These slides are for use with

Database Systems
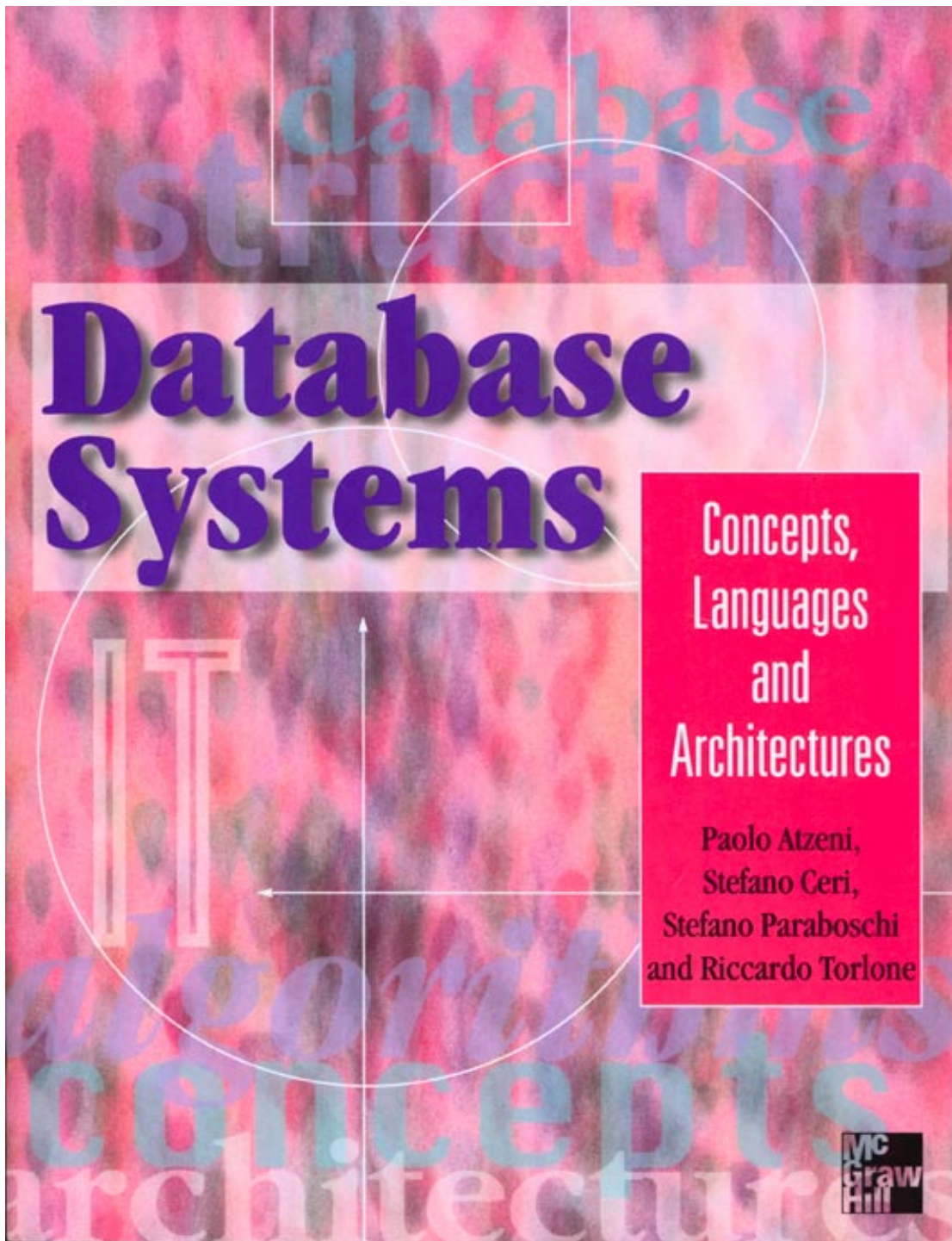## Concepts, Languages and Architectures

Paolo Atzeni • Stefano Ceri • Stefano Paraboschi • Riccardo Torlone
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To view these slides on-screen or with a projector use the arrow keys to move to the next or previous slide. The return or enter key will also take you to the next slide. Note you can press the 'escape' key to reveal the menu bar and then use the standard Acrobat controls — including the magnifying glass to zoom in on details.

To print these slides on acetates for projection use the escape key to reveal the menu and choose 'print' from the 'file' menu. If the slides are too large for your printer then select 'shrink to fit' in the print dialogue box.
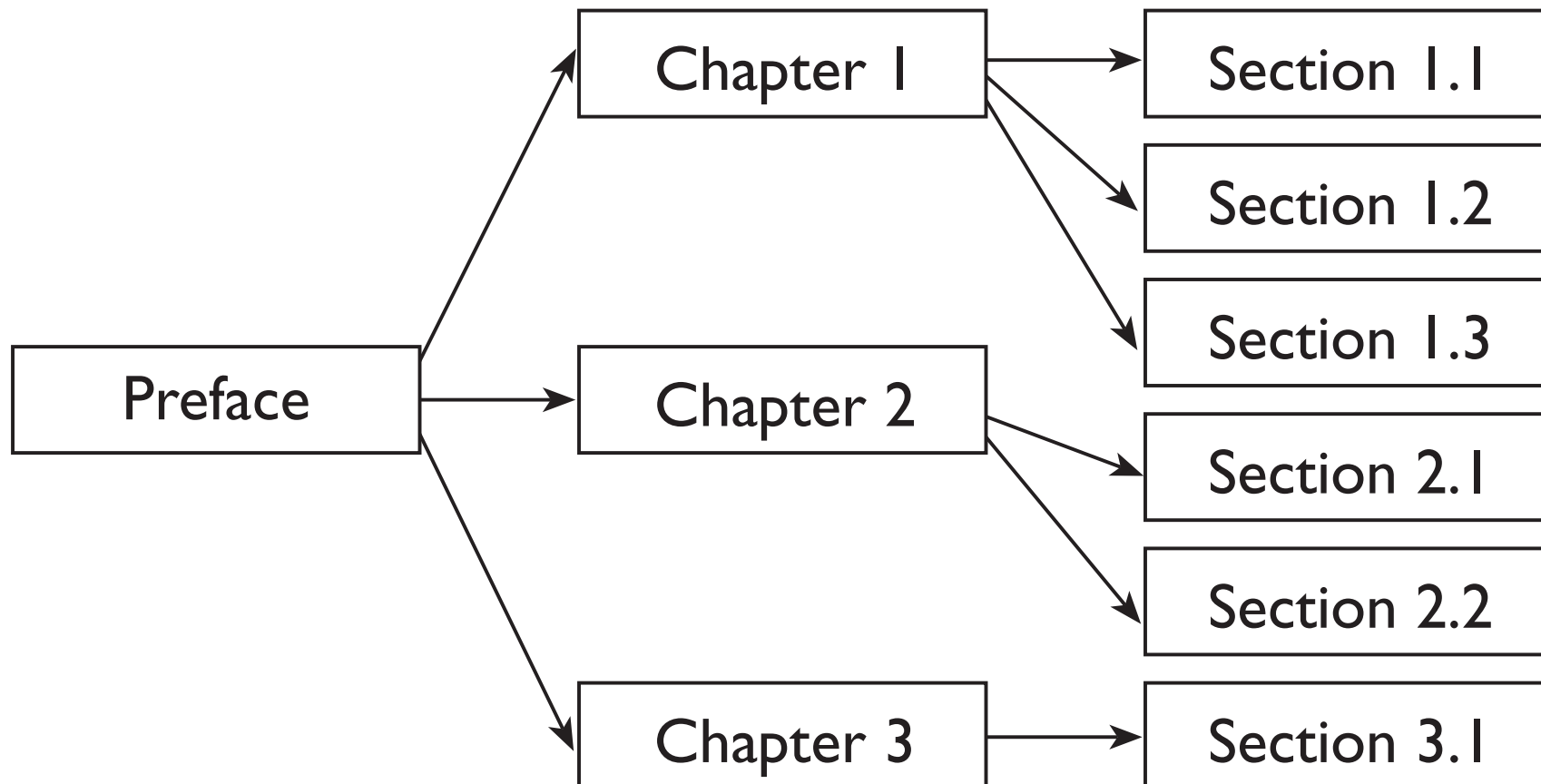
**Press the 'return' or 'enter' key to continue . . .**

database
structure

database

Database Systems

Concepts,
Languages
and
Architectures

Paolo Atzeni,
Stefano Ceri,
Stefano Paraboschi
and Riccardo Torlone

IT

algorithms
concepts
architectures

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Chapter 14

The internet and the World Wide Web

Hypertext with a hierarchical structure

A distributed multimedia hypertext
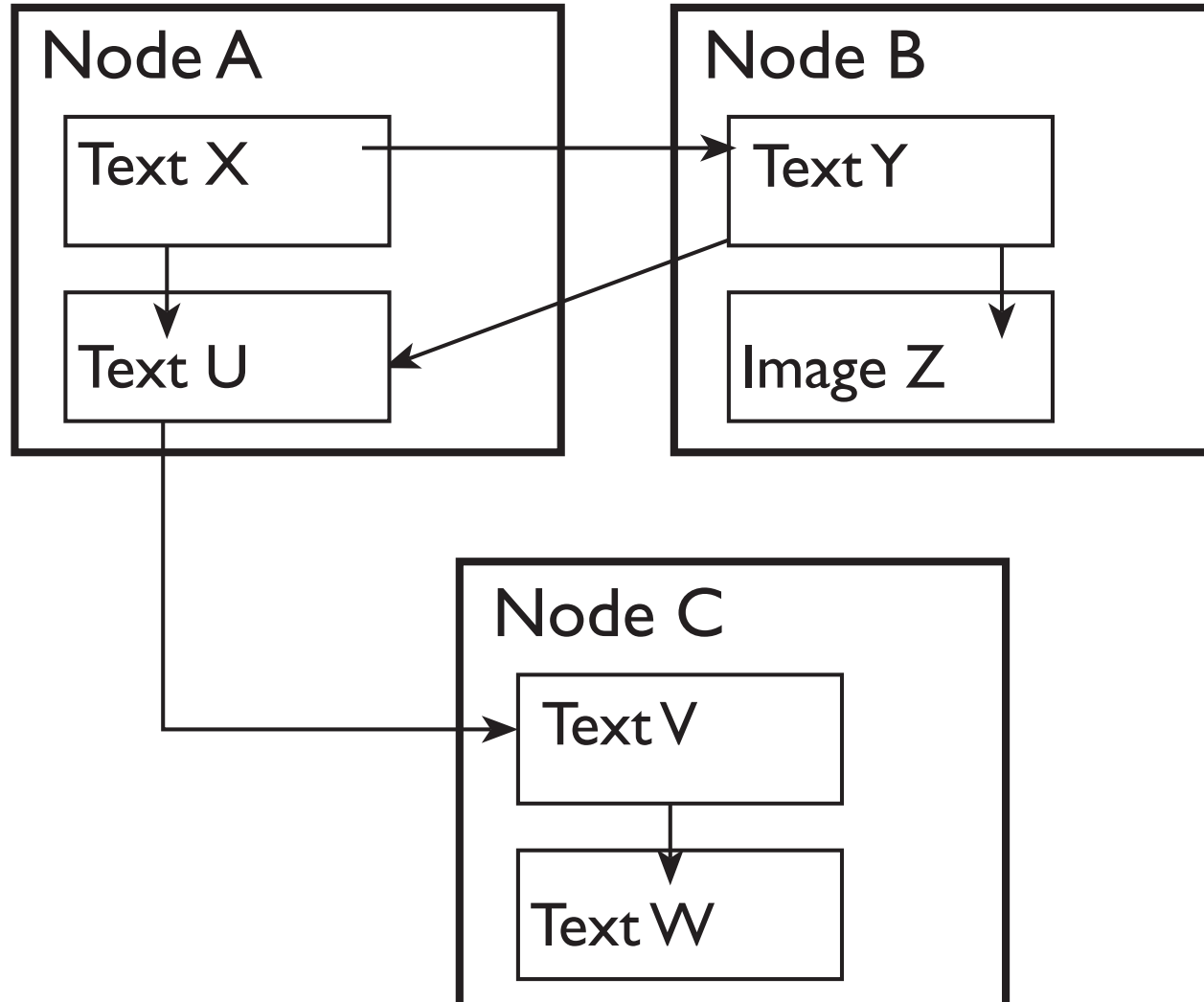
The CGI communication mechanism

| Browser | →HTTP→ | HTTP server | →CGI→ | CGI program | ↔ | . . . |
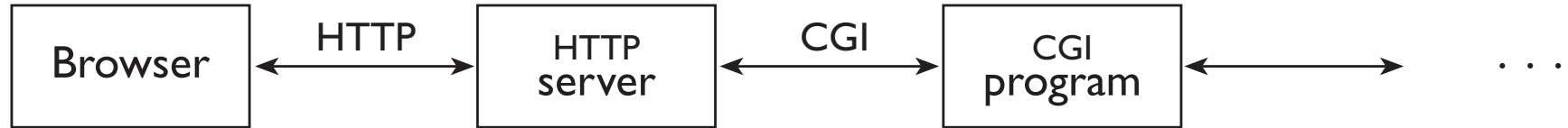
The E-R schema and the logical schema of a database on the employees of a company
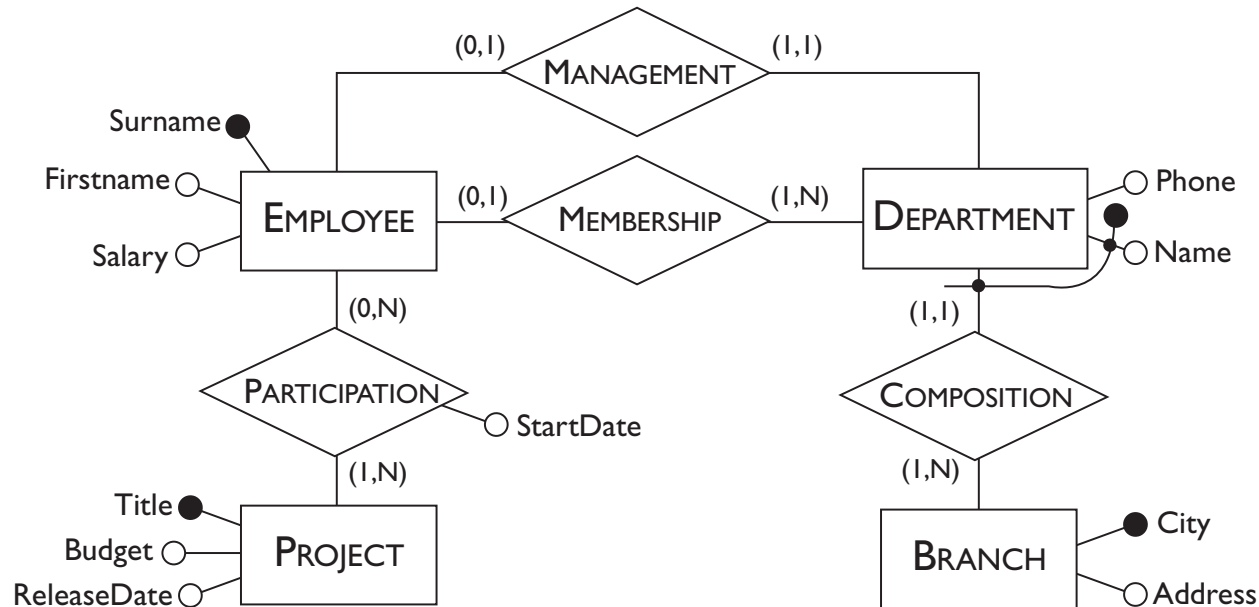
EMPLOYEE(<u>Surname</u>, Firstname, Branch, Department)
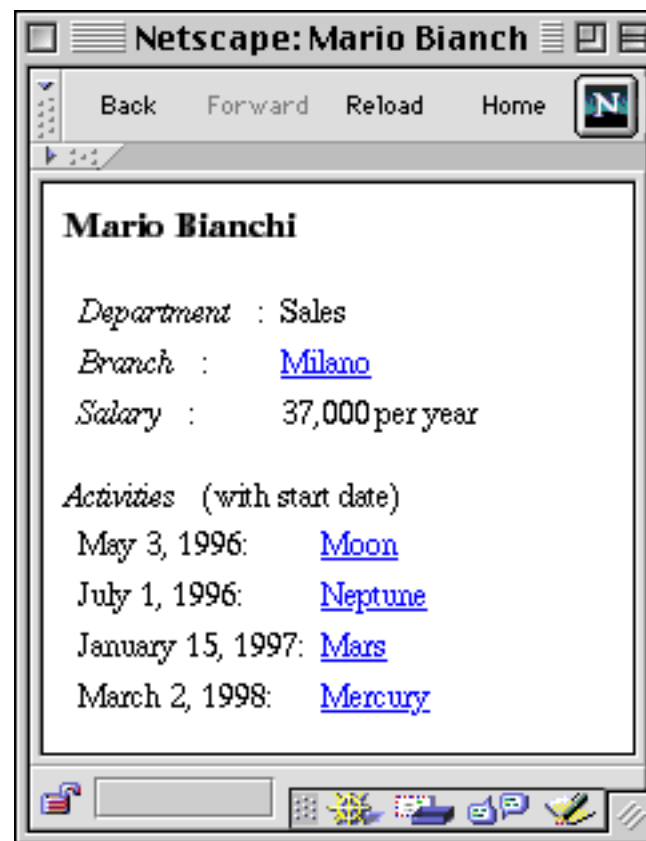DEPARTMENT(<u>Branch</u>, <u>Name</u>, Phone, Manager)
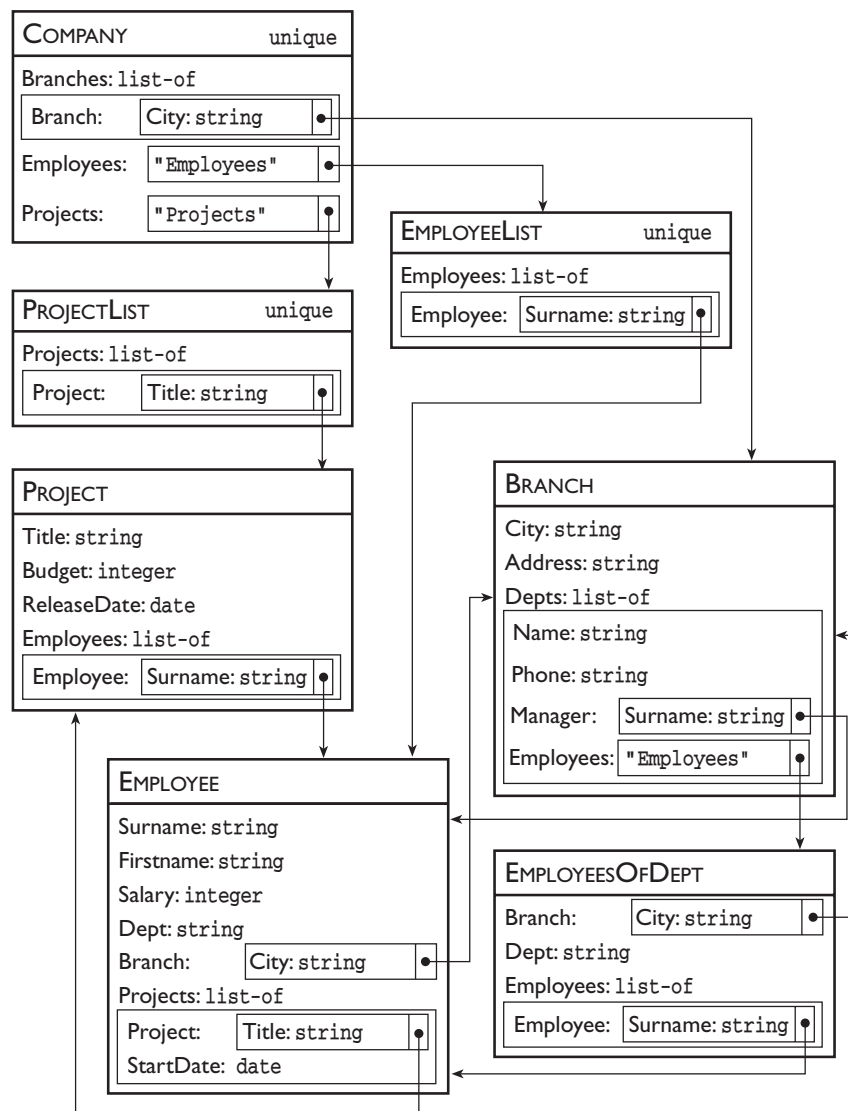BRANCH(<u>City</u>, Address)
PROJECT(<u>Title</u>, Budget, ReleaseDate)
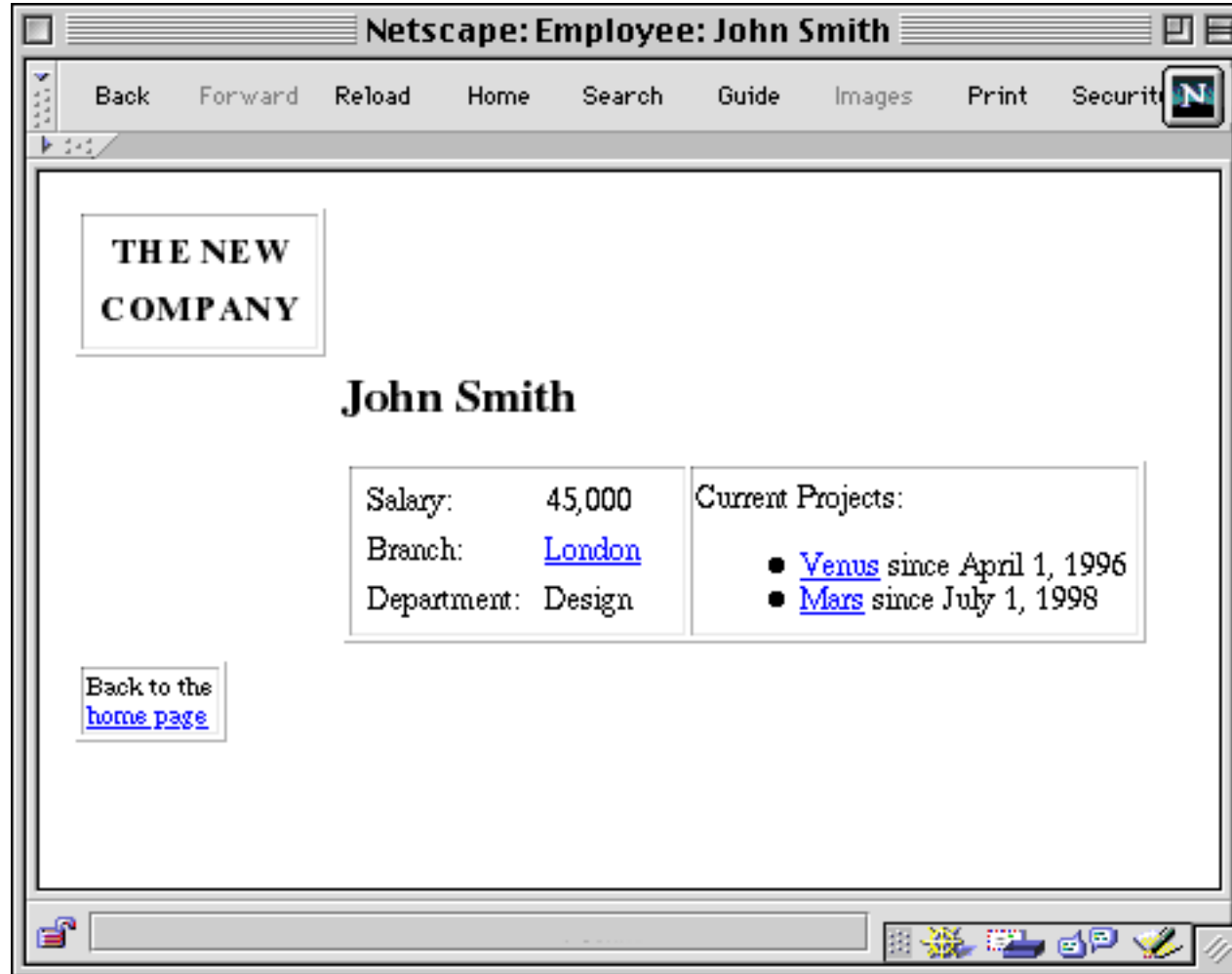PARTICIPATION(Employee, Project, StartDate)

Web page with the same information but different presentation

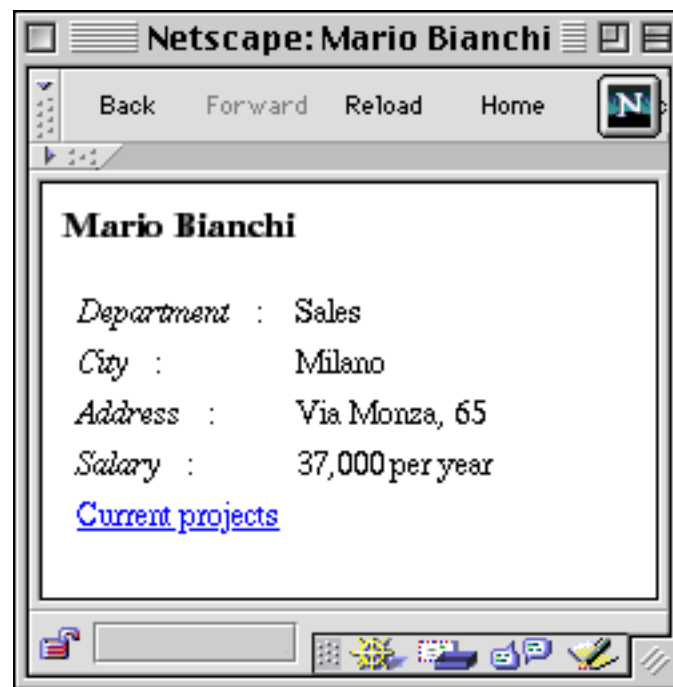| Netscape: John Smith	Netscape: Mario Bianch
Back Forward Reload Home	Back Forward Reload Home
John Smith	**Mario Bianchi**
Department : Design	*Department* : Sales
Branch : London	*Branch* : Milano
Salary : 45,000 per year	*Salary* : 37,000 per year
Activities (with start date)	*Activities* (with start date)
April 1, 1996: Venus	May 3, 1996: Moon
July 1, 1998: Mars	July 1, 1996: Neptune
	January 15, 1997: Mars
	March 2, 1998: Mercury

Logical schema of a hypertext

Another presentation of the previous web page

Netscape: Employee: John Smith

| Back | Forward | Reload | Home | Search | Guide | Images | Print | Securit |

THE NEW COMPANY

John Smith

Salary:	45,000
Branch:	London
Department:	Design

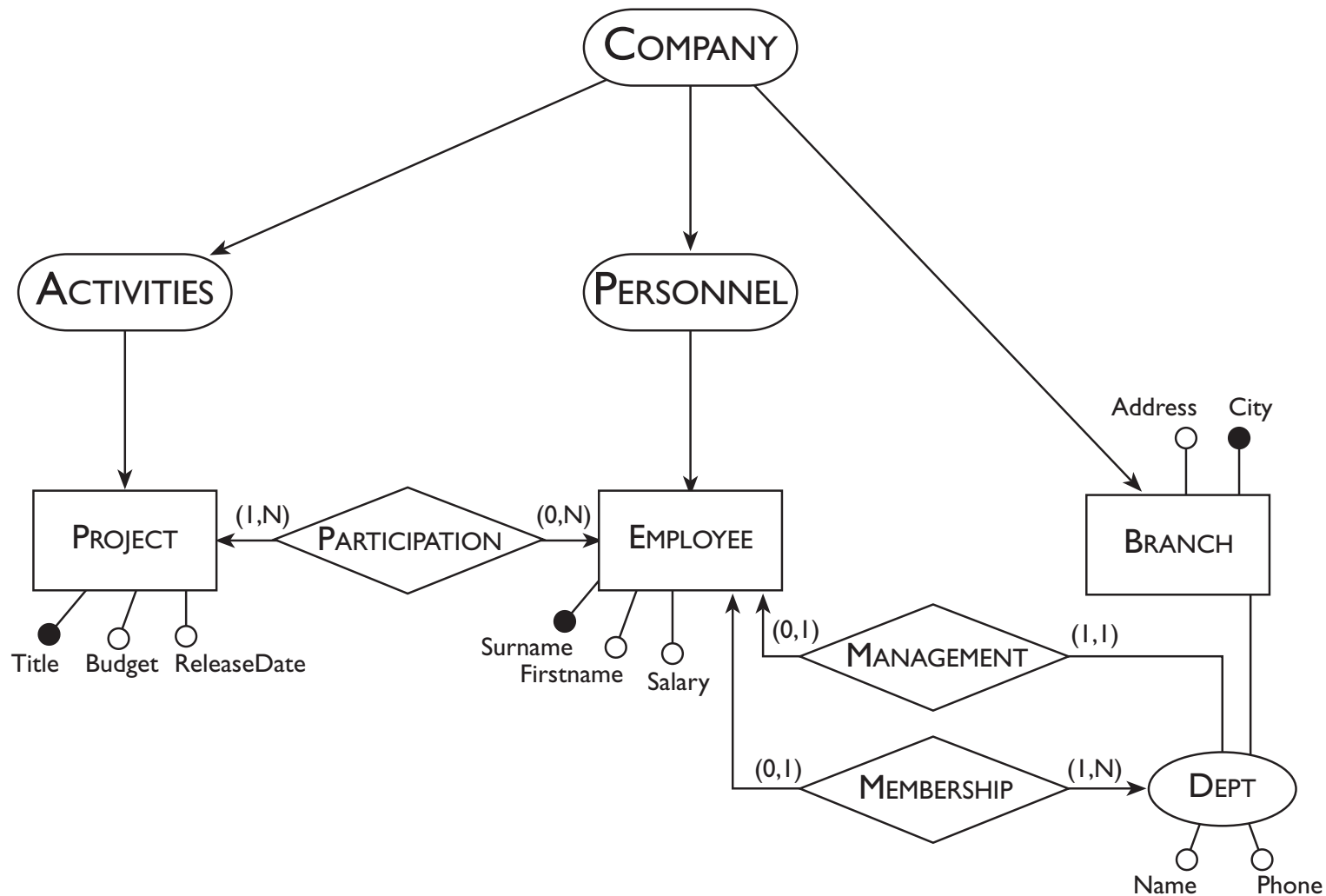Current Projects:

- Venus since April 1, 1996
- Mars since July 1, 1998
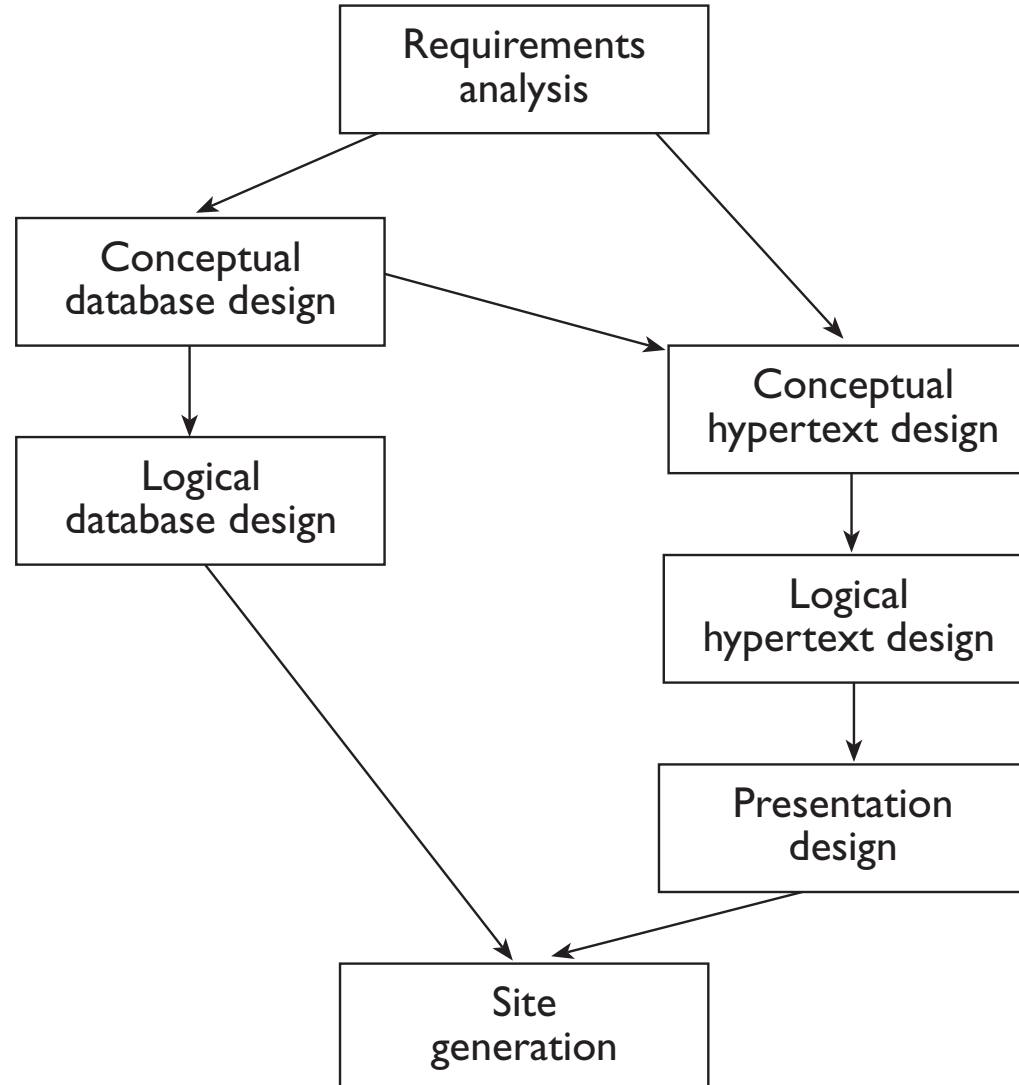
Back to the home page
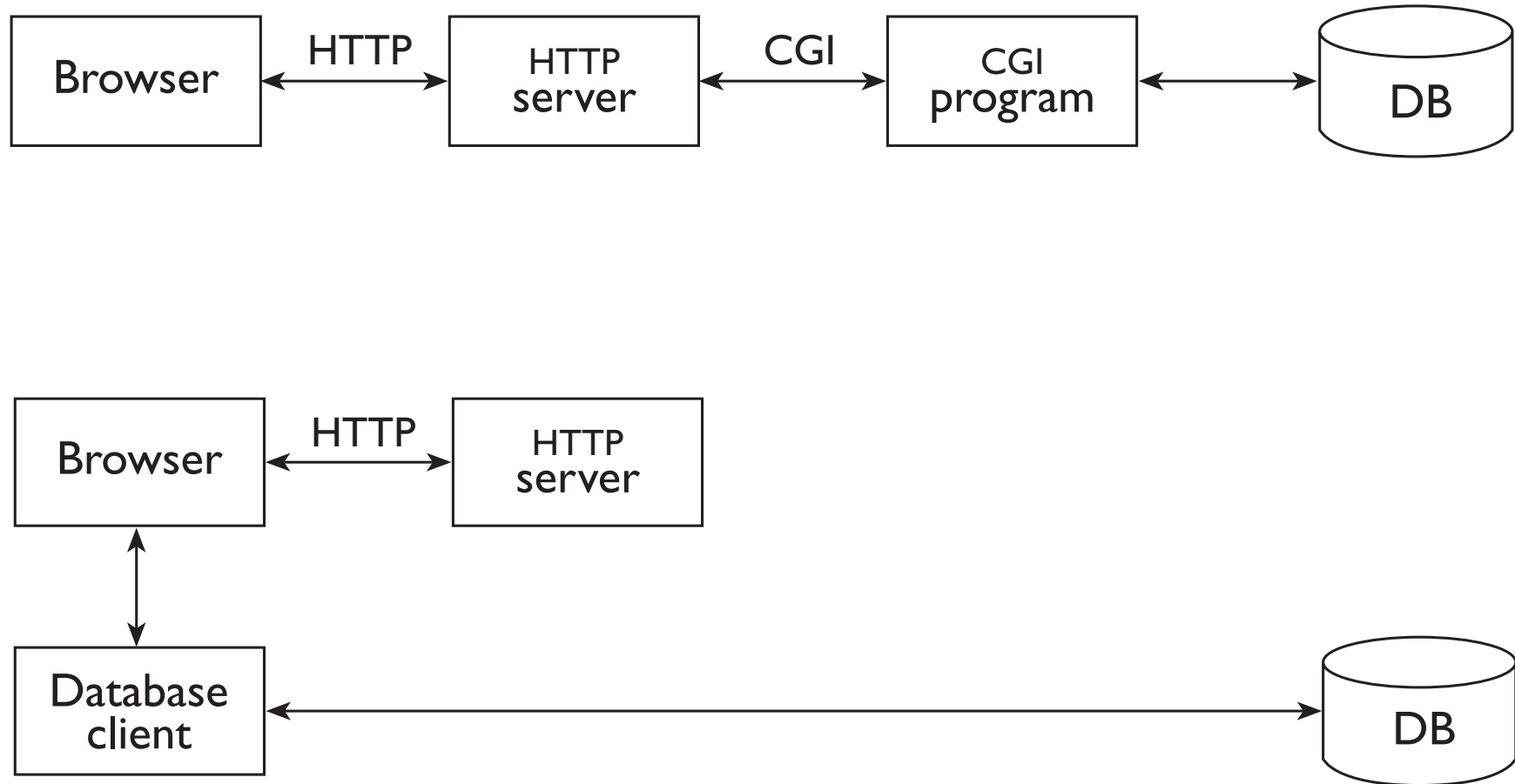
Two employee pages with different contents
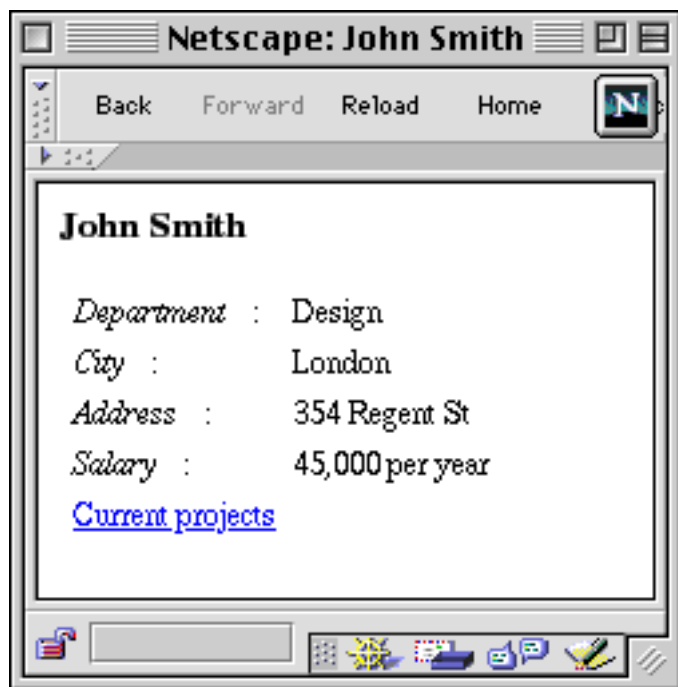
Conceptual schema of a hypertext

A method for the design of data-intensive Web sites

Comparison of CGI and client-based solutions

JDBC architectures

Type 1	Type 2	Type 3	Type 4

JVM — Java Application → JDBC Driver Manager → JDBC/native Bridge → Native driver (DBMS Specific) → DBMS

JVM — Java Application → JDBC Driver Manager → JDBC/ODBC Bridge → ODBC Driver → DBMS

JVM — Java Application → JDBC Driver Manager → JDBC Middleware (Various DBMSs) → DBMS

JVM — Java Application → JDBC Driver Manager → JDBC Driver (DBMS Specific) → DBMS