What is Client/Server Computing

1) **Application Tasks**
   - **User interface**
   - **Presentation logic**
   - **Application logic**
   - **Data requests and result acceptance**
   - **Data integrity**
   - **Physical data management**

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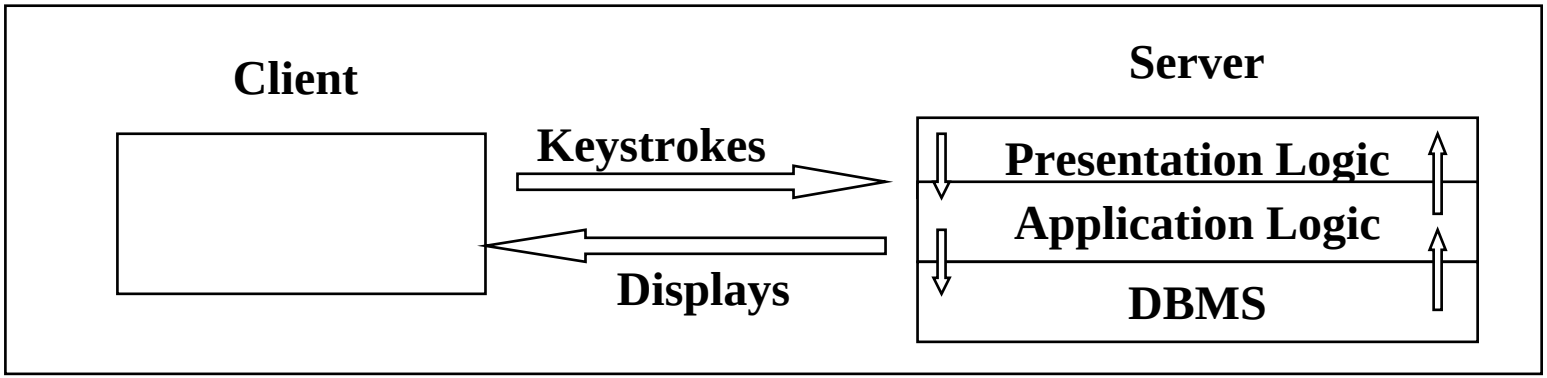
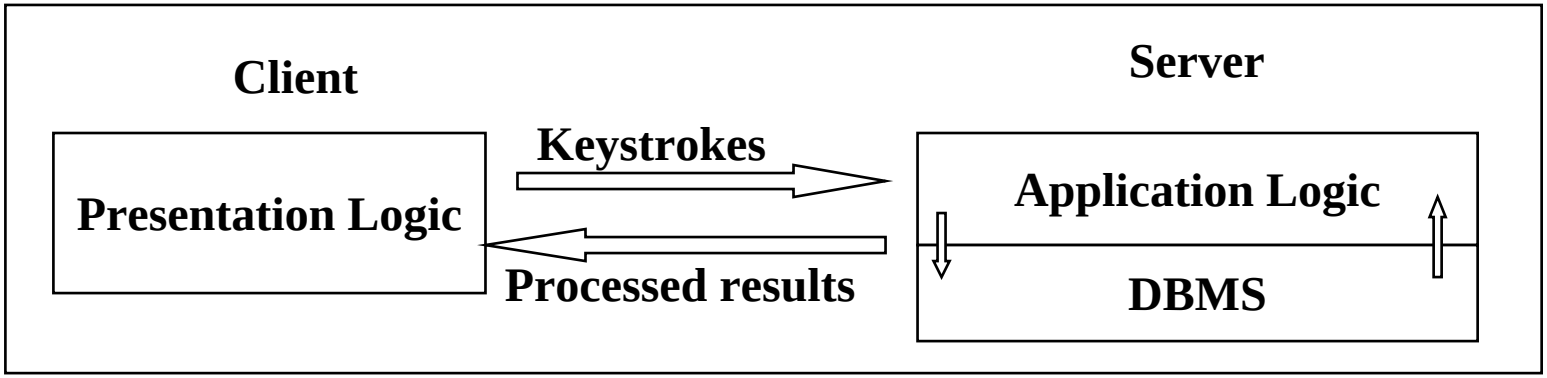


Query language architecture



Original client/server applications

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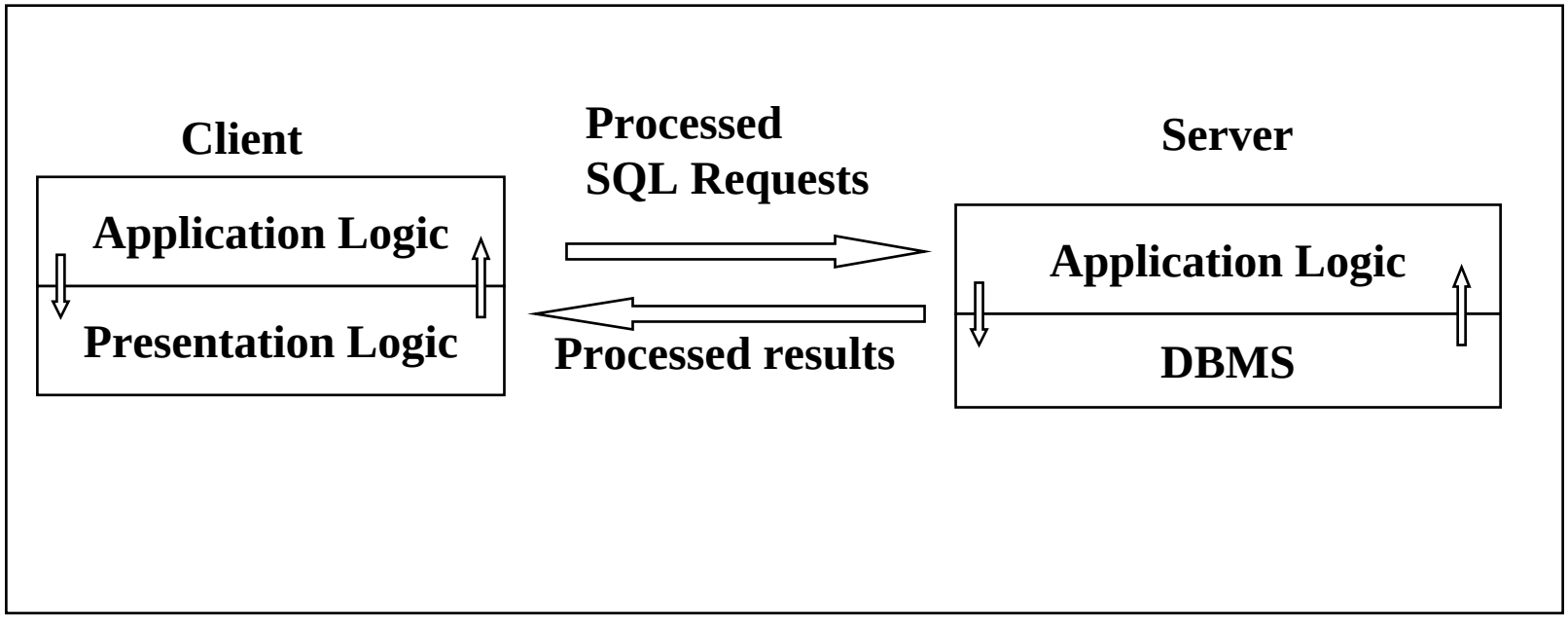

Distribution of processing in client/server model

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2) Rightsizing

- design new applications for the platform they are best suited

- **Downsizing**
  - A host-based application is downsized when it is re-engineered to run in a smaller or LAN-based environment
  - It involves porting applications from mainframe and midrange computers to a smaller platform or a LAN-based client/server architecture

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- **Upsizing**
  - **Applications that have grown their environment are re-engineered to run in a larger environment**

- **Smartsizing**
  - **Re-engineering the business processes themselves, in contrast to downsizing, which re-implements existing automated system on smaller or LAN-based platforms**

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3) Benefits of Client/Server Computing

- **Dollar Savings**
- **Increased Productivity**
- **Flexibility and Scalability**
- **Resource Utilization**
- **Centralized Control**
- **Open Systems**

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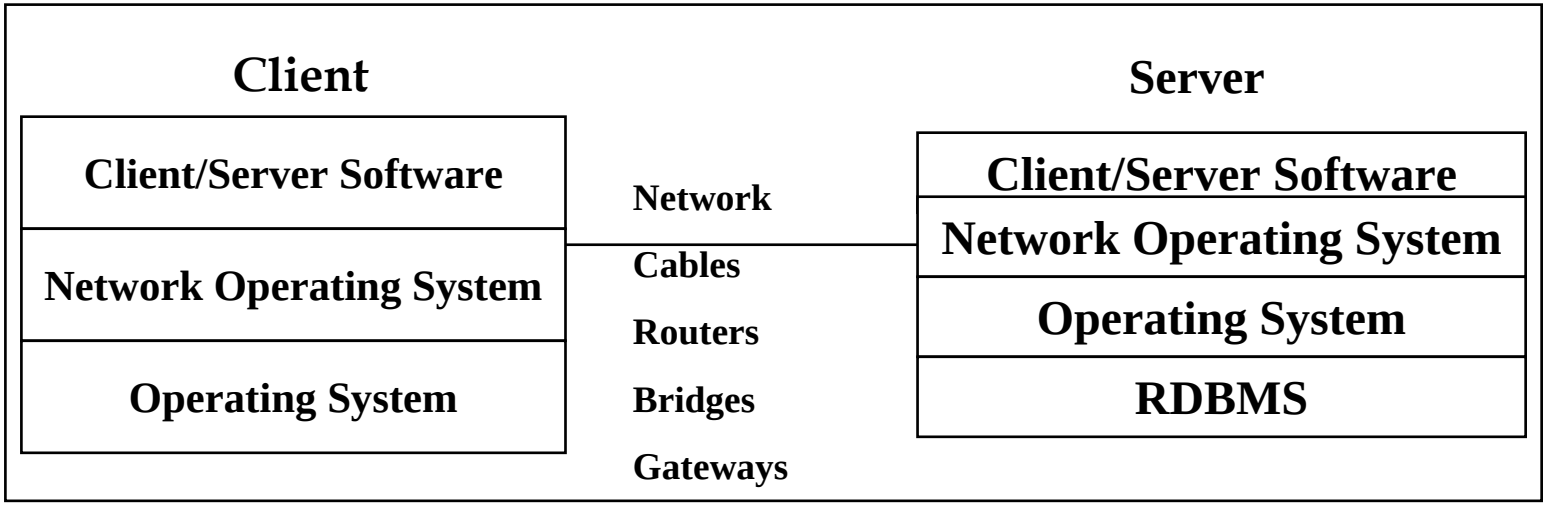

Components of client/server computing

Client Functions	Server Functions
GUI	File, print, database server
Distributed application processing	Distributed application processing
Local application	E-mail
E-mail	Communications
Terminal emulation	Network management
	Resource management
	Configuration management

Original client/server applications

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■ *Client/Server Computing in the Database Market*

- **Combining the features of userfriendly graphical interfaces and the flexibility typical of applications running on a PC, with access to relational database technology provided by a database server**

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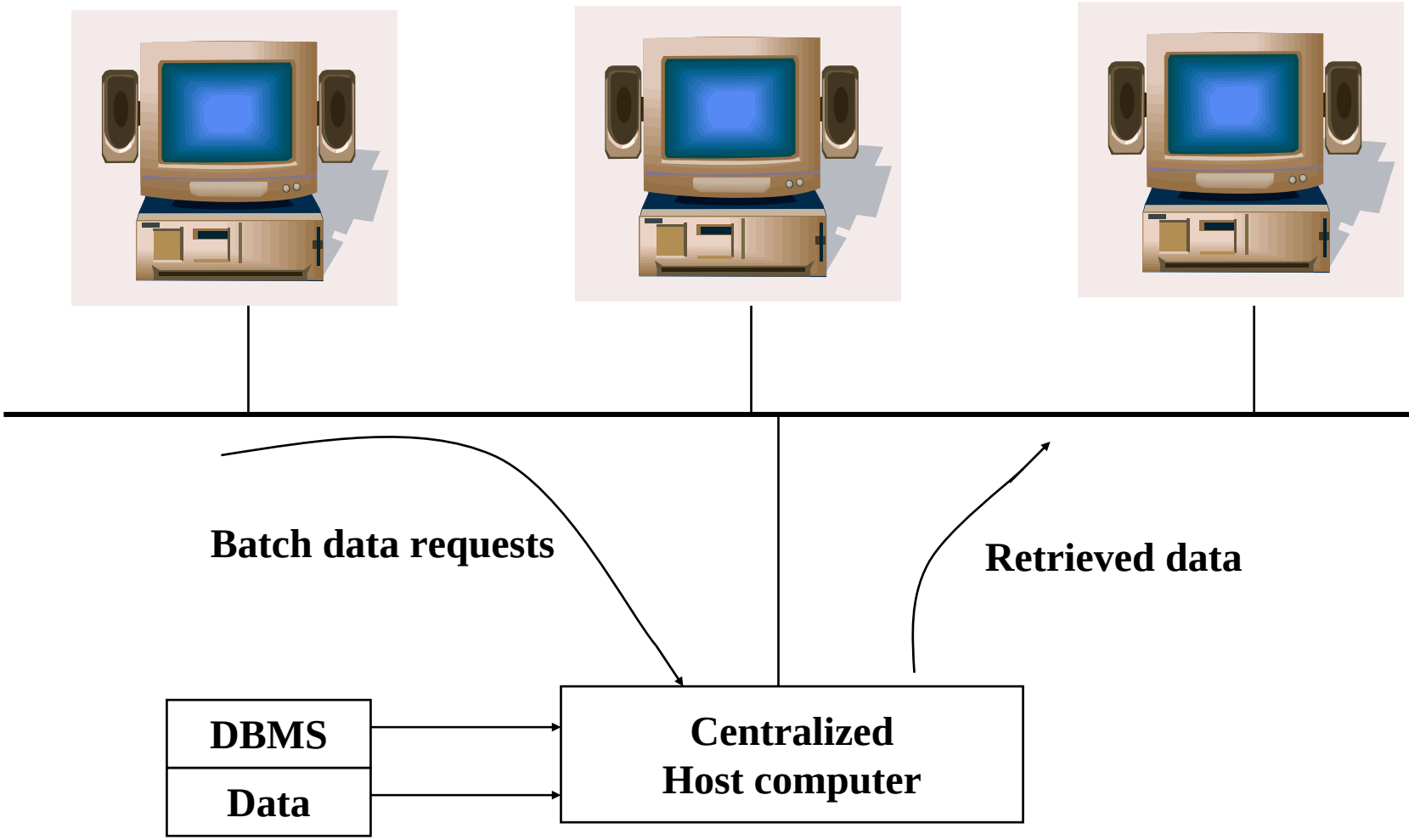
“Dumb” and “smart” terminals and PCs running terminal emulation programs



1) Terminal-based computing

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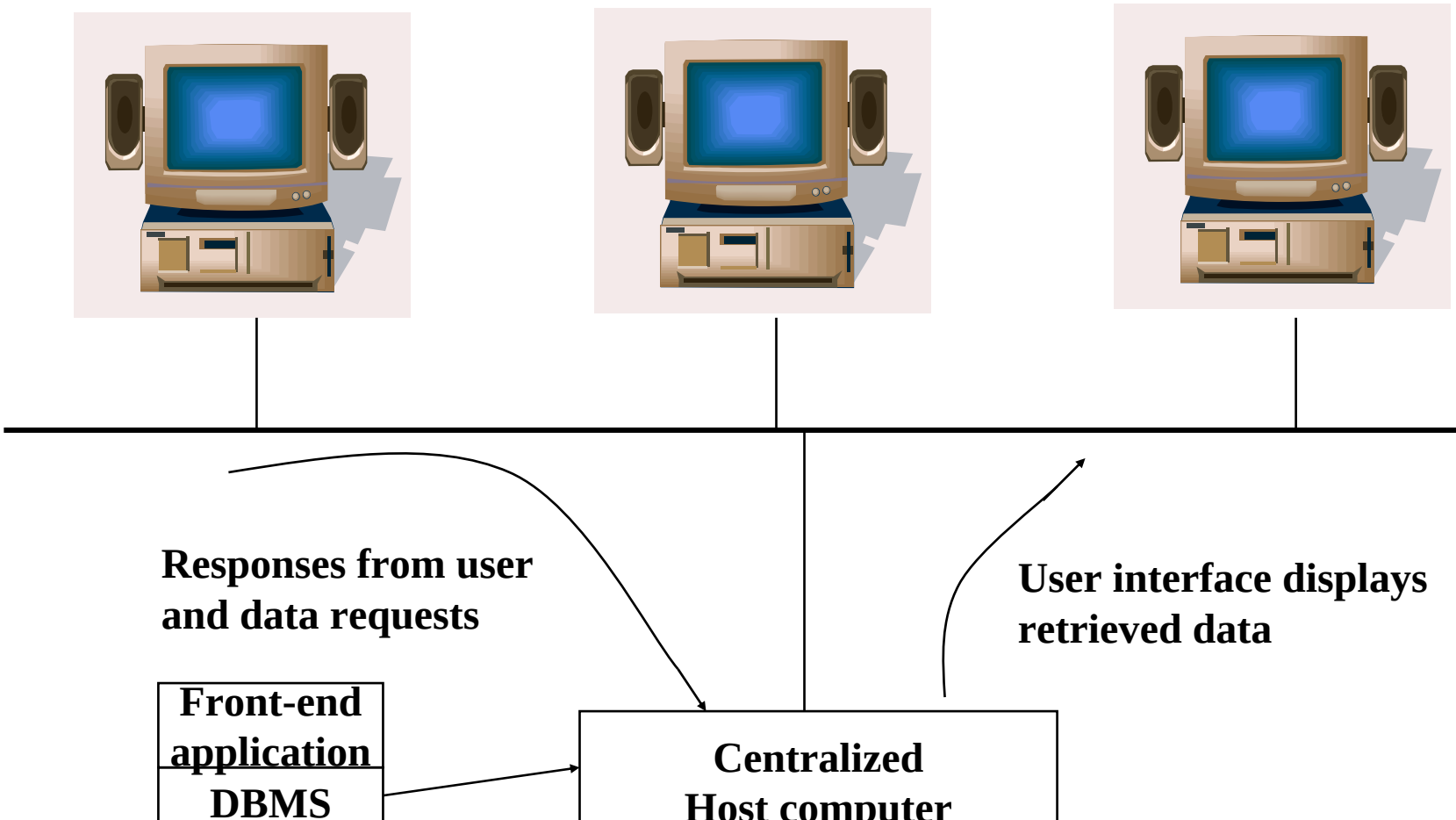
Host computer is managing display of application, user interaction, and data processing for both terminals and PCs



2) User interface management on a host

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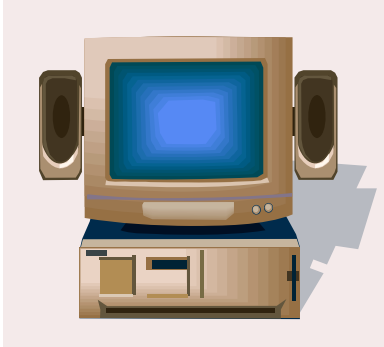
PC application

Application Running on PC
Data manager
Data



Examples include spreadsheet, database, graphics and presentation, and other applications running on PC hardware

3) Stand-alone applications running in PCs

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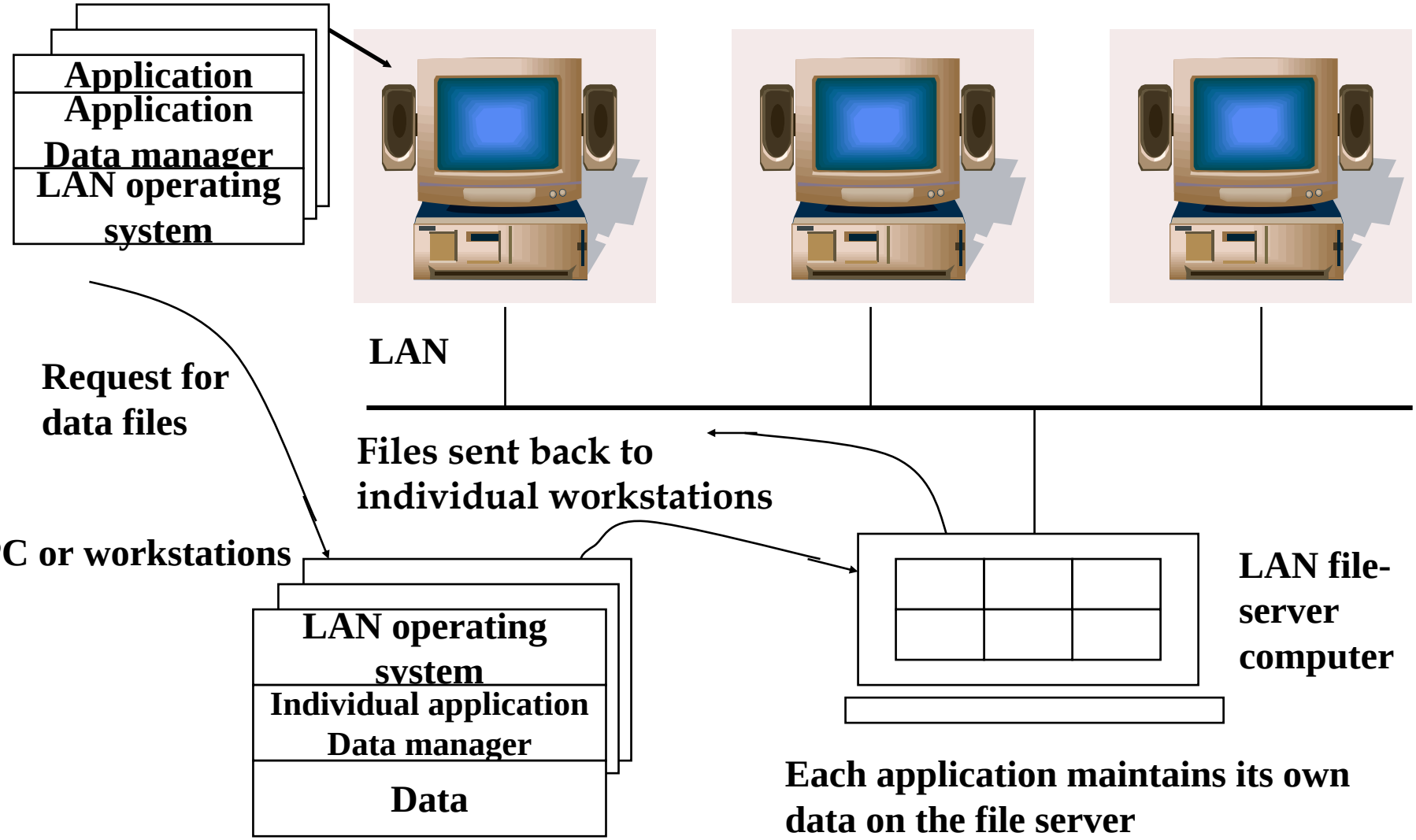
PCs and workstations on a LAN



4) File-server architecture

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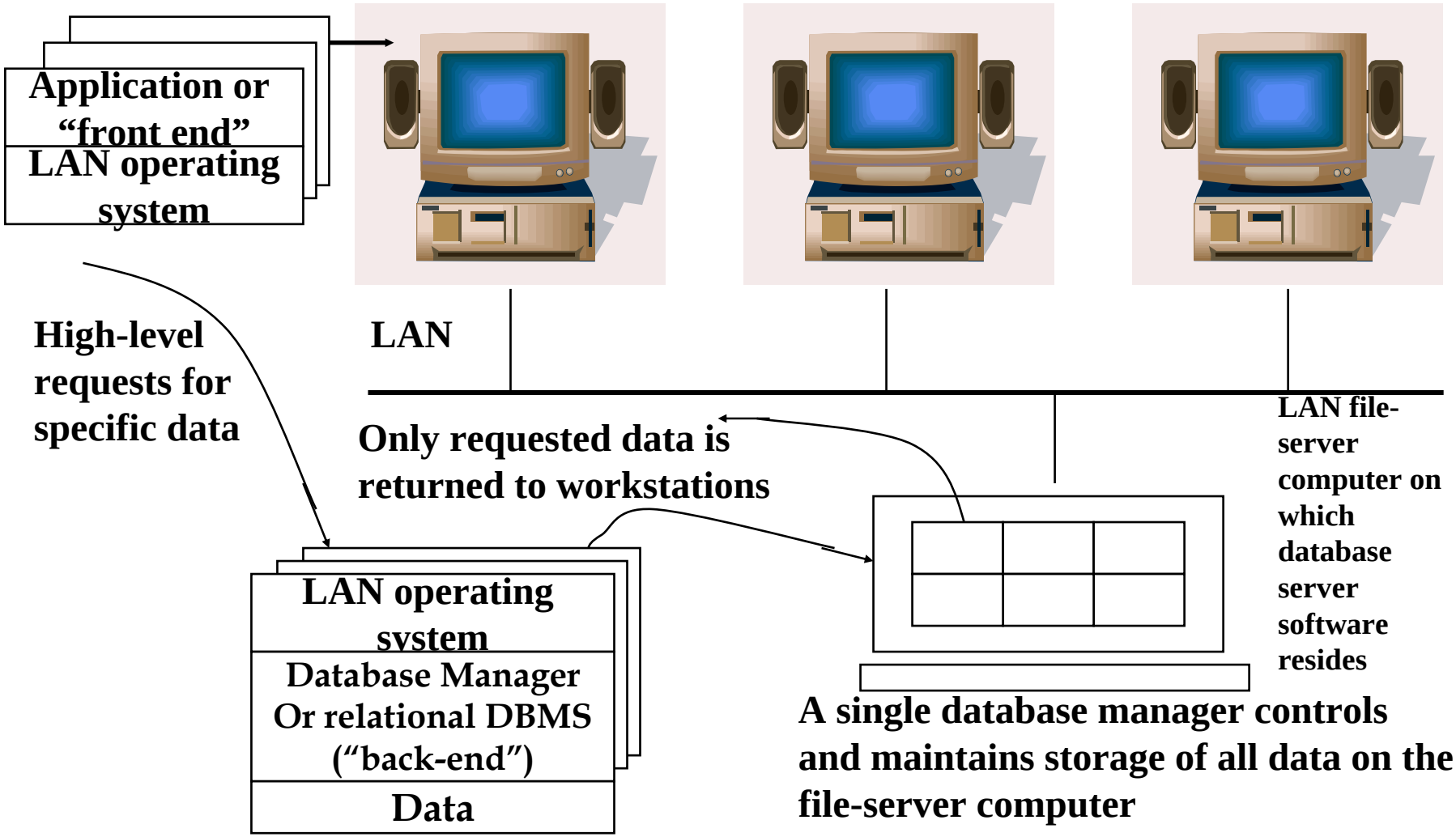
PCs and workstations on a LAN



5) Client-server architecture with database server

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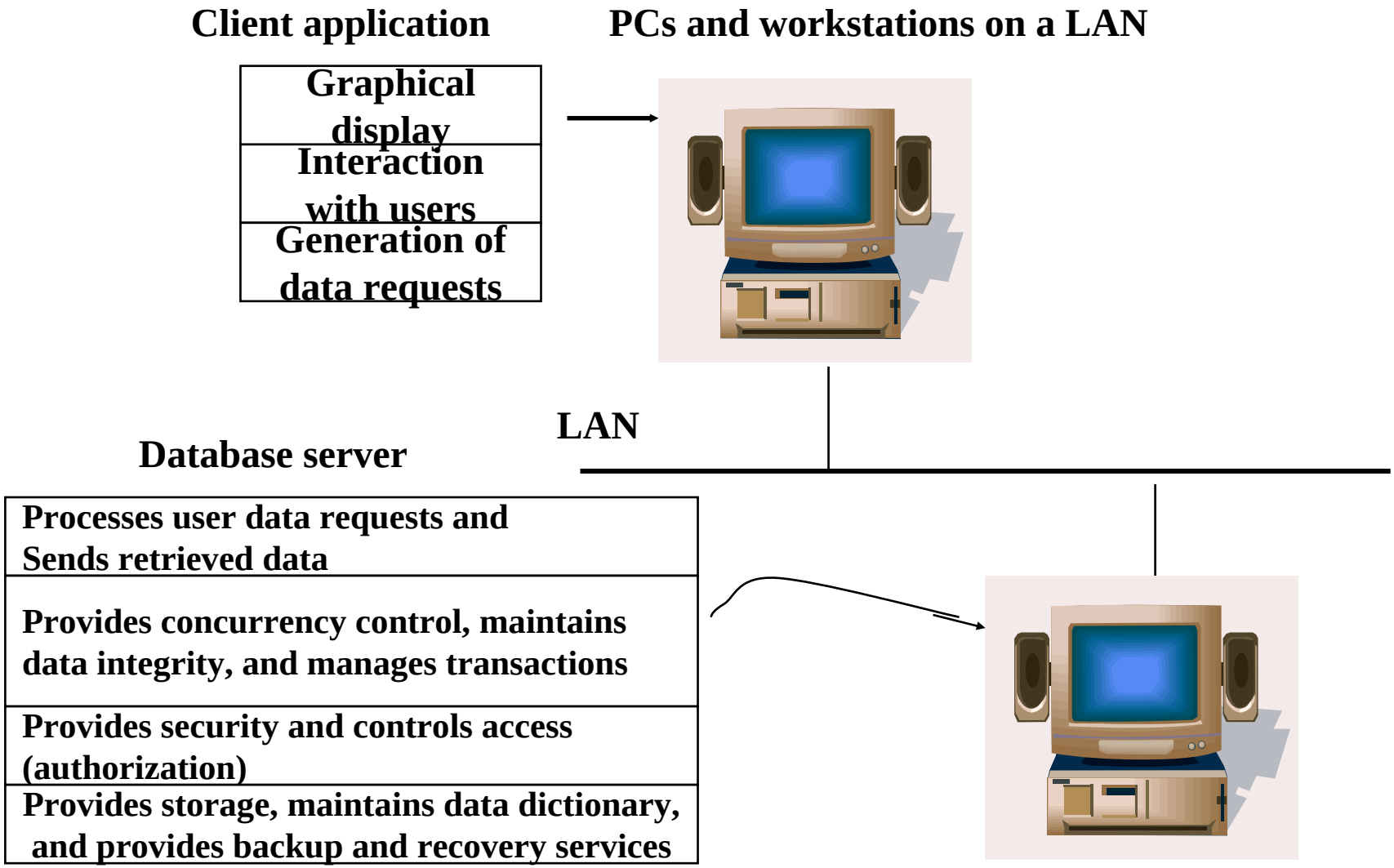

6) Delegation of Services using the client-database-server model

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Advantages of Client/Server Database Computing

- **Client-server applications provide a more efficient division of labor**
- **Client-server architecture provides an opportunity for both horizontal and vertical scaling of resources to do the job**
- **Applications using client-server architecture generally can be run on smaller client computer configurations with better performance**

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Advantages of Client/Server Database Computing (cont.)

- Users can stay with the same familiar and favorite tools they've grown accustomed to using on the PC
- Clients can access more data
- Increasingly valuable data can be properly safeguarded against loss or improper access
- Less expensive and more powerful PC hardware and software are providing business problem solutions that are cheaper to implement than the database applications they replace

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