Introduction to Databases

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Applications of Database Systems

- Purchases from the supermarket

- Purchases using your credit card

- Booking a holiday at the travel agents

- Using the local library

- Using the Internet

- Studying at university

File-Based Systems

- Why studying file-based system?
    - Understanding the problems inherent in file-based systems may prevent us from repeating these problems in database systems.
    - If you need to convert a file-based system to a database system, understanding how the file system works will be extremely useful.
- ***File-based system***:
    - A collection of application programs that perform services for the end users (e.g. production of reports).
    - Each program defines and manages ***its own data***.
- File-based system were an early attempt to computerize the manual filing system.
    - Physical files saving information
    - E.g., Bank statement

File-Based Systems

- The manual filing system works well when
  - The number of items to be stored is small
  - There are large numbers of items and we have only to store and retrieve them

- The manual filing system breaks down when we have to cross-reference or process the information in the files

- Example:
  - A typical real estate agent's office might have a separate file for each property for sale or rent, each potential buyer and renter, and each member of staff.

File-Based Systems

- Case Study:
  - The Sales Department is responsible for the selling and renting of properties.
    - A client who wishes to offer his or her property as a rental approaches the Sales Department, fill out "Property for Rent" form.

DreamHome
Property for Rent Details
Property Number: PG21

Address: 18 Dale Rd
City: Glasgow
Postcode: G12
Type: House   Rent: 600
No of Rooms: 5

Allocated to Branch:
163 Main St, Glasgow
Branch No: B003

Staff Responsible
Ann Beech

Owner's Details

Name: Carol Farrel
Address: 6 Achray St,
Glasgow G32 9DX
Tel No.: 0141-357-7419
Owner No.: C087

Business Name: _____
Address: _____
_____
Tel No.: _____
Owner No.: _____
Contact Name: _____
Business Type: _____

File-Based Systems

- Case Study:
  - The Sales Department is responsible for the selling and renting of properties.
    - The Sales Department handles inquiries from clients, and inquiry form is filled out.

DreamHome
Client Details
Client Number: CR74

First Name: Mike   Last Name: Ritchie

Address: 18 Tain St,   Tel No. 01475-392178

PA1G 1YQ

Property Requirement Details

Preferred Property Type: House   Maximum Monthly Rent: 750

General Comments: Currently living at home with parents

Getting married in August

Seen By: Ann Beech   Date: 24-Mar-04

Branch No: B003   Branch City: Glasgow

File-Based Systems

- The Sales Department creates an information systems to handle the renting of property.
- The system consists of three files containing property, owner, and client details.

PropertyForRent

propertyNo	street	city	postcode	type	rooms	rent	ownerNo
PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46
PL94	6 Argyll St	London	NW2	Flat	4	400	CO87
PG4	6 Lawrence St	Glasgow	G11 9QX	Flat	3	350	CO40
PG36	2 Manor Rd	Glasgow	G32 4QX	Flat	3	375	CO93
PG21	18 Dale Rd						
PG16	5 Novar Dr						

PrivateOwner

ownerNo	fName	lName	address	telNo
CO46	Joe	Keogh	2 Fergus Dr, Aberdeen AB2 7SX	01224-861212
CO87	Carol	Farrel	6 Achray St, Glasgow G32 9DX	0141-357-7419
CO40	Tina			
CO93	Tony			

Client

clientNo	fName	lName	address	telNo	prefType	maxRent
CR76	John	Kay	56 High St, London SW1 4EH	0207-774-5632	Flat	425
CR56	Aline	Stewart	64 Fern Dr, Glasgow G42 0BL	0141-848-1825	Flat	350
CR74	Mike	Ritchie	18 Tain St, PA1G 1YQ	01475-392178	House	750
CR62	Mary	Tregear	5 Tarbot Rd, Aberdeen AB9 3ST	01224-196720	Flat	600

File-Based Systems

- Case Study:
  - The Contracts Department is responsible for handling the lease agreements associated with properties for rent.
    - Whenever a client agrees to rent a property, a form with the client and property details is filled.

DreamHome
Lease Details
Lease Number: 10012

Client No. CR74

Full Name Mike Ritchie

Address (previous) 18 Tain St,

PA1G 1YQ

Tel No. 01475-392178

Property No. PG21

Address 18 Dale Rd,

Glasgow G12

Payment Details

Monthly Rent 600

Payment Method Cheque

Deposit 1200 Paid (Y or N) Y

Rent Start Date 1-Jul-04

Rent Finish Date 30-Jun-05

Duration 1 Year

File-Based Systems

- The Contract Department creates an information systems to handle lease agreements.
- The system consists of three files storing lease, properpty, and client details.

Lease

leaseNo	propertyNo	clientNo	rent	payment Method	deposit	paid	rentStart	rentFinish	duration
10024	PA14	CR62	650	Visa	1300	Y	1-Jun-05	31-May-05	12
10075	PL94	CR76	400	Cash	800	N	1-Aug-05	31-Jan-05	6
10012	PG21	CR74	600	Cheque	1200	Y	1-Jul-05	30-Jun-05	12

PropertyForRent

propertyNo	street	city	postcode	rent
PA14	16 Holhead	Aberdeen	AB7 5SU	650
PL94	6 Argyll St	London	NW2	400
PG21	18 Dale Rd	Glasgow	G12	600

Client

clientNo	fName	lName	address	telNo
CR76	John	Kay	56 High St, London SW1 4EH	0171-774-5632
CR74	Mike	Ritchie	18 Tain St, PA1G 1YQ	01475-392178
CR62	Mary	Tregear	5 Tarbot Rd, Aberdeen AB9 3ST	01224-196720

File-Based Systems

Sales Department

DreamHome
Client Details
Client Number: CR74

First Name Mike   Last Name Ritchie

Address 18 Tain St,   Tel No. 01475-392178

PA1G 1YQ

Property Requirement Details

Preferred Property Type House   Maximum Monthly Rent 750

General Comments Currently living at home with parents

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Seen By Ann Beech   Date 24-Mar-04

Branch No B003   Branch City Glasgow

Contracts Department

DreamHome
Lease Details
Lease Number: 10012

Client No. CR74   Property No. PG21

Full Name Mike Ritchie   Address 18 Dale Rd,

Address (previous) 18 Tain St,   Glasgow G12

PA1G 1YQ

Tel No. 01475-392178

Payment Details

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Deposit 1200 Paid (Y or N) Y   Duration 1 Year

File-Based Systems

File-based processing in Sales and Contracts Departments

Sales Files

PropertyForRent (propertyNo, street, city, postcode, type, rooms, rent, ownerNo)
PrivateOwner (ownerNo, fName, lName, address, telNo)
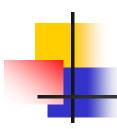**Client** (clientNo, fName, lName, address, telNo, prefType, maxRent)

Contracts Files

Lease (leaseNo, propertyNo, clientNo, rent, paymentMethod, deposit, paid, rentStart, rentFinish, duration)
PropertyForRent (propertyNo, street, city, postcode, rent)
Client (clientNo, fName, lName, address, telNo)

File-Based Systems

File-based processing in Sales and Contracts Departments