

## Apply Your Knowledge

This section contains four mini-cases. Each case describes a situation, explains your role, and requires you to apply what you learned in the chapter.

### Able Communications

Able Communications is a leading cable service provider in a metropolitan area. The new customer billing system has caused an increase in complaints. Zoe Valine, the office manager, asked you to investigate the situation. After interviewing data entry operators and observing the online data input process, you are fairly certain that most errors occur when data is entered.

#### Tasks

1. Write a brief memo to Zoe explaining the importance of data validation during the input process.
2. Suggest at least three specific data validation checks that might help reduce input errors.
3. Would a batch input system offer any advantages? Write a brief memo to Zoe stating your views.
4. Suppose that Able Communications is predicting 25% annual growth, on a current base of 90,000 customers. If the growth pattern holds, how many customers will Able have in three years? If it takes about 12 minutes to enter a new customer into the system, how many additional data entry operators will be needed to handle the growth next year? Assume that an operator works about 2,000 hours per year. Also assume a 30% annual attrition rate for existing customers.

### 2 Global Earth Mortgages

Global Earth Mortgages is a mortgage lender that makes home loans and resells the loans to investors. To resell loans, strict legal guidelines must be followed. Global Earth want to develop a Web-based loan application system based on these guidelines. Because legal compliance is critical to Global Earth's business, you decided to create a prototype that users can test before the final design is implemented. You will be meeting new week with Joanie James, Global Earth's president, and you need to prepare for the meeting.

#### Tasks

1. What is a prototype and why is it an important tool for system designers?
2. Explain two different ways that Global Earth might use prototypes.
3. What are some of the advantages and disadvantages of prototyping?
4. In addition to the wind tunnel shown in Figure 8-25 on page 332, think of at least three other products that would be good candidates for prototyping.

### 3 Mountain High RV Sales

Mountain High RV Sales offers new and used recreational vehicles and campers. The company has a dealer network, but also maintains a Web site where prospective buyers and sellers can browse through the inventory of new and used vehicles. Mountain High has grown, and needs a new information system to manage the inventory, dealer operations, and information about prospective customers. Reed Perry, the owner, asked you to design sample computer screens and reports that the new system might produce.

#### Tasks

1. Design a switchboard that includes the main information management functions that Mountain High might need. Create a storyboard with a design layout that allows customers to perform the following functions: Obtain information about new RVs and campers, obtain information about used vehicles, send an inquiry e-mail to Mountain High, learn more about the company, or review links to other RV camping-related sites.
2. Prospective buyers might want to search for RVs and campers by features, size, price range, or manufacturer. Develop a screen design that would permit those choices.
3. Suggest reports that might be useful to Mountain High's management.
4. Suggest the general layout for a Web-based source document that prospective sellers could use to describe their RVs and campers. The information should include key features, manufacturer, year, length, asking price, and a field to upload photos.

### 4 Terrier News

*Terrier News* is a monthly newsletter devoted to various breeds of terriers and topics of interest to terrier owners and breeders. Annie West, the editor and publisher, asked you to help her design a system to enter and manage the hundreds of classified ads that *Terrier News* publishes. Some ads are for dogs wanted; some are for dogs for sale; and some offer products and services.

#### Tasks

1. Design a suitable source document for ads that are telephoned or mailed in.
2. Explain user-centered design principles in a brief memo to Annie.
3. Suggest at least four user interface design guidelines for the new system.
4. Suggest several types of controls that might be used on a switchboard you plan to design. Explain why you chose each control, and create a storyboard that shows the switchboard layout.

## Case Studies

Each chapter includes a Chapter Case, a Continuing Case, a Capstone Case, and an Online Case Simulation. You can learn more about the Online Case Simulation in the MIS CourseMate Features section.

### Chapter Case: Tools 4 U

Tools 4 U is a tool rental company that reaches out to people with little or no experience. The firm has a staff of technicians to help customers select the right tools, show them how to use the tools, and provide 24/7 support.

#### Background

The company is working on an online system to manage its growing business. The company asked you to help design the user interface.

#### Tasks

1. Design a data entry screen for entering new members.
2. Design an online tool rental screen. You can use your imagination, but be sure to apply the principles discussed in this chapter.
3. Suggest at least three data validation rules that might help reduce input errors for the system.
4. Design a screen for managers, with weekly and monthly data on rentals, new customers, late charges, and anything else you think a store manager might want to review. Be sure to include numeric activity and dollar totals.

### Continuing Case: Personal Trainer, Inc.

Personal Trainer, Inc. owns and operates fitness centers in a dozen Midwestern cities. The centers have done well, and the company is planning an international expansion by opening a new “supercenter” in the Toronto area. Personal Trainer’s president, Cassia Umi, hired an IT consultant, Susan Park, to help develop an information system for the new facility. During the project, Susan will work closely with Gray Lewis, who will manage the new operation.

#### Background

Following the decision to use an in-house team to develop a design prototype, Susan began to work on the physical design for Personal Trainer’s new information system. At this stage, she is ready to begin working with Gray on the output and user interface design. Together, Susan and Gray will seek to develop a user-centered design that is easy to learn and use. Personal Trainer users will include managers, fitness instructors, support staff, and members themselves.

#### Tasks

1. For the prototype user interface, design a switchboard that leads from main sections to sub-sections of related system tasks. The main sections may include member information, registration, payments, fitness instructors, and any other top-level sections necessary for Personal Trainer’s system. Subsections may include account information, class registration, schedules, and class rosters. Prepare storyboards that show the proposed screens, including at least two sublevel tasks for each action.

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**Continuing Case: Personal Trainer, Inc.**

2. Members need to be able to register for classes online. Follow the guidelines and suggestions in this chapter, and design an online class registration screen form.
3. In addition to being available online, members can register for fitness classes through the mail or by dropping off a mail-in form. Follow the guidelines and suggestions in this chapter, and design a paper source document.
4. Personal Trainer is very concerned about the security and protection of the information they collect in the new information system. Prepare a memo to Gray and Personal Trainer's staff that explains the input and output security controls that will be built into the new systems and the policies that will enforce these controls.

**Capstone Case: New Century Wellness Group**

New Century Wellness Group offers a holistic approach to healthcare with an emphasis on preventive medicine as well as traditional medical care. In your role as an IT consultant, you will help New Century develop a new information system.

**Background**

Based on your presentation to New Century's partners, they decided to move forward with in-house development of a new business support system.

They liked the idea of a vertical software package, but they want to be able to customize the user interface because New Century's business functions are more varied. However, it is very important that the new system allow future integration with vertical packages such as electronic health records, computerized provider order entry, and a clinical decision support system.

Using the information you gained in the systems planning and analysis phases of the SDLC, you sit down to begin designing the user interface of the New Century's business support system. Before you begin, you decide to review the case studies, DFDs, and object-oriented diagrams you prepared in Chapters 5 and 6.

**Tasks**

1. Using the guidelines and suggestions in this chapter, design a user interface. Draw storyboards, then use Microsoft Access or another form-designing application to create the screens.
2. Determine the data required for a new patient. Design an input source document that will be used to capture the patient's data and a data entry screen to enter the information into the system.
3. What control features will you use in the input screens to aid in data entry? Give a specific example of how you will use at least eight different control features in the design of the user interface.
4. In addition to printed reports, what other output technologies could be used by New Century?

## CASE Tool Workshop

Systems analysts use CASE tools to help them plan, build, and maintain information systems. To learn more about CASE tools, turn to Part B of the Toolkit that follows Chapter 12. You can complete these tasks with the Visible Analyst® CASE tool, which is available with this textbook, or a similar tool.

### Background

Suppose you work for an IT consulting firm that specializes in user interface design. One of the firm's clients is a CASE tool vendor. Before releasing the next version of its tool, the vendor wants your firm to analyze the user interface and offer suggestions about improving it if possible.

### Tasks

1. Study the user interface in Visible Analyst or another CASE tool, consider the guidelines described in this chapter, and prepare a detailed recommendation for interface design changes, if any. Be sure to explain your reasons, and the results you hope to achieve.
2. Assume that the client agreed to all your recommendations, but the improved version will not be available for six months. In the interim, the client wants you to write step-by-step guidelines to help users navigate the existing interface. Select a user interface feature that definitely needs improvement, and write a brief set of tips and user-friendly suggestions.