Experiment 1 ER briefing: Version 080716

From: Ken Evans
MSc Student at Liverpool University

Introduction: Thank you for agreeing to participate in my UML class model experiment. The purpose of this experiment is to compare different methods for constructing UML diagrams from a textual input document.

The data that you provide will be stored in an online database that only I can access. Your personal details are required for reasons of authenticity and for providing you with direct feedback on the results. Your name will not be revealed to a third party. The results in any reports will be anonymous.

The aggregate data will be used for statistical analysis and reporting for my dissertation which will be submitted to Liverpool University not later than 28 August 2008.

After 28 August 2008, the data will be removed from the online database server and stored offline in a secure location in the UK.

Procedure summary: This experiment requires that you convert the airline scope description shown on page 3 into a UML class diagram using your preferred entity-relationship modeling method.

ER Tool: You may use any ER tool.
UML Tool: You may use any UML tool.

The following UML tools are available as free downloads:
* JUDE Community V5.2.3 free from http://jude.change-vision.com/jude-web/product/community.html
* Visio Professional 2007: free download from http://office.microsoft.com/en-gb/visio/default.aspx

First steps: You should begin by taking a few minutes to carefully read the procedure and the scenario. You should then **make two time estimates:**

> 1: How long you think it will take you to complete phase 1 - the ER phase.
> 2: How long you think it will take you to complete phase 2 - the UML class model phase.

After making your estimates you should begin phase 1.

Thank you for your contribution

Ken Evans
ken.evans@ormfoundation.org

Experiment 1 ER briefing: Version 080716

Please use the entity-relationship method to create a "data only" UML class model that contains all of the information in the document on page 3 entitled "Airline Scope Description"

You may use any ER modeling process that you know. However, you must provide a short description of the ER modeling process and any UML tools that you used. (see Experimental Data)

You should use standard UML class notation. Your class model should meet the following criteria:

- Class structure normalized and all classes properly attributed
- Associations to be shown with appropriate multiplicity
- Aggregations to be shown
- Constraints to be shown (you may use text or OCL)

When your class model is complete you should email the **UML Class Model file** to experiment1@ormfoundation.org

ER Model file: You may send your ER model in one of the following formats: JUDE 5.2.3, Visio (vsd), Word 2003 (doc), Word 2007 (docx), pdf, rtf or png. Please name your file Experiment 1_ER_ **xxxx.yyy** where **xxxx** is your last name and yyy is the file type (e.g. .png, .doc etc)

Class Model file: You may send your UML class model in one of the following formats: JUDE 5.2.3, Visio (vsd), Word 2003 (.doc), Word 2007 (docx), pdf, rtf or png.

Please name your file Experiment 1_ER_UML_**xxxx.yyy** where **xxxx** is your last name and yyy is the file type (e.g. .png, .doc etc)

Experimental Data

When you have completed the task, please provide the following data by answering the questions at:
 http://www.ormfoundation.info/fs1/fs-Ex1ER.aspx

First name,   Last Name,   your email address
Is English your first language?   Your country of residence
The number of years experience you have in working with ER
Is your ER skill self-taught or have you attended formal training?
The number of years experience you have in working with UML
Is your UML skill self-taught or have you attended formal training?

Phase 1: **Data to be recorded for preparing the ER model:**
Time: Estimated work time in minutes,   Actual work time in minutes
Procedure description: Please provide a short description of the procedure and mention tools you used.

Phase 2: **Data to be recorded for preparing the UML Class Model:**
Time: Estimated work time in minutes,   Actual work time in minutes
Procedure description: Process description and list of any ER or UML tool(s) you used.

Please do not include the time that it may have taken you to prepare for this experiment.

Airline Scope description

The airline is required to record the following data for all persons who are involved with the airline's activities: name, date of birth, country of nationality, email (optional) and residence address. (For this model, the address can be shown as a single attribute.)

The airline defines an employee as a person who is either ground staff or aircrew.

A customer is a person who is a fare-paying passenger but is neither a travel agent nor an employee. A travel agent may not be a customer or an employee.

Each month, an invoice is sent to each travel agent showing the payment amount, the invoice issue date and the payment due date. Each invoice is identified by a unique number. The travel agent is required to pay the invoice amount within 15 calendar days of the issue date.

If a travel agent's payment is overdue, the travel agent's credit status is changed from "good" to "bad". When an overdue payment is received, the travel agent's credit rating is restored to "good".

A travel agent with a "good" credit rating is given a credit limit of $50,000. A travel agent with a "bad" credit rating has a credit limit of 0.

Aircrew are either cabin crew or pilots.

A pilot must hold a flight license for at least one aircraft type. Cabin crew must hold a valid training certificate for at least one aircraft type.

The airline operates four types of aircraft: A380, B747, A310 and B737.

The airline uses its aircraft to offer flights between airport pairs. For example: between London Heathrow (LHR) and Schiphol (AMS).

Each flight is operated by a flight crew comprising pilots and cabin crew. To be qualified to fly as a member of a flight crew, each pilot must have a valid flight license for the type of aircraft to be used for the flight and each cabin crew member must have a valid training certificate for the type of aircraft to be used for the flight.