




CPSC203: WEEK-2 LAB-2

User Interface Design

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COURSE WEBSITE

[http://wiki.ucalgary.ca/page/
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PRINCIPLES FOR USER INTERFACE DESIGN

Principle	Description
Layout	The interface should be a series of areas on the screen that are used consistently for different purposes—for example, a top area for commands and navigation, a middle area for information to be input or output, and a bottom area for status information.
Content Awareness	Users should always be aware of where they are in the system and what information is being displayed.
Aesthetics	Interfaces should be functional and inviting to users through careful use of white space, colors, and fonts. There is often a trade-off between including enough white space to make the interface look pleasing without losing so much space that important information does not fit on the screen.
User Experience	Although ease of use and ease of learning often lead to similar design decisions, there is sometimes a trade-off between the two. Novice users or infrequent users of software will prefer ease of learning, whereas frequent users will prefer ease of use.
Consistency	Consistency in interface design enables users to predict what will happen before they perform a function. It is one of the most important elements in ease of learning, ease of use, and aesthetics.
Minimal User Effort	The interface should be simple to use. Most designers plan on having no more than three mouse clicks from the starting menu until users perform work.

PRINCIPLES FOR USER INTERFACE DESIGN

- **The simplicity principle:** The design should make simple, common tasks easy, communicating clearly and simply in the user's own language, and providing good shortcuts that are meaningfully related to longer procedures.
- **The visibility principle:** The design should make all needed options and materials for a given task visible without distracting the user with extraneous or redundant information. Good designs don't overwhelm users with alternatives or confuse with unneeded information

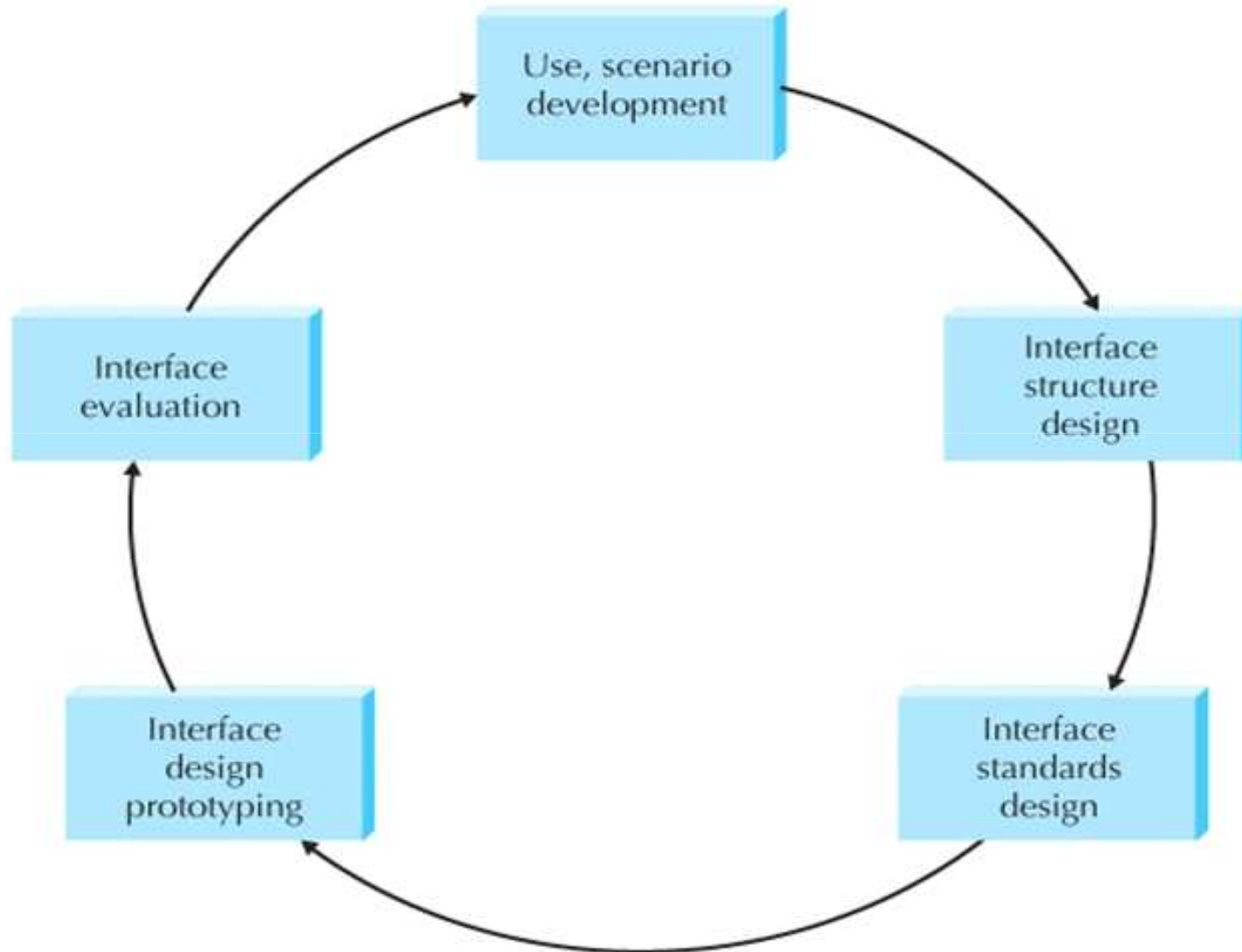


PRINCIPLES FOR USER INTERFACE DESIGN

- **The feedback principle:** The design should keep users informed of actions or interpretations, changes of state or condition, and errors or exceptions that are relevant and of interest to the user through clear, concise, and unambiguous language familiar to users.
- **The reuse principle:** The design should reuse internal and external components and behaviors, maintaining consistency with purpose rather than merely arbitrary consistency, thus reducing the need for users to rethink and remember.



USER INTERFACE DESIGN PROCESS



CASE STUDY

- Consider an appointment system in a clinic, where a patient can request to make an appointment to see a certain doctor at a specific time. Additionally, a doctor can use that system to record the timings where he would be available to see his patients. A receptionist can print schedule information for a specific day at that clinic. In one use scenario, a patient will make a request with the receptionist regarding an appointment with the dentist. The receptionist will look up the patient and check to see if the patient has any bills to be paid. The receptionist then will ask the patient whether he or she wants to set up a new appointment, cancel an existing appointment, or to change an existing appointment.

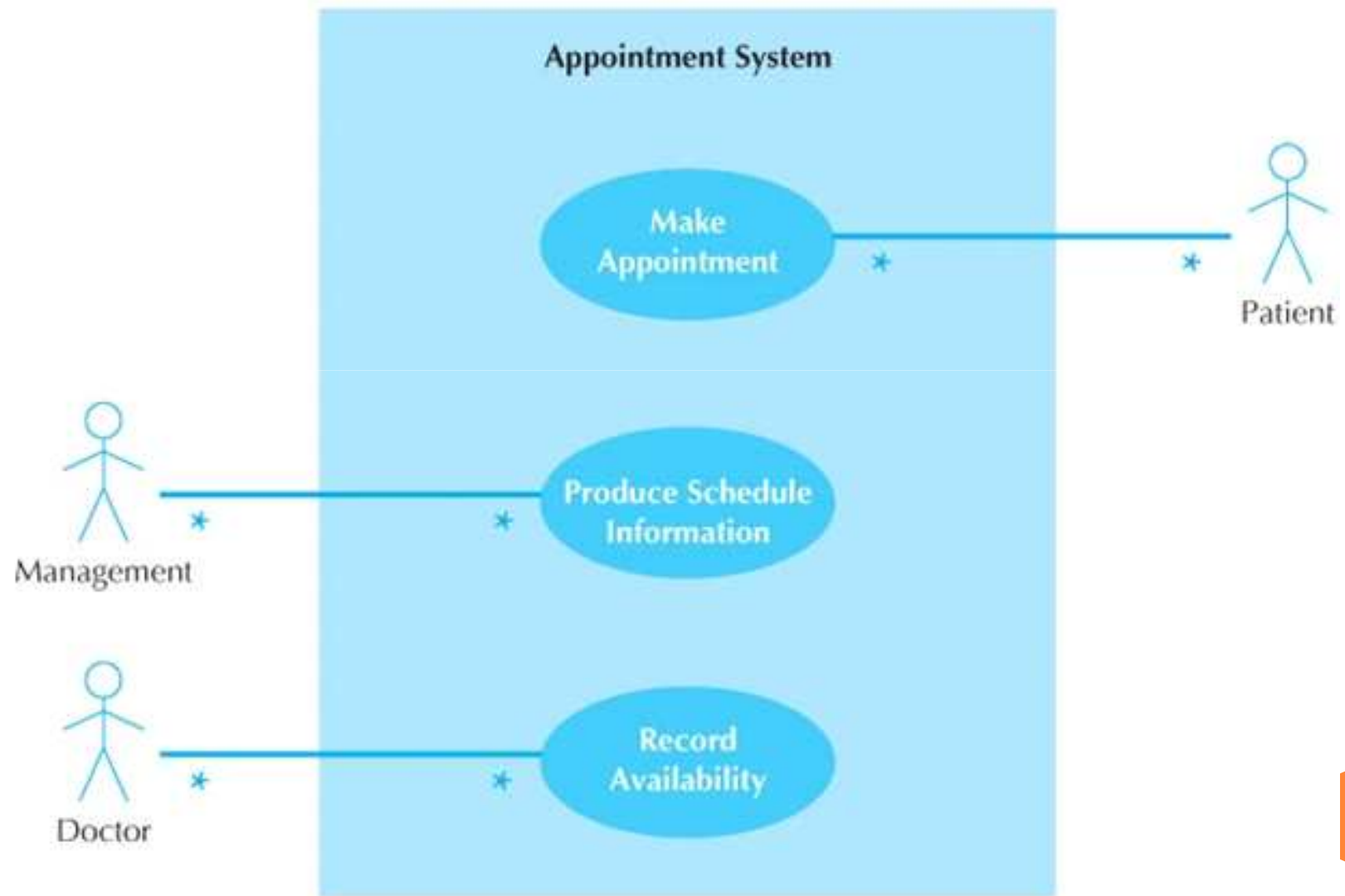
CASE STUDY

If the patient wants to create an new appointment, the receptionist asks the patient for some suggested appointment times, which the receptionist matches against potential times available. The receptionist finally creates a new appointment. In another use scenario, a patient simply wants to cancel an appointment. In this case, the receptionist looks up the patient and checks to see if the patient has any bills to be paid. The receptionist then asks the patient for the time of the appointment to be canceled. Finally, the receptionist deletes the appointment.



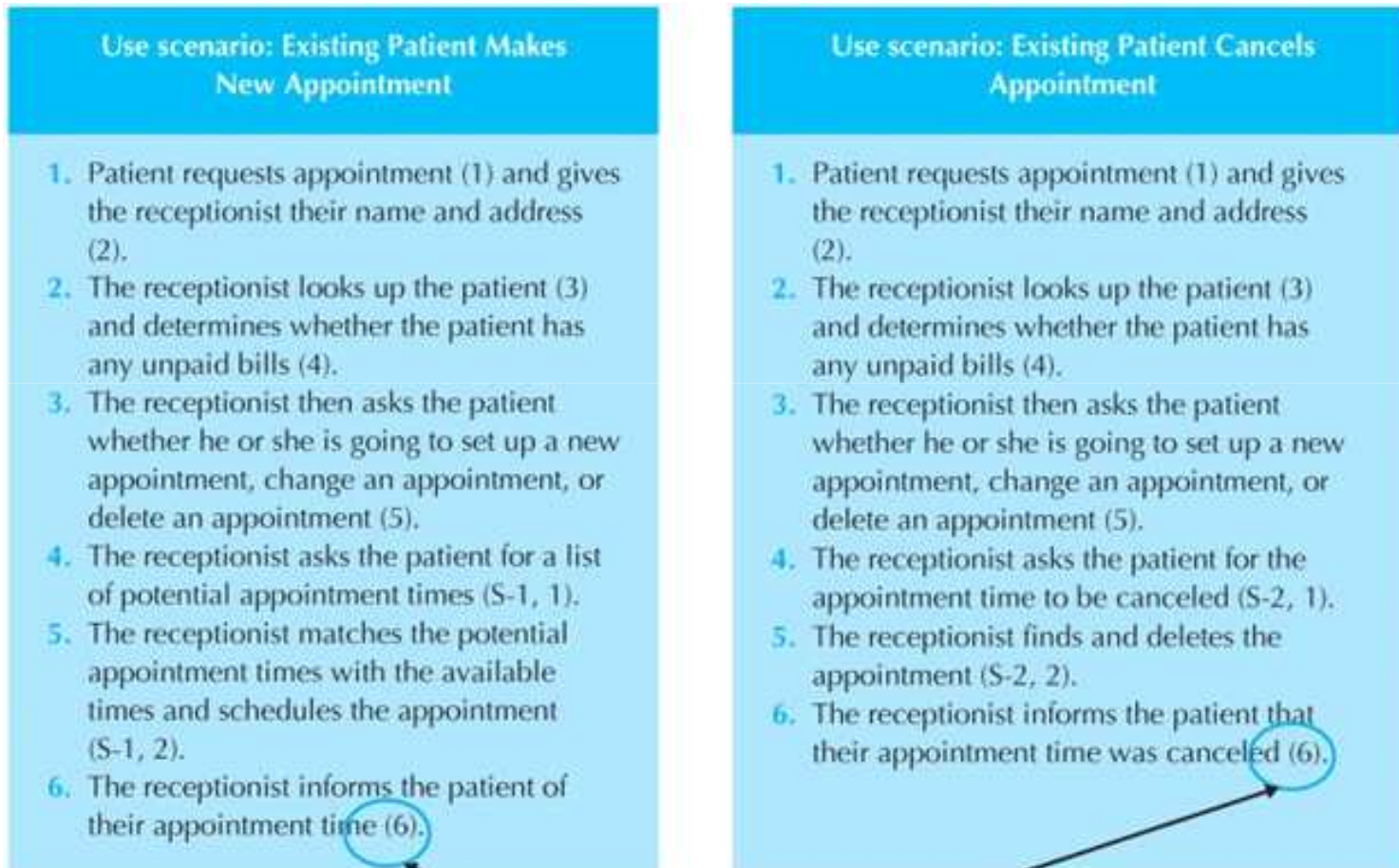
CASE STUDY

- **Step 1:** Create a use case diagram



CASE STUDY

- **Step 2:** Develop a number of scenarios for the use case
Make appointment using the system description



The numbers in parentheses refer to specific events in the essential use case.

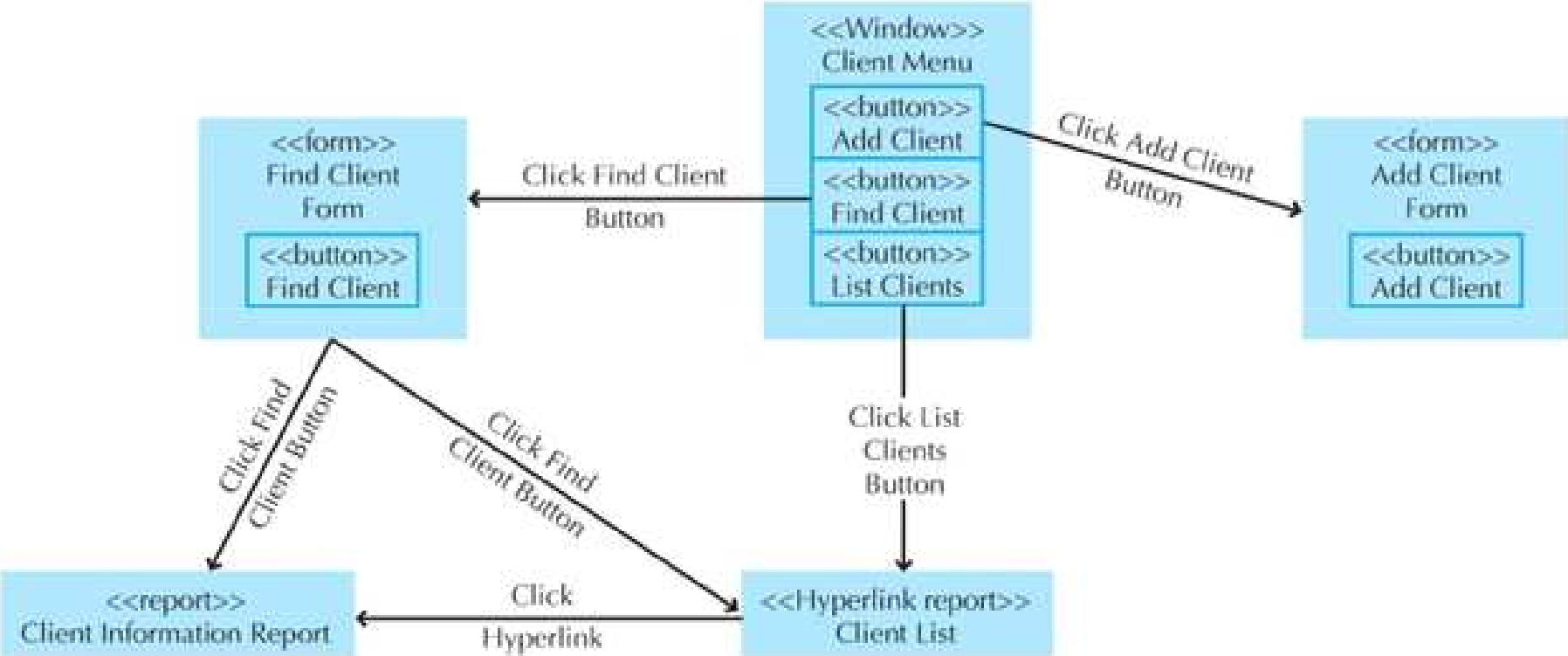
CASE STUDY

○ **Step 3: Interface Structure Design**

- The interface structure defines the basic components of the interface and how they work together to provide functionality to users.
- A WND (Window Navigation Diagram) is used to show how all the screens, forms, and reports used by the system are related and how the user moves from one to another.
- In a WND, each state in which the user interface may be is represented as a box. Furthermore, a box typically corresponds to a user interface component, such as a window, form, button, or report.



CASE STUDY



CASE STUDY

- The above Figure shows a sample WND for the appointment system.
- From that figure, we find that we need to build the following GUI components:
 - **A client menu**
 - **“Add Client” form:** Used to add a new client/patient to the system
 - **“Find Client” form:** Used to find an existing client/patient in the system
 - **“Client List” report:** Used to issue a report of the existing clients in the system
 - **“Client Information” report:** Used to issue a report including information about a specific client

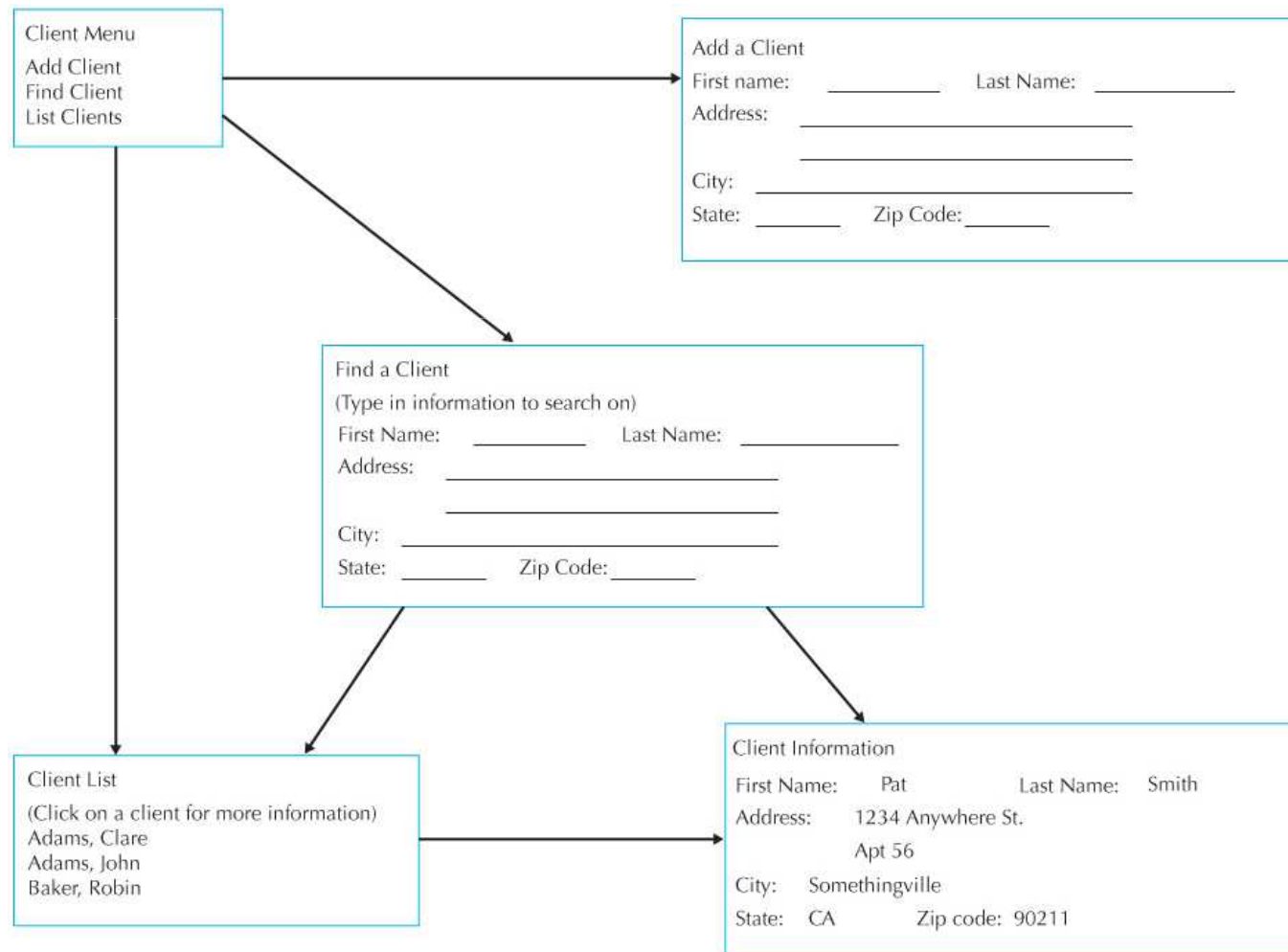
CASE STUDY

- **Step 4:** Sketch the user interface components that you identified from step 3:
 - **“Add Client” form:** Think of what fields would be needed for every client
 - ✓ Example: First name, Last name, Phone number, Email address, Home address, Medical record, ...etc
 - **“Find Client” form:** Think of what fields would be needed to search for a specific client
 - ✓ Example: Search by name, Search by phone number, ...etc
 - **“Clients List” report:** Think of what fields need to be included in that report
 - ✓ Example: Clients’ names, phone numbers, no need for the medical records here
 - **“Client information”:** Think of what fields need to be included in that report



CASE STUDY

- **Step 5:** Sketch an interface design prototype - a mock-up or a simulation of a computer screen, form or report:
(Sample storyboard prototype)



CASE STUDY (INTERFACE DESIGN PROTOTYPE)

There are other types of prototypes:

- Windows Layout Diagram
- HTML Prototype
- Language Prototype



EXERCISE CASE STUDY

- Consider the following online University Registration system:

The system should enable the staff of each academic department to examine the courses offered by their department, add and remove courses, and change the information about them (e.g., the maximum number of students permitted). It should permit students to examine currently available courses, add and drop courses to and from their schedules, and examine the courses for which they are enrolled. The system should ensure that no student takes too many courses and that students who have any unpaid fees are not permitted to register (assume that a fees data store is maintained by the university's financial office, which the registration system accesses but does not change).

EXERCISE CASE STUDY

- Draw a use-case diagram based on the stated storyline.
- Develop two use scenarios.
- Develop the interface standards (omitting the interface template).
- Draw a WND.
- Design a storyboard.

