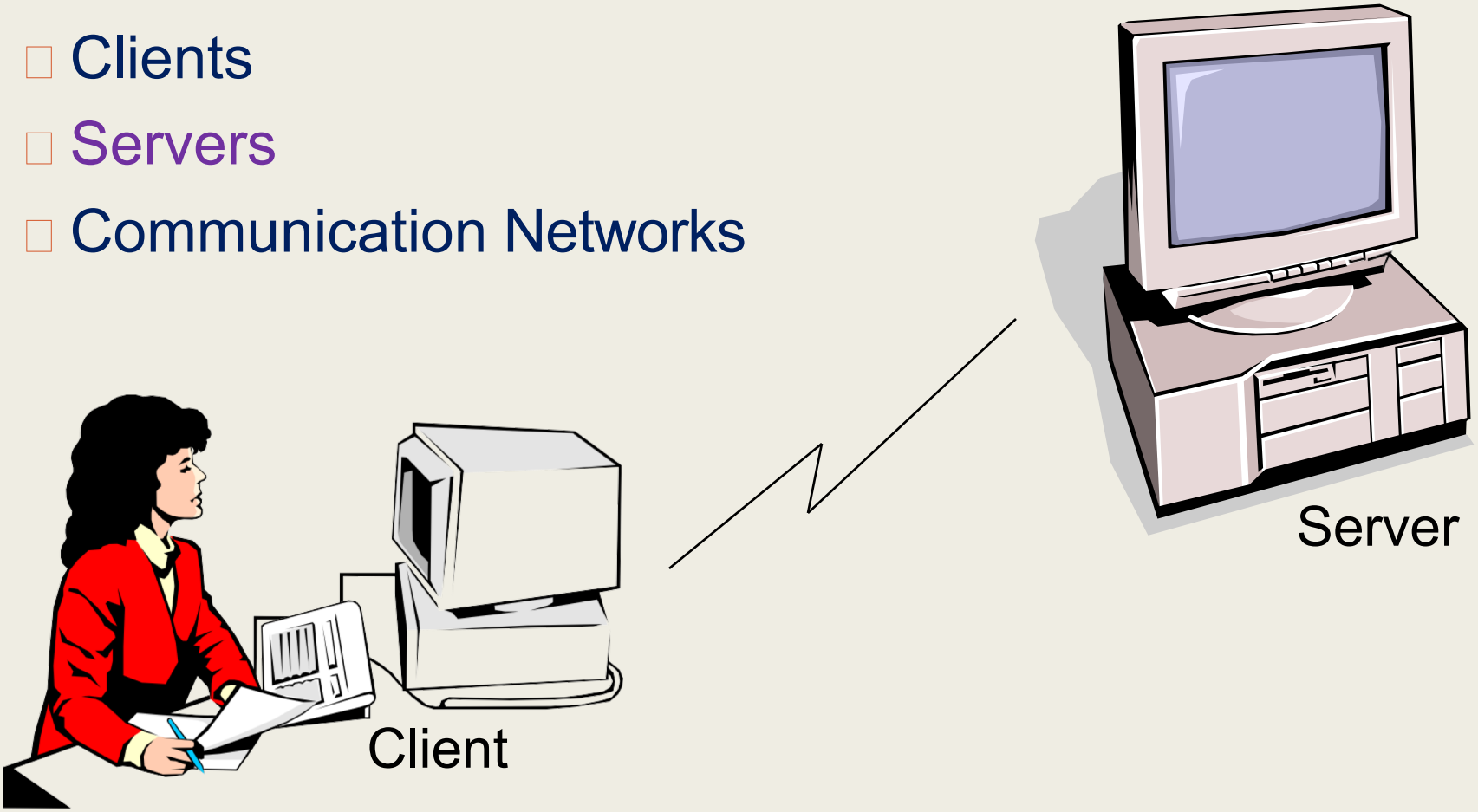
Client Server Architecture

Introduction

- A network architecture in which each computer or process on the network is either a *client* or a *server*.

Components

- Clients
- Servers
- Communication Networks



Clients

- Applications that run on computers
- Rely on servers for
  - Files
  - Devices
  - Processing power
- Example: E-mail client
  - An application that enables you to send and receive e-mail

Clients are Applications

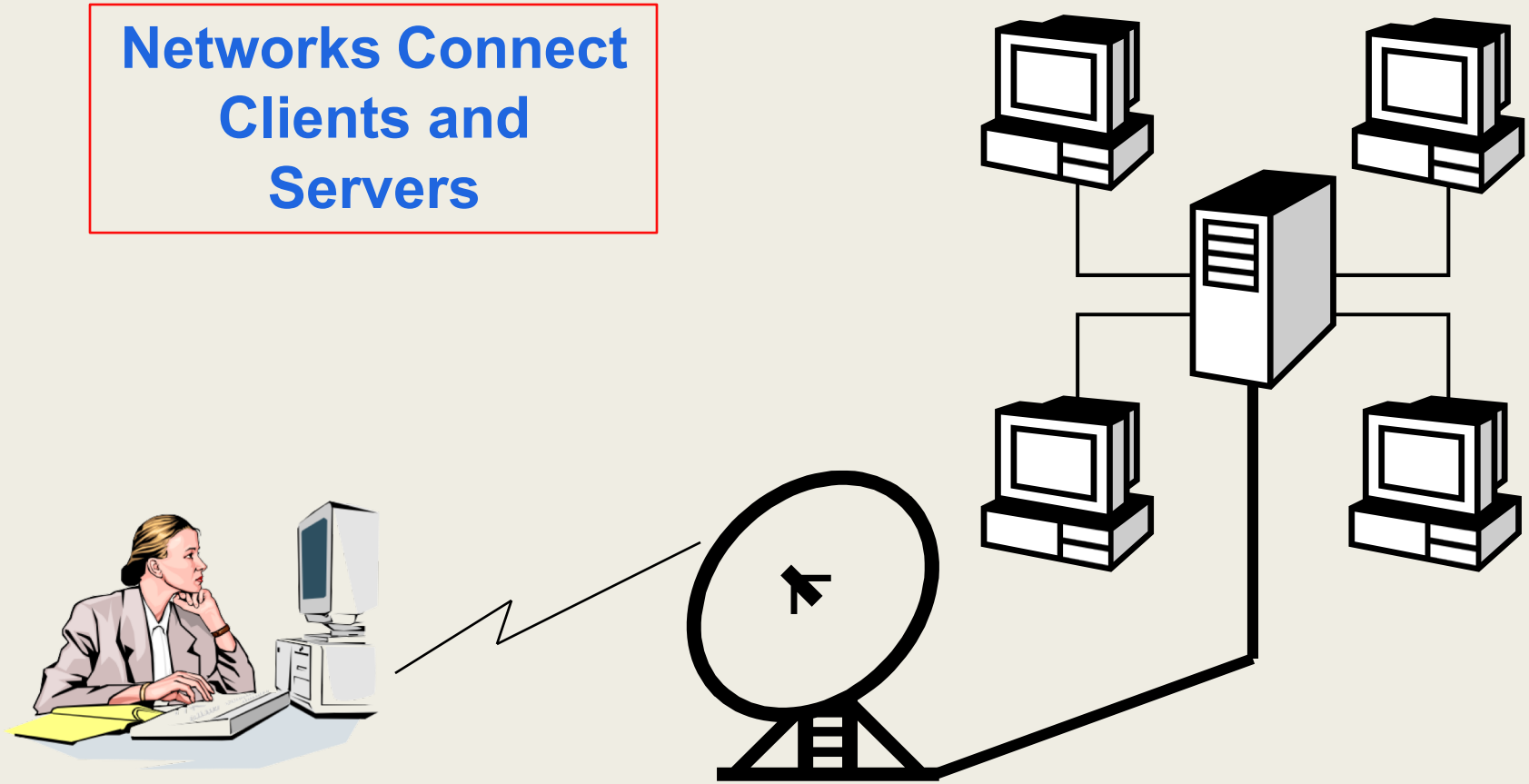
Servers

- Computers or processes that manage network resources
  - Disk drives (file servers)
  - Printers (print servers)
  - Network traffic (network servers)
- Example: Database Server
  - A computer system that processes database queries

Servers Manage Resources

Communication Networks

Networks Connect Clients and Servers



Client–Server Computing

- Process takes place
  - on the server and
  - on the client
- Servers
  - Store and protect data
  - Process requests from clients
- Clients
  - Make requests
  - Format data on the desktop

Client-Server Computing Optimizes Computing Resources

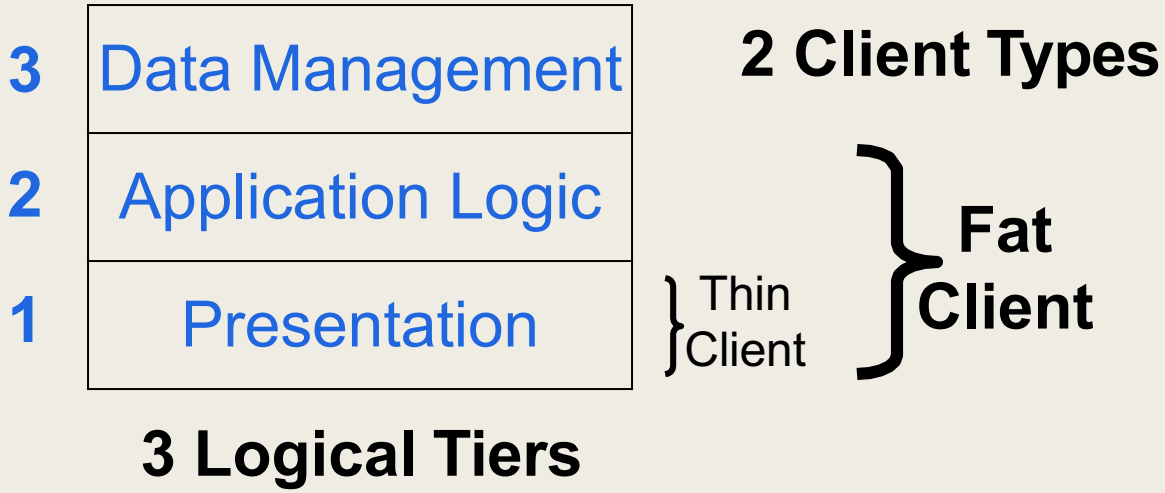
Application Functions

- Software application functions are separated into three distinct parts

Server:
Data Management

Client: Presentation & Application Logic

Application Components



Database Applications:

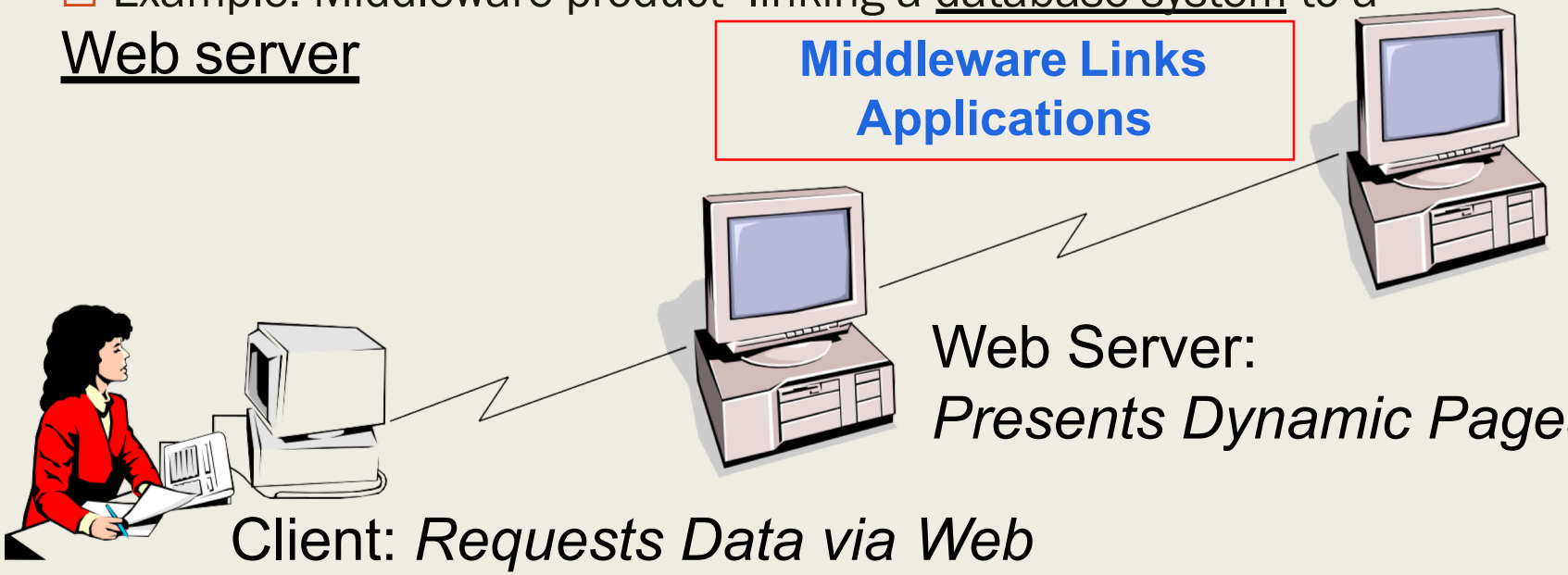
Most common use of client-server architectures

Middleware

- Software that connects two
  - otherwise separate applications
- Example: Middleware product linking a database system to a Web server

Database Server:
Manages Data

Middleware Links Applications



Web Server:
Presents Dynamic Pages

Client: *Requests Data via Web*

Types of Servers

From A to Z

- Application Servers
- Audio/Video Servers
- Chat Servers
- Fax Servers
- FTP Servers
- Groupware Servers
- IRC Servers
- List Servers
- Mail Servers
- News Servers
- Proxy Servers
- Telnet Servers
- Web Servers
- Z39.50 Servers

Source: http://webopedia.lycos.com

Advantages

- *Improved Data Sharing*
- *Integration of Services*
- *Shared Resources amongst Different Platforms*
- *Inter-Operation of Data*
- *Data Processing capability despite the location*
- *Easy maintenance*
- *Security*

Disadvantages

- *Overloaded servers*
- *Impact of centralized architecture*