Task Centered Design: Background

The Situation

- A small library has contracted you to build a computer system that will let librarians and their assistants deal with routine requests by the library clients. The computer(s) will be situated on the check-in / checkout counter.

Introduction: Background To The System

- This is a small library that serves a town of about 10,000 people.

- Approximately 500 people use the library each day and its holdings include books, CDs and cassette tapes.

- The library already has a computer system that collects in a database all its holdings and a unique bar code number. All holdings already have a bar code label on them.

- The library also has a computer system that allows its clients to peruse its holdings with computers that are set up on booths in the middle of the library. This system is satisfactory, and will not have to be replaced.

- However, the computer system used by librarians and their assistants is badly out of date and awkward to use. *This is the one that will be replaced in this project*.

Users: Background

- The users of the system are experienced staff: the librarians and library assistants (*library clients will not be allowed to use the system*).

- Library staff are all experienced at all routine library operations.

- The library expects all its staff to be trained on system use, either formally (through a course if necessary), or by apprenticeship (where staff will learn on the job from other proficient staff members).

- Library staff are currently all experienced with PCs and the usual suite of applications that run on Windows.

Introduction: Work Contexts

- Librarians do many chores, such as re-shelving books, tidying up the library, helping clients find books, sorting new holdings, and so on.

- One of their chores is to work the counter, which is the emphasis of this project.

- The library varies greatly in the number of patrons that visit it:

  - During quiet periods:
    Staff do routine chores, and only go to the counter when a client approaches it.

  - During busy periods:
    One staff member is always at the counter, and calls other staff to the counter when the line-up starts growing.
    Lineups routinely grow to about 3-5 people, with longer lineups being rare.
    Customers rarely have to wait more than 5 minutes before being served.

Introduction: Uses Of The Envisioned System

- The system will handle routine counter work, which now includes:
    - Helping staff answer customer requests (either face-to-face or by the phone).
    - Telling clients their status i.e., what books they have out, what fines are pending, and so on.
    - Checking library holdings in and out.
    - Checking for late fines and informing clients.
    - Collecting fines.
    - Providing new library cards.
    - Checking for expired cards.
    - Renewing library cards.
    - Phoning people who have overdue books.

Introduction: System Constraints

- The library already has a well maintained computer system that contains all the holdings in a reasonably fast database. The library does not expect to change this system, and requires that the new system links into it.

- The library also have several ancient Pentium-powered PCs running Windows '98 which are already located on the counter. They expect that your system will be built on that platform

- There is a very modest budget ($2000) for additional equipment, if needed.

What You Have To Do

- For details on what makes a good task (i.e., the characteristics of a good task), read the assigned readings, the assignment and Appendix 1 carefully.

- Go the work site:
  - Interview staff/end-users.
  - Observe people doing real tasks.

Concrete Task Examples

They were created by talking to the library staff and observing them work

Task

- Joan Hart, a regular and experienced library employee, is working behind the counter. Marie Smith, a regular library customer brings three books to the counter <*The Da Vinci Code, Slightly Tempted, I Am an American Soldier*> and asks that they be checked out. Marie doesn't have her library card so Joan finds Marie's library number, checks out the books for her and reminds Marie that she has some late fines to pay. Marie says she will pay for them next time. Joan gives Marie the books, and Marie leaves.

Concrete Task Examples

Discussion

- This is a fairly routine task, as validated by Joan. Books are checked out, and the client is reminded of late fees. It also illustrates some working practices. Most clients do not have their cards, and expect librarians to look them up. This is acceptable library policy. Similarly, staff can choose to allow customers to defer paying their fees.

- Joan is also a typical system user, while Marie is a typical client.

Concrete Task Examples

Task

- Joan's next client is James Tam. James is a regular library patron and is somewhat notorious for exceeding book checkout limits, returning books late, never having his library card, and accumulating library fines. He is returning 5 books (2 which are overdue) <*The Miko, Battletech: Endgame, Against the Giants, The Temple of Elemental Evil and The Book Five Rings*>. When Joan starts checking them in she notices that one of the books is missing its bar code number. She looks up the title, checks it in, and sets it aside for repair…

Concrete Task Examples

- …while she is doing this, James brings 3 more books <*Battletech: I am Jade Falcon, Wing Commander: The Price of Freedom, Great Weapons of World War II*> and 4 CDs <*Two Unlimited: Hits Unlimited, Mortal Kombat: Annihilation, The Soundtrack from Top Gun and Def Leppard: Greatest Hits*> to the counter. Joan starts checking out his holdings. She notices that he has reached the maximum level of a $10 fine in overdue books. She tells James about the fine, and he reluctantly pays it. After checking out two of his books, she notices that James has already reached the maximum number of allowable books to be checked out and asks James if she can check the rest out on his son's account, and he says yes. She continues using his son's account until all books are checked out. James then asks if he can renew any books that are overdue: 3 of them are, and Joan does this for him.

Concrete Task Examples

Discussion

- This is a complex task that contains many situations that, while less routine, are still important. In particular, it contains some elements of the library policy (e.g., dealing with maximum fines), some workarounds (e.g., accounts with that have reached the maximum number of check-outs), and some less routine situations (e.g., damaged books).

Tentative List Of Requirements

Absolutely must include:
- Rapid check-in and check-out of holdings
- Lookup of customers
- Status of customer holdings (e.g., books checked out, books overdue, fines)
- Ability to clear fines
- ….

Should include:
- …

Could include:
- …

Exclude:
- ...

Note: It is very important that you indicate why a particular requirement falls into the category that it did.