Short Tutorial on Data Warehousing by Example

1. Here's your Chance

This Tutorial will help you understand the procedure for starting with source data and end up by designing a Data Warehouse.

You will do it by completing the model answers, which are shown below as Template documents.

Feel free to send us your answers or comments at barryw@databaseanswers.org.

1..1 Event : Coffee in Penang Airport

After we checked out of the Shangri-la, we took a limo to Penang Airport for the first leg of our trip back home to London.
With plenty of time we got a coffee at the Coffee Bean , which was started by Herbert Hyman in California in 1963. It is now an international operation, and very popular in Malaysia.
Looking for a suitable photo, I came across an excellent one on this page :-

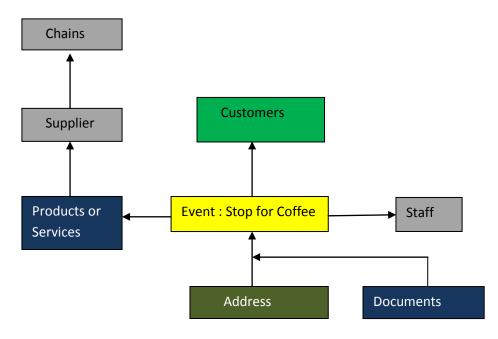* http://www.airliners.net/aviation-forums/trip_reports/reae.main/126525/

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Here is our Sales Receipt **from the Coffee Bean**, which we were glad to see validated our CDM :-

```
         COFFEE BEAN
         & TEA LEAF
    PENANG INTERNATIONAL AIRPORT
       COMPANY NO: 240777-M
    ---------------------------

   1 * SUNRISE (S)           13.90
   1 * CARAMEL MACHIATO CAKE 11.50
   Total                     25.40
   CASH                      50.50
   Change :                  25.10

   EAT IN
          THANK YOU
          PLEASE COME AGAIN
   ALL PRICES INCLUDE 5% GOVT. TAX

   26/03/2012 17:54:40 C523 S3 R72774 MC01
```

1..1.1 The Canonical Data Model (CDM)

This diagram shows the CDM which provides a Design Pattern.
Here we need to think about how it applies to the Event of "Stopping for Coffee".

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1..1.2 Mapping to the CDM

This Table is your starting-point for defining how the Entities correspond to the Entities in your 'Stopping for a Coffee' Event.

Replace the question marks by your answers.

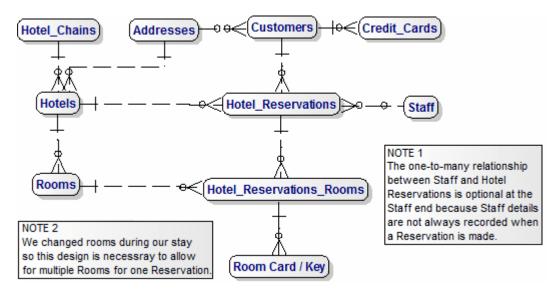| CDM Generic Entities	EVENT : Stop for Coffee Entities	COMMENTS
Customers	???	
Documents	???	
Events	Stop for Coffee	
Locations	???	
Organisations	???	
Organisations	???	
Organisations	Staff in the Hotel	Staff can be involved and represent the Organisation
Products or Services	Room Reservation	
Third Parties	N/A	

1..1.3 Message Format

This shows how the Generic Message Template applies to the Specific Hotel Check-In Event.

Generic	Supplier	Date & Time	Customer Details	Products or Services	Unit Price	From Date	To Date	Total Price
Specific	Shangri-la Hotel	Check-in Date & Time	Barry's Name and Credit Card Details	Room number	Price per Night	From Date	To Date	---

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1..1.4 Data Warehouse for Hotel Check-In

This is the same as Third-Normal Form Data Warehouse as the one shown in Section E.3.1.4.

Hotel_Chains Addresses Customers Credit_Cards

Hotels Hotel_Reservations Staff

NOTE 1
The one-to-many relationship between Staff and Hotel Reservations is optional at the Staff end because Staff details are not always recorded when a Reservation is made.

Rooms Hotel_Reservations_Rooms

NOTE 2
We changed rooms during our stay so this design is necessray to allow for multiple Rooms for one Reservation.

Room Card / Key

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1..1.5 Dimensional Model

This is the Dimensional Model for the Hotel Check-in Event, which you can use as your starting-point.