

**IDS 410 – Business Database Technology Fall 2016**

## Individual Assignment #1 (database analysis)

## E-R Modeling of Home Sweet Home

Assigned Date: Thursday, September 1, 2016

Due Date: Thursday, September 15, 2016

**Problem Statement**

Please draw an E-R diagram for the Home Sweet Home case (see pages 2-6).

Use the Super type and Sub type concepts (see Chapter 4 [8<sup>th</sup> or 9<sup>th</sup> edition] or Chapter 3 [10<sup>th</sup> edition]) if needed. State any assumption you have when developing the diagram.

**Submit the printout of the following 3 items in class on the due date:**

1. A cover page with the following information
  - IDS 410 – Business Database Technology
  - Fall 2016
  - Assignment #1 (database analysis)
  - E-R Modeling of Home Sweet Home
  - Your name and the last four digits of your University ID Number (UIN)
2. The E-R diagram and assumptions, if any, for Home Sweet Home case. Use a computer-based graphic tool to draw your diagrams such as VISIO or Gliffy (visit <http://www.gliffy.com>).
3. You also need to show the attributes for each entity on your E-R diagram. If you run out of space to show all the attributes in your diagram, you can indicate only the identifier of each entity on your E-R diagram. In this case, however, you also need to turn in a list of all attributes for each entity in an Excel worksheet.

This case study describes a hypothetical company called Home Sweet Home, which specializes in the management of properties for rent on behalf of the owners. The company offers a complete service to owners who wish to rent out their furnished property. The service provided by Home Sweet Home includes advertising the property in the local or national press (when necessary), interviewing prospective renters, organizing visits to the property by prospective renters, and negotiating the lease agreement. Once rented, Home Sweet Home assumes responsibility for the property, which involves regular property inspections by Home Sweet Home staff. Listed below is a description of the data recorded, maintained, and accessed at each branch office to support the day-to-day operation and management of Home Sweet Home.

## Data Requirements

### *Branch offices*

Home Sweet Home has several branch offices located throughout the United States. Each branch office is identified by a unique branch number and has an address (street, area, city, zip code), telephone number and fax number. Each branch office has members of staff.

### *Staff*

Each Home Sweet Home branch office has a manager responsible for overseeing the operations of the office. Home Sweet Home closely follows the performance of its managers, and notes the date that they assumed their position at their current branch office. Each manager is allocated an annual car allowance and a monthly bonus payment based upon the branch's performance.

Each Home Sweet Home branch office has members of staff with the job title of Supervisor (sometimes called Senior Administrator). Supervisors are responsible for the day-to-day activities of a dedicated group of staff (minimum of five and a maximum of ten members of staff) responsible for the management of property for rent. The administrative work of each group of staff is supported by a secretary.

Each member of staff is given a staff number, unique across all branch offices. Information held on each member of staff includes the name (first and last name), address (street, city, zip code), telephone number, gender, date of birth, social security number (SSN), job title (position), salary, and the date the member of staff joined Home Sweet Home. Additional information held on staff with the job title of Secretary is the typing speed.

It is company policy to record the details of the next-of-kin of members of staff, including the next-of-kin's full name, relationship to the member of staff, address (street city, zip code), and telephone number. Only the details of a single next-of-kin are held for each member of staff. An example of the Home Sweet Home form used to record the details of a member of staff called John White based at the Chicago branch office is shown in Figure 1.

Home Sweet Home Staff Details			
Staff Number		12	
Personal Details			
First Name	John	Last Name	White
Address	750 Halsted, Chicago IL 60607	Gender	Male
Tel No	312-555-5555	Date of Birth	05/05/1975
SSN	999-999-9999		
Next-of-Kin Details			
Full Name	Mary White	Address	750 Halsted, Chicago IL 60607
Relationship	Wife	Tel No	312-733-1133
General Work Details		Managerial Staff	
Position	Manager	Date Start	07/19/2009
Allocated to Branch Office	Chicago	Salary	55,000
Branch Number	3	Car Allowance	2000
Joined Company	10/24/2008	Bonus Payment	1000
Secretarial Staff		Typing Speed	

*Fig 1. Home Sweet Home Staff Details form.*

### ***Property for rent***

Each Home Sweet Home branch office has properties for rent that are identified by a property number, which is unique across all branch offices. The details of property for rent include the full address (street, area, city, Zip code), type of property, number of rooms, and monthly rent. The monthly rent for a property is reviewed annually. Most of the properties rented out by Home Sweet Home are condos. Each property for rent is assigned to a specific member of staff who is responsible for the management of that property. A member of staff may only manage a maximum of 10 properties for rent, at any one time.

When a property is withdrawn from Home Sweet Home and is no longer available for rent, it is a company policy to retain the information associated with this property a minimum of three years. An example of a Home Sweet Home report listing the details of properties for rent available at the Chicago branch office is shown in Figure 2.

Page	1	<b>Home Sweet Home Property for Rent</b>				Date	05/12/2008
Branch Number	3			Telephone Number	312-345-5656		
Branch Office Address	500 W. Racine Ave. Chicago, IL 60607			Fax Number	312-345-5657		
Property Number	Street	Area	City	Zip code	Type	No of Rooms	Monthly Rent
PG4	10 E. Eighth St.	Downtown Loop	Chicago	60605	Condo	3	2200
PG36	20 E. Ontario St.	Downtown Loop	Chicago	60611	House	5	3500
PG21	800 W. Racine Ave	UIC	Chicago	60607	Condo	3	1200
PG16	4500 Marine Dr.	Irving Park	Chicago	60657	House	3	2200

*Fig. 2 Home Sweet Home report listing properties for rent.*

### ***Property owners***

Home Sweet Home manages property for private or business owners. Each private owner and business owner is uniquely identified by an owner number, which is unique across all branch offices. Additional information on private owners includes the owner's name, address (street, city, and zip code), and telephone number. The details of business owners include the name of the business, the type of business, business address (street, city, and zip code), telephone number, and contact name. An example of the Home Sweet Home form used to record the details of a single property for rent and the owner was shown in Figure 3. One owner may list more than one property for rent; and each property is assumed to be owned by a single owner.

Home Sweet Home Property for Rent Details			
Property Number		21	
Property Details			
Address	800 W. Racine Ave	Allocated to Branch	500 W. Racine Ave. Chicago, IL 60607
Area	UIC	Branch No	3
City	Chicago	Staff Responsible	Ann Beech
Zip Code	60607	Rent	1200
Type	Condo	No of Room	3
Owner Details			
Name	Carol Farrel	Business Name	
Address	550 W. Cornelia Ave.	Address	
Tel No	773-333-5678	Tel No.	
Owner No	87	Owner No.	
		Contact Name	
		Business Type	

*Fig 3. Sales Department forms: Property for Rent Details form.*

### ***Renters***

When a renter first contacts a Home Sweet Home branch office, his or her details are recorded. This includes the renter's name (first and last name), address (street, city, and zip code), telephone number, preferred type of accommodation, and the maximum rent the renter is prepared to pay. As a prospective renter, each renter is given a unique number called the renter number, which is unique across all branch offices. It is Home Sweet Home's company policy to interview all prospective renters wishing to rent property. The information recorded about each interview is the date of the interview, the member of staff who conducted the interview and any general comments about the prospective renter. An example of the Home Sweet Home form used to record the details of a prospective renter called Mike Ritchie was shown in Figure 4.

Home Sweet Home			
Renter Details			
Renter Number		74	
Renter Details			
First Name	Mike	Last Name	Ritchie
Address	1000 Taylor St. Chicago, IL 60607	Tel No	312-444-4444
Property Requirement Details			
Preferred Property Type	Condo	Maximum Monthly Rent	1300
General Comments	Currently living at home with parents. Getting married in August		
Seen By	Ann Beech	Date	03/24/2008
Branch No	3	Branch City	Chicago

*Fig 4. Sales Department forms: Renter Details form.*

### ***Property viewings***

In most cases, a prospective renter will request to view one or more properties before renting. The details of each viewing are recorded and include the date of the viewing and any comments by the prospective renter regarding the suitability or otherwise of the property.

### ***Property advertising***

In the case of properties that prove difficult to rent out, Home Sweet Home will advertise these properties in local and national newspapers. For each advertisement, the company holds the details of the property being advertised, the date and cost of the advertisement. Only appropriate newspapers are used to advertise Home Sweet Home's properties and the details of each newspaper used by the company include the newspaper name, address (street, city, and zip code), telephone number, fax number, and contact name.

### ***Lease agreements***

Home Sweet Home is responsible for drawing up the terms of the lease (rental) agreement between a client and a property. The lease agreement records the lease number, the details of the renter, the details of the property including the monthly rent, the method of payment, the rental deposit, whether the deposit is paid, the date the rent starts and finishes, the duration of the lease, and the member of staff who arranged the lease. The minimum and maximum duration for a single lease period are three months and one year, respectively. The lease number is unique across all branch offices. Home Sweet Home's clients can rent out one or more properties, at any one time.

When a lease agreement expires between a client and a property, it is Home Sweet Home's policy to retain this information for a minimum of three years. An example of the Home Sweet Home form used to record the details of a lease agreement between a renter called Mike Ritchie and a property located in Chicago was shown in Figure 5.

Home Sweet Home Lease Details			
Lease Number		10012	
Renter No	74	Property No	21
Full Name	Mike Ritchie	Address	800 W. Racine Ave
Address (Previous)	1000 Taylor St. Chicago, IL 60607		
Tel No	312-444-4444		
Payment Details			
Monthly Rent	1200	Rent Start Date	07/01/2007
Payment Method	Check	Rent Finish Date	06/30/2008
Deposit	1800	Duration	1 Year
Paid (Y or N)	Y		

*Fig 5. Lease Details Form.*

### ***Property inspections***

As part of the service to property owners, Home Sweet Home is responsible for undertaking regular inspections of property to ensure that the property is being correctly maintained. Each property is inspected at least once over a six-month period. However, Home Sweet Home staff is only required to inspect property that is currently being rented or is available for rent. For each inspection, the company notes the details of the property, the date of the inspection, and any comments regarding the state of the property given by the member of staff undertaking the inspection. An example of a property inspection report is given in Figure 6.

Page	1	Home Sweet Home Property Inspection Report		Date	05/18/2008
Property Number		21	Allocated to Branch	500 W. Racine Ave. Chicago, IL 60607	
Address		800 W. Racine Ave	Branch Number	3	
Property Type		Condo			
No of Rooms		3			
Staff Name		Inspection Date	Comments		
Susan Brand		04/12/2006	No Problems		
Susan Brand		09/30/2007	Cracked ceiling in living room. Required urgent repair.		
Ann Beech		03/01/2008	Kitchen floor needs to be replaced.		

*Fig. 6 Home Sweet Home Property Inspection report.*