Part of the rationale

- **Specialization:**
  - Clients specialize in user interface
  - Servers specialize in managing data and application logic

- **Sharing:**
  - Many clients can be supported by few servers
  - Often data and logic are shared among applications and users

Understanding Networked Applications A First Course
Distinctions

- **Client-server**
  - Asymmetric relationship
  - Client predominately makes requests, server makes replies

- **Peer-to-peer**
  - Symmetric relationship

Email application

- **Client** sends message to server
- **Server** stores message on POP server
- **Client** retrieves message from server
Chat application

Chat clients send user's typing to server. Chat server aggregates typing from all users and sends to all clients. Other user's clients display aggregated typing from chat server.

Three-tier client/server

Local area network

Presentation

Note: many clients per application server, several application servers per data server.
Practice in defining tiers

- Online bookseller (e.g. amazon.com)
- Stock trading system (e.g. Schwab or E-trade)
Question

- What types of social applications would be appropriate for a client/server architecture?
<table>
<thead>
<tr>
<th>Shortcomings of client/server</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Departmental solution</td>
</tr>
<tr>
<td>• Proliferates non-interoperable technologies and applications</td>
</tr>
<tr>
<td>• Hardwired applications lose flexibility</td>
</tr>
</tbody>
</table>

What are some goals and likely characteristics of future *enterprise* architectures?