INTRODB

Field Work: Analyzing Database Systems Release Date: June 16, 2014

Learning Outcome

The Field Work on *Analyzing Database Systems* is a venue for students to achieve the learning outcomes below:

LO1. Understand the importance of database systems in our society;

LO2. Analyze the data and information that can be derived from a given database to support organizational decision-making activities.

Students will investigate the uses of database systems in our society, and how databases play an important role for managing the information needs of their stakeholders. Forming teams with 3 members, the students will gather and analyze the data requirements of these systems. Through this, they will determine the data and information needs of the organizations managing these systems, make preliminary design of a database structure to represent the data, and describe how data is captured, stored and manipulated or processed to generate relevant and appropriate information that are utilized to support the daily activities, operations, and purpose of the various users in the organization. The field work report will then be used as the draft software requirements specification for MCO2 on Developing a Small-Scale Database System.

Instructions

Students are to form teams with **3 members**. Each team will be assigned an **online** information system (IS) that is being used by schools, retail stores, offices, or any organizations or companies, such as:

A. Retail applications, such as online ordering system (McDonald's, Jollibee, SureSeats), and group buying applications (SMACDeals, Cash Cash Pinoy, and Metro Deal)

B. Loyalty earning, viewing and redemption applications, such as Starbucks Card, SM Advantage Card, and Jollibee Happy Plus

C. Travel applications, such as airline and hotel reservations in Agoda

D. Educational services, such as enrollment and library systems

Analyze the system, using any or all of the following methodologies:

- *Library or Internet research*. Read and understand about the various components and data requirements of a Database System through books, student thesis projects, or from the Internet.
- *Interview, observe, use*. Interview / survey users of the database systems. Observe how the database systems fit into the everyday processes and operations of the organizations You can also use the database system yourself to better understand and evaluate its features and data requirements.

Focus on identifying the following – what data are captured and stored, how are the data captured (e.g., any devices or forms), and the types of information (or reports) generated by the system. It is also important to understand the relevance and usefulness of the system to the specific user and/or organization.

Deliverables

The Field Work has two components – a type-written report and a class presentation.

A. Prepare a type-written report, **minimum of three pages** (excluding the title page), single-spaced, short-bond paper, containing the following:

1. Introduction

In paragraph form, provide an overview of the database system that you reviewed as well as its rational/purpose. This section should end with a scenario for the reader to understand where and how the system you have investigated is being used and the problems it is trying to address.

The following serves as your checklist for the items that should be present here:

- What is your assigned database system? Include the URL.
- What is the database system for? What are its intended usage or purpose?
- Who are the different users of the system? What tasks will they perform on the system?
- What problem is it trying to address and how does it address the problem?

2. Data Requirements of the < *XYZ System*>

In this chapter, provide a brief overview of the features of the database system, a detailed discussion of its data requirements, your envisioned design of its database, and your envisioned information that can be retrieved from the database.

2.1 Software Features

In paragraph form, provide a brief overview of the features of the software, such as *create an account*, *update details* (work experience, educational background), *add a new friend*, *make/receive recommendations*, among others. Relevant screenshots can be provided to support your discussion. Captions must be provided for these screen shots.

The following is an example content:

> The Online Calendar has two main components, the *User Account Management*, and the *Calendar Entry Management*.
>
> The *User Account Management* provides facilities for creating new user accounts (Figure 1), updating user profiles (Figure 2), and tracking user login and logout activities (Figure 3). <You can further explain briefly each of these three features and provide screen shots to support your discussions.>
>
> The *Calendar Entry Management* provides facilities for creating a new calendar type (Figure 4), creating a new calendar event (Figure 5), modifying an existing calendar event (Figure 6), or deleting a calendar event. Users can also specify the view mode, e.g., day view (Figure 7), week view (Figure 8), and month view (Figure 9). <You can further explain briefly each of these three features and provide screen shots to support your discussions.>

2.2 Database Design (Minimum of 4 tables)

Based on your analysis of the features and user interface of the software, present a possible database design in tabular form. Populate the database with at least five (5) sample records. For example:

> *User Accounts*
>
> The *User Account*s table (shown in Table 1) is used to store the data of each registered user in the Online Calendar application. It has the following fields:
>
> - username - <describe this field>
> - email address - <describe this field>
> - password - <describe this field and any data type constraints, e.g., mininum of 6 characters>
> - dateregistered - <describe this field>
> - lastlogin - <describe this field>

Table 1. User Account table.

Username	EmailAddress	Password	DateRegistered	LastLogin
juandelacruz	jdlc@yahoo.com	********	2013-05-12	2013-09-22
johnsmith01	john.smith@gmail.com	********	2010-07-18	2013-09-20
polly-yanna	polly-yanna@gmail.com	**********	2011-11-22	2012-10-09
cobbrian	brian.cob@dlsu.ph	********	2012-01-29	2013-09-22
mayreyes	marilyn.reyes@smart.com	**********	2012-10-07	2013-09-21

2.3 Reports (Minimum of 3 reports copied online and 3 reports you designed yourself. Each report must contain summary data.)

Discuss the data and information that can be retrieved from the database design you presented in 2.2. These reports should include those that are currently available online, and those that you believe can be generated based on your understanding of the database. For each report, provide (a) a brief discussion of its purpose and users; (b) sample screenshot if available online; (c) your envisioned report format; and (d) SQL statement to retrieve the contents of the report based on your own database design in 2.2.

The following is an example content.

> The Online Calendar system generates various reports …
>
> *List of User Accounts*
>
> This report is used to generate the list of all user accounts in the system. It is used by the system administrator to track user registration activities. The list is arranged chronologically based on the date of registration of the user, as shown in Figure 10.
>
> MyCalendar
> List of Registered Users as of October 30, 2013
>
> | Date of Registration | Username | Email Address | Last Login |
> |---|---|---|---|
> | 2013 May 12 | juandelacruz | jdlc@yahoo.com | 2013 Sep 22 |
> | 2012 Oct 07 | mayreyes | marilyn.reyes@smart.com | 2013 Sep 21 |
> | 2012 Jan 29 | cobbrian | brian.cob@dlsu.ph | 2013 Sep 22 |
> | 2011 Nov 22 | polly-yanna | polly-yanna@gmail.com | 2012 Oct 09 |
> | 2010 Jul 18 | johnsmith01 | john.smith@gmail.com | 2013 Sep 20 |
>
> Total: 5 registered users
> 4 active user(s)
> 1 inactive user(s)
>
> Figure 10. List of Registered Users Report
>
> Different variants of the list of user accounts can be generated, such as the list of user registrations for a given year or month, and the list of active user accounts (those accounts that have accessed the system within the last 30 days). Samples of these are shown in Figure n.
>
> <Provide what the sample report would look like here.>

Your sample reports should include report headings (e.g., company name, report title, date generated) and summary data (e.g., totals, counts, sums, averages).

There are various types of reports that can be generated, such as a listing of the database contents, as well as summary reports for decision-making. It is part of your grade to conduct your own research on the types of reports that a database system can produce to support organizational needs.

3. References and Acknowledgement

This section allows you to properly cite all materials that you used, be these in the form of books or online resources. You must also acknowledge any person(s) and/or organization(s) you have interviewed or gathered the information from.

Note:

- Always review the lecture slides and the main textbook/reference, to guide you in doing this Field Work.
- Remember that whatever you have learned from this activity will serve as resources for your INTRODB software project, so be extensive in doing your Field Work.

- Pages of the document must be numbered.
- Submit a printed copy of your Field Work report on **July 7 (Mon)** during the first 10 minutes of the class.
- Prepare a 10-minute Powerpoint presentation (maximum of 15 slides) highlighting your findings (a summary of your Chapter 2 report). Focus on the data requirements and reports.
- Email the following files to your teacher with the subject heading **INTRODB Field Work** on or before **9:00am of July 7 (Mon)**
  - Field Work report with filename **INTRODB_<section>_<lastnames of members>.doc**
  - Database script file with the filename: **INTRODB_<section>_<lastnames of members>.sql**
  - Presentation file with **INTRODB_<section>_<lastnames of members>.ppt**
- Late submissions will receive 10 points deduction per day and 0 points for the presentation. No late submissions will be accepted after July 10.

Format of the Title Page

<Title of your IS>

A Field Report
for the course on
Introduction to Databases
(INTRODB)

Submitted by

<lastname, firstname> of all group members, in alphabetical order

<Teacher's Name>
Teacher

July <date>, 2014

Criteria for Grading

You will be graded based on the following criteria:

Correctness of the DB Design, Reports and SQL	35%
Clarity and Completeness of discussion	20%
Classroom presentation	30%
Overall document format and presentation file	15%