Data Model

- **Purpose**
  - **To represent data in an understandable way**

- **Definition**
  - **Integrated collection of concepts for describing data, relationships between data, and constraints on the data in an organization**

Data Model

- **Data Model comprises:**
  - **a structural part, consisting of rules according to which databases can be constructed**
  - **a manipulative part, defines the types of operations that are allowed on the data**
  - **possibly a set of integrity rules, which ensures that the data is accurate**

Data Model

- **Categories of data models include:**
  - **Object-based**
  - **Record-based**
  - **Physical**

Data Models

- **Object-Based Data Models**
  - **Entity-Relationship**
  - **Semantic**
  - **Functional**
  - **Object-Oriented**

- **Record-Based Data Models**
  - **Relational Data Model**
  - **Network Data Model**
  - **Hierarchical Data Model**
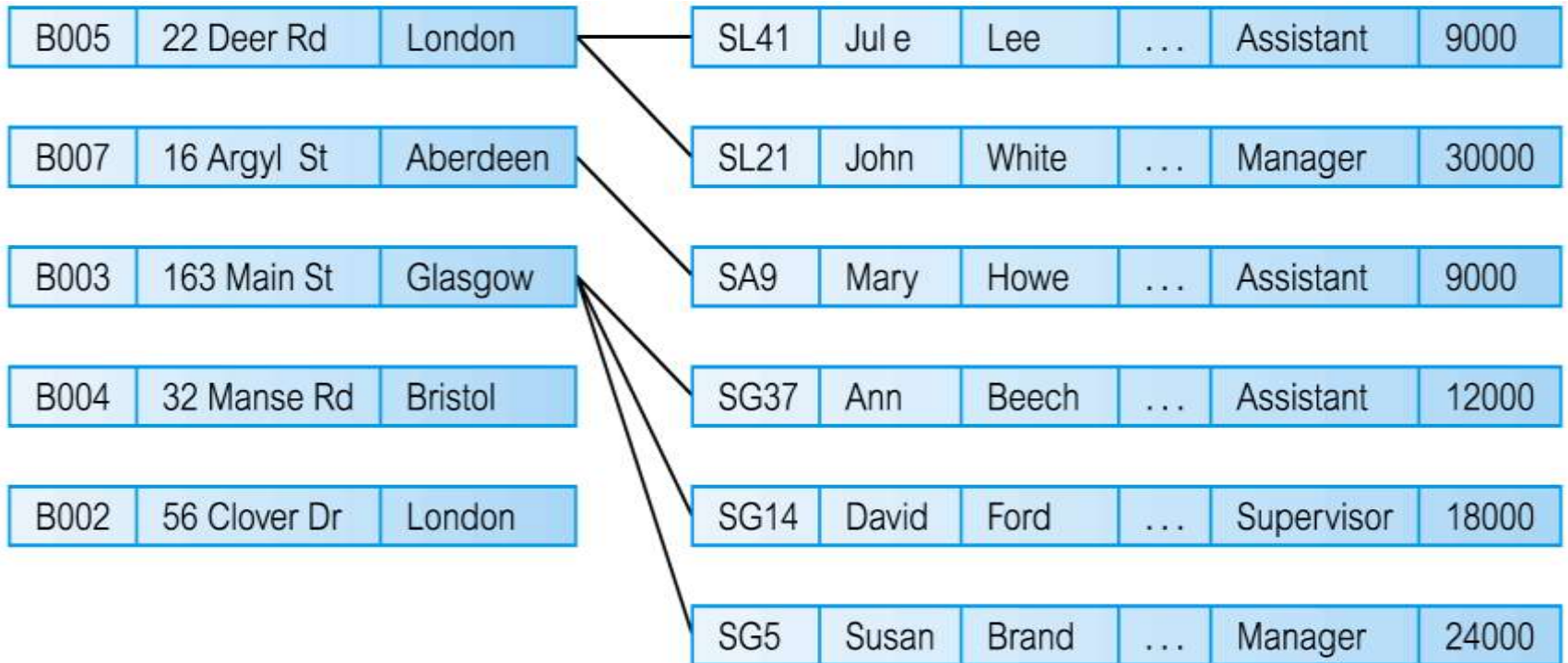
- **Physical Data Models**

Relational Data Model

Branch

branchNo	street	city	postCode
B005	22 Deer Rd	London	SW1 4EH
B007	16 Argyll St	Aberdeen	AB2 3SU
B003	163 Main St	Glasgow	G11 9QX
B004	32 Manse Rd	Bristol	BS99 1NZ
B002	56 Clover Dr	London	NW10 6EU

Staff

staffNo	fName	lName	position	sex	DOB	salary	branchNo
SL21	John	White	Manager	M	1-Oct-45	30000	B005
SG37	Ann	Beech	Assistant	F	10-Nov-60	12000	B003
SG14	David	Ford	Supervisor	M	24-Mar-58	18000	B003
SA9	Mary	Howe	Assistant	F	19-Feb-70	9000	B007
SG5	Susan	Brand	Manager	F	3-Jun-40	24000	B003
SL41	Julie	Lee	Assistant	F	13-Jun-65	9000	B005

Network Data Model

Hierarchical Data Model