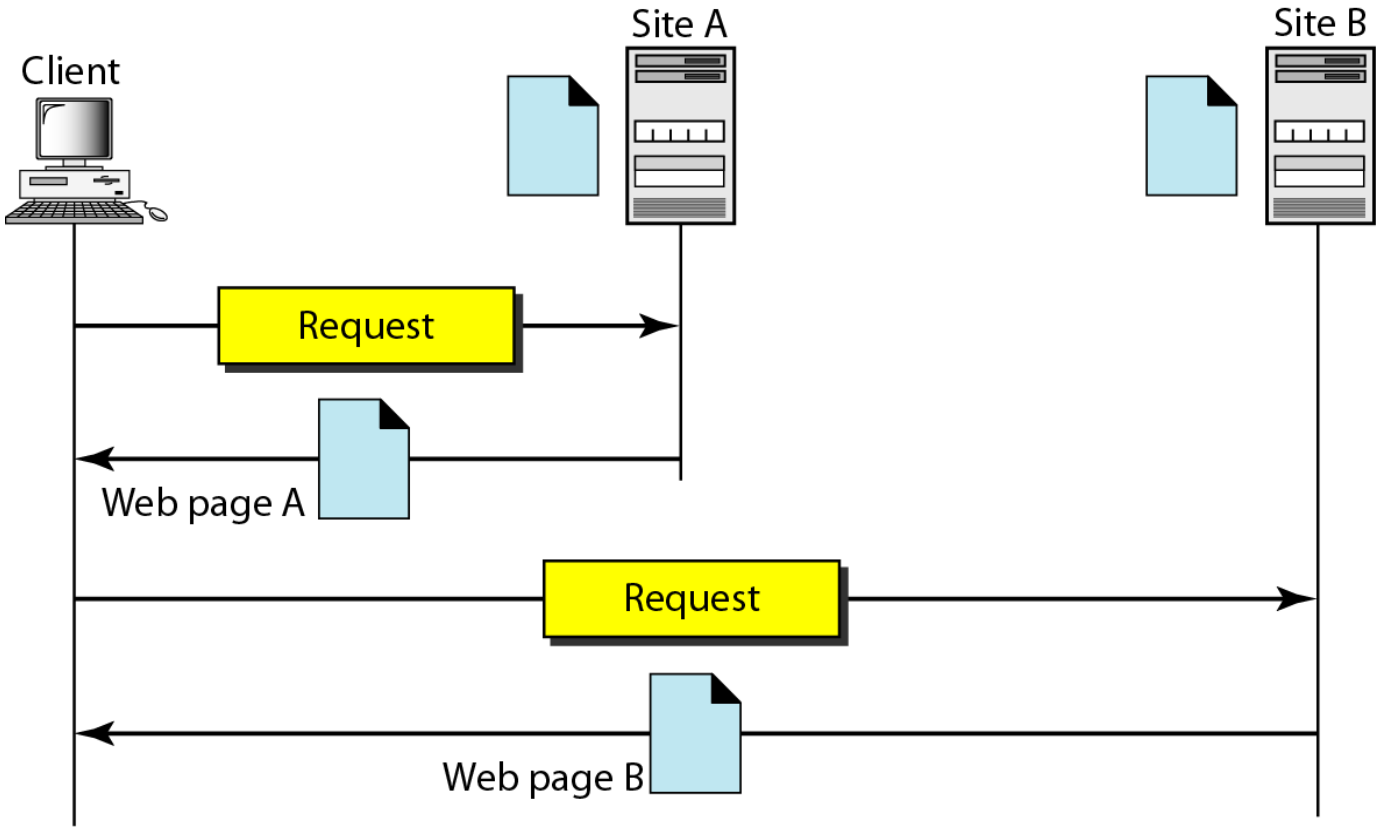
# Web system Architecture

# ARCHITECTURE

The WWW today is a distributed client/server service, in which a client using a browser can access a service using a server. However, the service provided is distributed over many locations called sites.

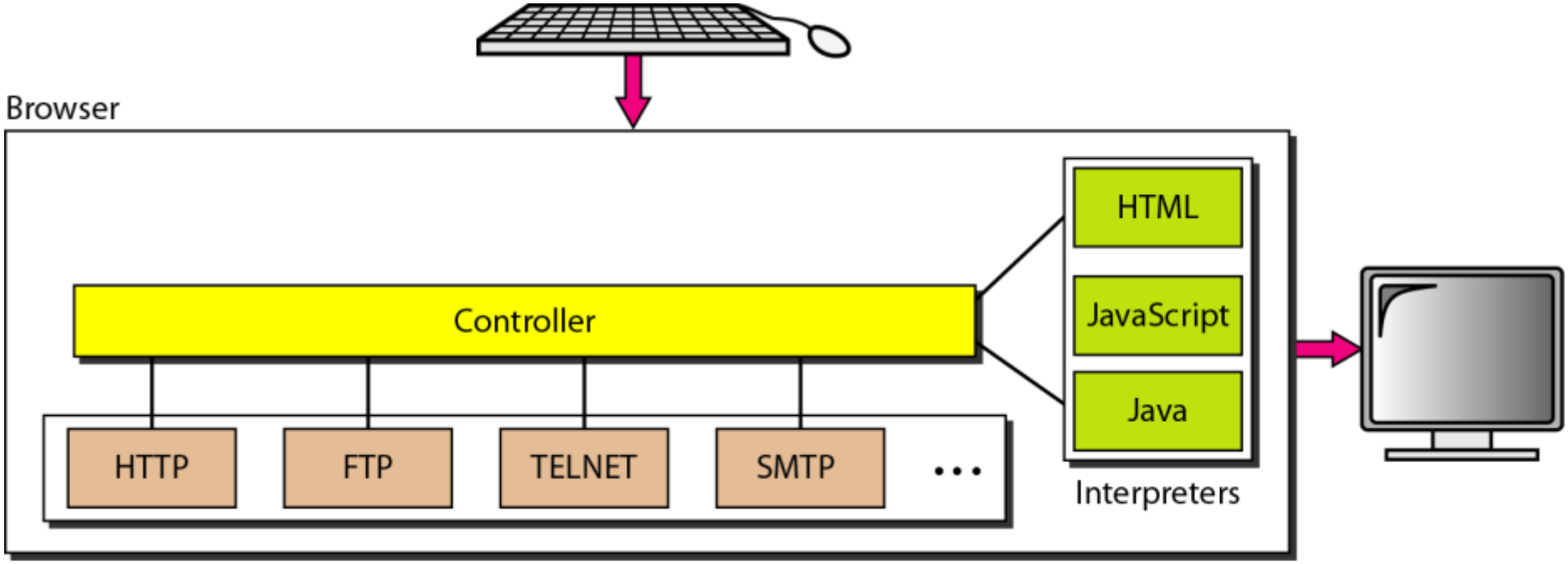
# *Architecture of WWW*



## *Browser*

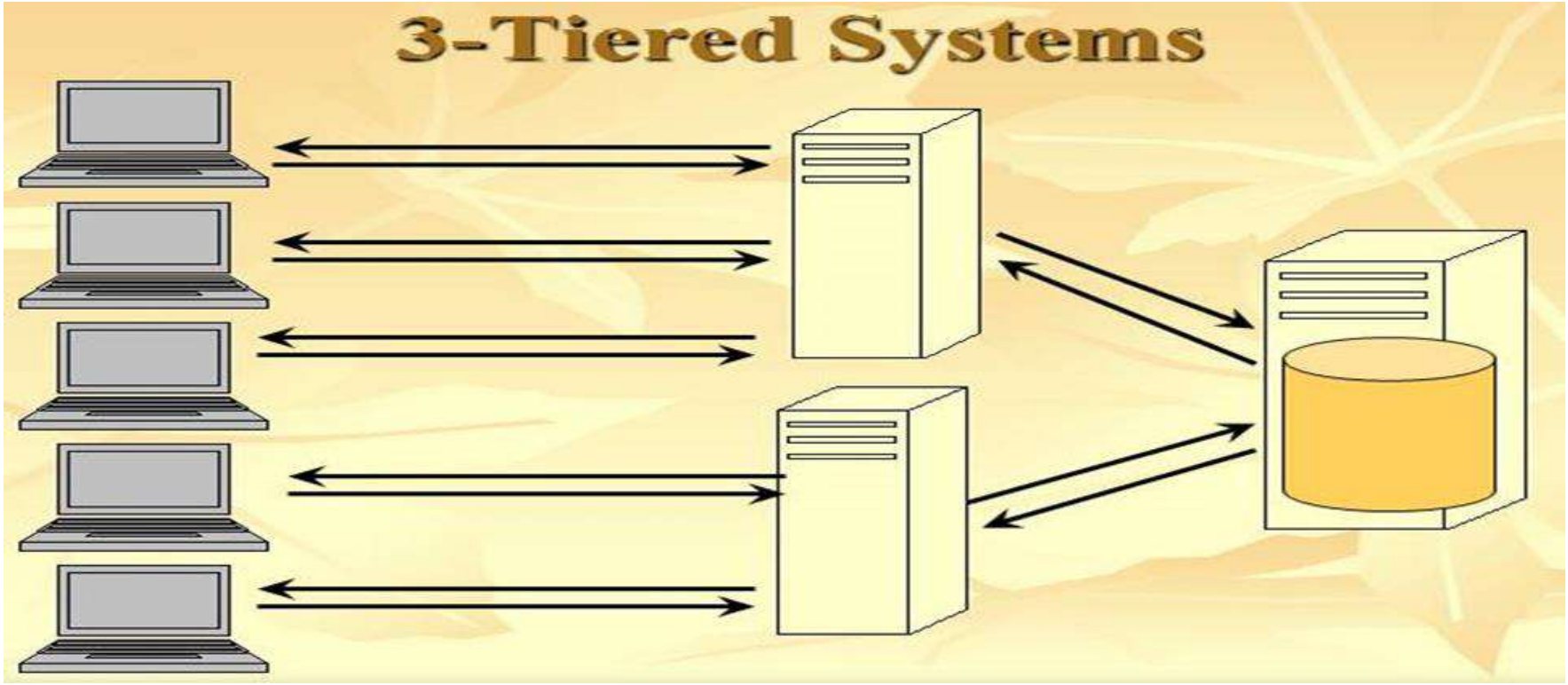
- Each browser usually consists of three parts: a controller, client protocol, and interpreters.
    - The controller receives input from the keyboard or the mouse and uses the client programs to access the document.
    - After the document has been accessed, the controller uses one of the interpreters to display the document on the screen.
    - The client protocol can be one of the protocols described previously such as FTP or HTTP
    - The interpreter can be HTML, Java, or JavaScript, depending on the type of document.

# *Browser*


Browser
Controller
HTTP
FTP
TELNET
SMTP
...
HTML
JavaScript
Java
Interpreters

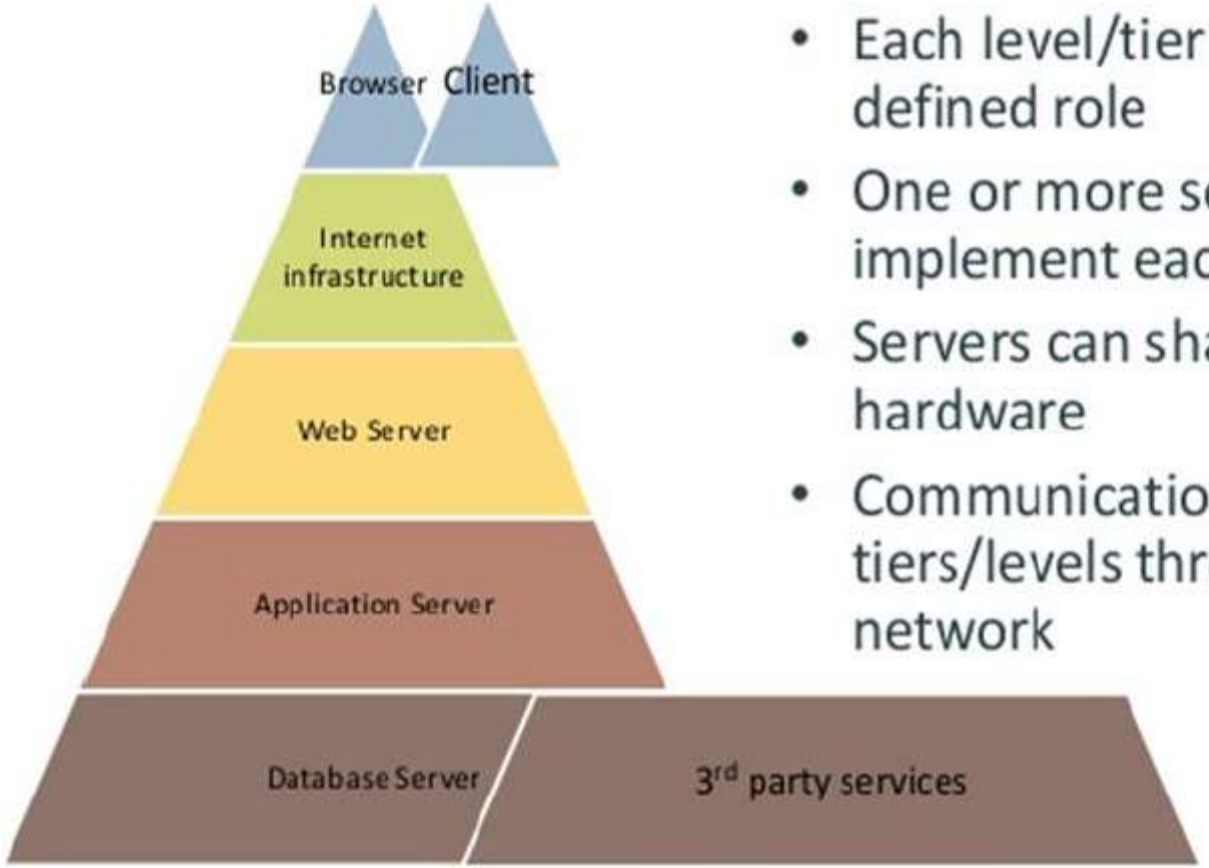
## Server

- The Web page is stored at the server.
- Each time a client request arrives, the corresponding document is sent to the client.
- A server can also become more efficient through multithreading or multiprocessing.
- In this case, a server can answer more than one request at a time.



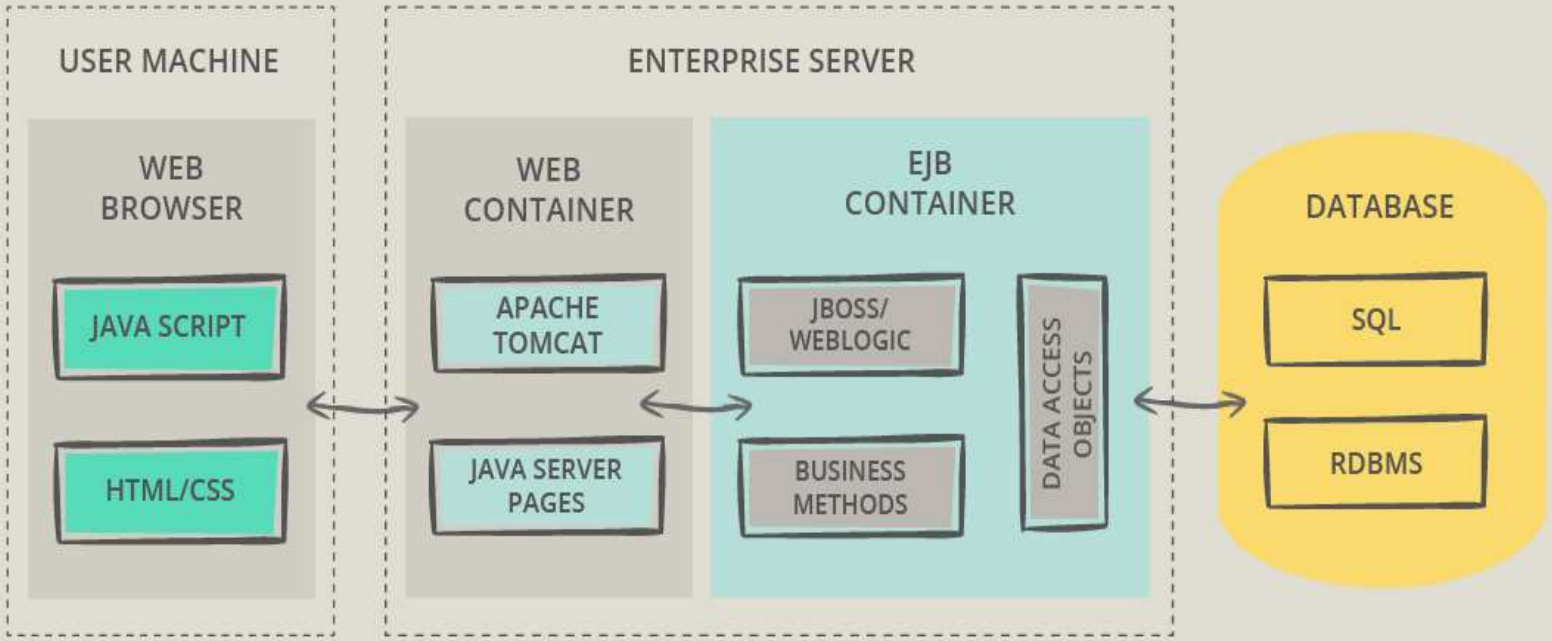

- A web browser is the **first tier** (presentation).
- An engine using some dynamic Web content technology (such as ASP, ASP.NET, CGI, ColdFusion, JSP/Java, PHP, Perl, Python, Ruby on Rails or Struts2) is the **middle tier .**
- A database is the **third tier** (storage).

# N-tier (N-level) architecture




- Each level/tier has a well defined role
- One or more servers implement each tier/layer
- Servers can share hardware
- Communication between tiers/levels through the network

# J2EE WEB APPLICATION ARCHITECTURE

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# Web based 3-tier architecture