Task descriptions

- Business Scenarios
  - commonly used as the basis for acceptance testing
- Task descriptions are used throughout development, from early requirements activities through prototyping, evaluation, and testing due to the emphasis on involving users earlier in the development lifecycle
- Different flavors of task descriptions
  - —Scenarios
  - —Use cases
  - —Essential use cases
  - —may be used to describe either existing tasks or envisioned tasks with a new device.
  - —not mutually exclusive

1 数字媒体与网络技术

Task descriptions

- Scenarios
  - — an informal narrative story, simple, 'natural' : describes human activities or tasks in a story that allows exploration and discussion of contexts, needs, and requirements
  - — the constructions of scenarios by stakeholders is often the first step in establishing requirements
  - — Understanding why people doings as they do and what they are trying to achieve in the process allows us to concentrate on the human activity rather than interaction with technique
  - — personal, not generalisable: the LOD present varies, and there is no particular guidance about how much or how little should be included. (workshop or interview sessions)

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Task descriptions

- Scenarios
  - — this is not to say that the human activity should be preserved and reflected in any new device we are trying to develop, but understanding what people do now is a good starting point for exploring the constraints, contexts, irritations, facilitators and so on under which the humans operate.
  - — It also allows us to identify the stakeholders and the products involved in the activity.
  - — Repeated reference to a particular form, book, behavior, or location indicates that this is somehow central to the activity being performed and that we should take care to understand what it is and the role it plays.

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Scenario for library catalog service

"Say I want to find a book by George Jeffries. I don't remember the title but I know it was published before 1995. I go to the catalog and enter my user password. I don't understand why I have to do this, since I can't get into the library to use the catalog without passing through security gates. However, Once my password has been confirmed, I am given a choice of searching by author or by date, but not the combination of author and date. I tend to choose the author option because the date search usually identifies too many entries. After about 30 seconds the catalog returns saying that there are no entries for George Jeffries and showing me the list of entries closest to the one I've sought. When I see the list, I realize that in fact I got the author's first name wrong and it's Gregory, not George. I choose the entry I want and the system displays the locations to tell me where to find the book."

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Task descriptions

- Use cases
  - — assume interaction with a system
    - also focus on user goals, but the emphasis here is on a user-system interaction rather than the user's task itself.
  - —The stress is still very much on the user's perspective, not the system's.
- A use case is associated with an actor, and it is the actor's goal in using the system that the use case wants to capture.

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Task descriptions

- The main use case describes what is called the "normal course" through the use case, i.e., the set of actions that the analyst believes to be most commonly performed.
- Other possible sequences, called alternative courses, are then listed at the bottom of the use case.

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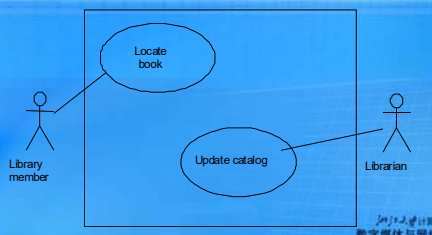
Use case diagram for library catalog service

One use case is "Locate book", and this would be associated with the "library member" actor. The other main actor is the "Librarian." A use case for the "librarian" would be "update catalog."



Use case for Locate Book

1. The system prompts for user name and password.
2. The user enters his or her user name and password into the catalog system.
3. The system verifies the user's password.
4. The system displays a menu of choices.
5. The user chooses the search option.
6. The system displays the search menu.
7. The user chooses to search by author.
8. The system displays the search author screen.
9. The user enters the author's name.
10. The system displays search results.
11. The user chooses the required book.
12. The system displays details of chosen book.
13. The user notes location.
14. The user quits catalog system.

Alternative courses for Locate Book

Some alternative courses:

4. If user password is invalid,
   - 4.1 The system displays an error message.
   - 4.2 The system returns to step 1.
5. If the user knows the book details,
   - 5.1 The user chooses to enter book details.
   - 5.2 The system displays book details screen.
   - 5.3 The user enters book details.
   - 5.4 The system goes to step 12.

Task descriptions

- Scenarios: concentrate on realistic and specific activities. Can obscure broader issues concerned with the wider organizational view.
- Use cases contain certain assumptions, including the fact that there is a piece of technology to interact with, and also assumptions about the user interface and the kind of interaction to be designed.
- Essential use cases
  - —abstract away from the details
  - —does not have the same assumptions as use cases
  - —Division between user and system responsibilities, very helpful during conceptual design

Example essential use case for library catalog service

LocateBook

USER INTENTION	SYSTEM RESPONSIBILITY
identify self	
	verify identity
	request appropriate details
Offer known details	
	offer search results
Note search results	
Quit system	
	close

Task analysis

- Task descriptions are often used to envision new systems or devices
- Task analysis is used mainly to investigate an existing situation
- It is important not to focus on superficial activities, but to analyze the underlying rational and purpose of what people are doing:
  - What are people trying to achieve?
  - Why are they trying to achieve it?
  - How are they going about it?

Task analysis

- Task analysis is an umbrella term that covers techniques for investigating cognitive processes and physical actions, at a high level of abstraction and in minute detail.
- Many techniques, the most popular is Hierarchical Task Analysis (HTA)
- Another well-known task analysis technique called GOMS (goals, operations, methods, and selection rules) models procedural knowledge.

Hierarchical Task Analysis

- Involves breaking a task down into subtasks, then sub-sub-tasks and so on. These are grouped as plans which specify how the tasks might be performed in practice
- HTA focuses on physical and observable actions, and includes looking at actions not related to software or an interaction device
- Start with a user goal which is examined and the main tasks for achieving it are identified
- Where appropriate, tasks are sub-divided into sub-tasks

Example Hierarchical Task Analysis

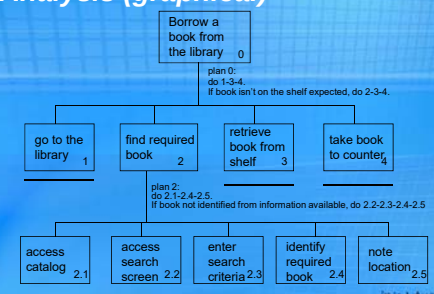
0. In order to borrow a book from the library
   1. go to the library
   2. find the required book
      - 2.1 access library catalogue
      - 2.2 access the search screen
      - 2.3 enter search criteria
      - 2.4 identify required book
      - 2.5 note location
   3. go to correct shelf and retrieve book
   4. take book to checkout counter

Example Hierarchical Task Analysis (plans)

plan 0: do 1-3-4. If book isn't on the shelf expected, do 2-3-4.

plan 2: do 2.1-2.4-2.5. If book not identified do 2.2-2.3-2.4-2.5.

Example Hierarchical Task Analysis (graphical)



Class Activity

Write a scenario of how you would currently go about choosing a brand new car.

Summary

- Getting requirements right is crucial
- There are different kinds of requirement, each is significant for interaction design
- The most commonly-used techniques for data gathering are: questionnaires, interviews, focus groups and workshops, naturalistic observation, studying documentation
- Scenarios, use cases and essential use cases can be used to articulate existing and envisioned work practices.
- Task analysis techniques such as HTA help to investigate existing systems and practices

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