

chapter 5 & 15
interaction design basics

System Users

System users – a “customer” who will use or is affected by an information system on a regular basis – capturing, validating, entering, responding to, storing, and exchanging data and information.

- Internal users
 - Clerical and service workers
 - Technical and professional staff
 - Supervisors, middle managers, and executive managers
 - Remote and mobile users (internal but disconnected)
- External users
 - Customers
 - Vendors

Background

- Presently health insurance agencies require hospital to release patients as quickly as possible. Patients that can not return home are sent to health centers that provide continued or rehabilitation care for the patients.
- When a patients is ready to be released from the hospital multiple health center are called. The health center sends traveling nurse to the hospital to evaluate the patients and determined if the patients should be admitted to the health center. The first health center to ok the admission of patients gets the business.

SLAYDEN, JAMES P. (2004).
HUMAN-COMPUTER INTERACTION

Health Scenario 1

- Referring Facility
 - Calls Health South Call Center And Provides Patient Information For Admission
- Traveling Nurse
 - Obtains Pertinent Patient Information From The Call Center Via Telephone Or Fax Utilizing the GEM Pre-Admission Summary
- Traveling Nurse
 - Determines Fiscal Clearance. (What Type of Health Coverage Does the Patient have?)

SLAYDEN, JAMES P. (2004).
HUMAN-COMPUTER INTERACTION

Health Scenario 2

- Traveling Nurse
 - Determines If the Patient Is Clinically Appropriate By Possibly Consulting With the Nursing Supervisor for Help In This Determination.
- Pharmacy
 - Travelers Nurse Checks Patient's Medications With Pharmacy For Medication Clearance Via Phone Fax Or E-Mail

SLAYDEN, JAMES P. (2004).
HUMAN-COMPUTER INTERACTION

Health Scenario 3

- Traveling Nurse
 - Will Tell the Referring Facility of Any Non-stock Medications That The Patient Will Need To Bring With Them
- Nursing Supervisor
 - Traveling Nurse Confers With Nursing Supervisor to Advise Her Briefly On The Patient's Condition Reason For Admission And Asks For Bed Assignment
- Traveling Nurse
 - Will Fax or E-Mail the GEM Preadmission Summary To The Nursing Supervisor

HUMAN-COMPUTER INTERACTION

Health Scenario 4

- Traveling Nurse
 - Will Make That Offer To the Referring Hospital, Receives The Acceptance, Time of Transfer and Who Will Sign the Patients In
- Traveling Nurse
 - Will Communicate Patients Booking and Time for Transfer to Nursing Supervisor

HUMAN-COMPUTER INTERACTION

Health South Problems

1. Call Center Entering Hospital Information
2. HIPAA Medical Privacy of Personal Health Information & Information Portability
3. Getting Admissions Information To And From Traveling Nurse
4. Quick Action On Admission
5. Timely Notifying Of Housekeeping And Pharmacy Of Patient Needs
6. Traveling Nurse on Average a More Mature User
7. At present the admission process is done with pagers, paper forms, and faxes.
8. The process is labor intensive taking more then 24 hours costing the health center heavily in lost opportunities and profits.

HUMAN-COMPUTER INTERACTION

Prototype Using Access

- [Example of Prototyping Using MS Access](#)

HUMAN-COMPUTER INTERACTION

Accessing PeopleSoft Applications 1-4

- Signing on to PeopleSoft
 - Menu Navigation
 - Business Process Navigation
 - USERID
 - PASSWORD

HUMAN-COMPUTER INTERACTION

PeopleSoft Navigation.... 1-1

- Understanding PIA Advantages.... 1-2
 - 100 % Internet
 - Internet Solutions
 - Universal Access Through Web Browser
 - Enhanced Self-services Web Functionality
 - Role-based Transactions

HUMAN-COMPUTER INTERACTION

Web Portal

- [Web Portal Example](#)

HUMAN-COMPUTER INTERACTION

Human Engineering Guidelines

- The user should always be aware of what to do next
 - Tell user what the system expects right now.
 - Tell user that data has been entered correctly.
 - Tell user that data has not been entered correctly.
 - Explain reason for a delay in processing.
 - Tell user a task was completed or not completed.
- Format screen so instructions and messages always appear in the same general display area.
- Display messages and instructions long enough so user can read them.

HUMAN-COMPUTER INTERACTION

Human Engineering Guidelines (continued)

- Use display attributes sparingly.
- Default values should be specified.
- Anticipate errors users might make.
- Users should not be allowed to proceed without correcting an error.
- If user does something that could be catastrophic, the keyboard should be locked to prevent any further input, and an instruction to call the analyst or technical support should be displayed.

HUMAN-COMPUTER INTERACTION

Guidelines for dialogue Tone and Terminology

- **Dialogue** – the overall flow of screens and messages for an application
- **Tone:**
 - Use simple, grammatically correct sentences.
 - Don't be funny or cute!
 - Don't be condescending.
- **Terminology**
 - Don't use computer jargon.
 - Avoid most abbreviations.
 - Use simple terms.
 - Be consistent in your use of terminology.
 - Carefully phrase instructions—use appropriate action verbs.

HUMAN-COMPUTER INTERACTION

Exercise 5-4

- [Nuclear Scenario](#)

HUMAN-COMPUTER INTERACTION

Exercise 5-4 Answer 1

- Note: Jenny has been 6 hours on a night shift, so errors are likely especially under stress.
 - 1 **Jenny notices the core reaction rate has risen very rapidly**
one perhaps wonders why this wasn't noticed earlier, perhaps a problem in positioning of displays?
 - 2 **she realises she must immediately change the reactor target ...**
OK
 - 3 **she goes to the Alarm Control Panel ... presses '+' twice**
Jenny has remembered that she needs to be in RED state to use manual override
 - 4 **the Emergency Confirm button glows red**
OK, Jenny should press CONFIRM now, but having pressed the '+' and seen the RED alarm state light glow she gets the 'aha' feeling of closure and forgets to press CONFIRM. The red of CONFIRM button is intended to remind her but ..

HUMAN-COMPUTER INTERACTION

Exercise 5-4 Answer 2

- 5 **she moves across to the Manual Override panel ...**
clearly Jenny didn't notice the CONFIRM button, presumably because it is at the bottom of the panel and she is looking at the Alarm control at the top. Peripheral vision is good at black and white (contrast) changes, but not colour.
- 6 **she selects 'Pressure' from the pull down on the Manual Override panel**
which won't work because she is in the wrong Alarm state - this is a mode error caused by the original closure error, but when she is at the far left of the control panel the current system mode (temporary red alarm state) is not visually (or audibly) clear.
- 7 **she types the new value '6000' using the keypad**
and forgets to press SET - another a closure error
- 8 **she notices that the number on the Reactor Targets panel has not changed**
happily she does double check this rather than simply moving on which would have easily been possible
- 9 **she realises she forgot to press the SET button on the Manual Override panel**
OK, realises this one, perhaps because of better logical grouping

HUMAN-COMPUTER INTERACTION

Exercise 5-4 Answer 3

- 10. **she presses the SET button**
OK, but ...
- 11. **the value still doesn't change**
still in wrong mode (alarm state temp red)
- 12. **an automatic audio warning sounds "60 seconds to core meltdown"**
good choice of warning modality to use sparingly for critical information. In a big control room a visual alarm would easily be missed.
- 13. **she presses the SET button repeatedly**
typical user reaction, happily doesn't cause bad effects!
- 14. **still the value doesn't change**
still in wrong mode and despite repeated failure still doesn't think of a mode error - which is normal behaviour in error situations - the expected mode is part of the assumptions she brings to her problem solving

HUMAN-COMPUTER INTERACTION

Exercise 5-4 Answer 4

- 15. **she starts again, selects 'Pressure' from the pulldown, types 6000 and presses SET**
presumably thinking that the previous part-finished action sequence before 'confused' the system
- 16. **still the value doesn't change**
- 17. **the audio warning says "30 seconds to core meltdown"**
- 18. **Jenny runs across the room to the Emergency Shutdown panel**
no, still doesn't realise that the problem is the wrong alarm state, but now aiming to shut down the reactor to avoid meltdown
- 19. **"20 seconds to core meltdown"**
- 20. **she presses "Immediate Emergency Commence" button**
correct action in dire emergency
- 21. **the emergency confirm button glows red**
but this time is close to the button she has just pressed (in fact it would have already been glowing when she got there but perhaps didn't notice as she was running and stressed) and so this time she notices the CONFIRM button ...
- 22. **"10 seconds to core meltdown"**

HUMAN-COMPUTER INTERACTION

Exercise 5-4 Answer 5

- 23. **she presses the " Emergency Confirm" button**
... at last!
- 24. **she hears the crash of the explosive bolts ...**
actually there is nothing quite so good as real physical feedback whether visual, tactile or, as in this case, audible
- 25. **the audio system announces "reactor shutdown successful"**
but restarting the reactor will take weeks and cost vast amounts of money!

HUMAN-COMPUTER INTERACTION

Exercise 5-5 Answer

- Have a separate CONFIRM button on the Alarm control panel, making it flash so it is more readily seen in peripheral vision. Distinguishing red from temporary red state by flashing the red light would also help prevent the initial mode error.
- When the user tries to select a target and enter a value, a warning of some sort should be issued. This could simply be a 'this doesn't work' beep, but better would be a warning written on the manual override panel which perhaps lights up when not in RED alarm state.

HUMAN-COMPUTER INTERACTION THIRD EDITION DIX FINLAY ABOUW BEALE

chapter 15 task models

HUMAN-COMPUTER INTERACTION

GEM Pre-Admission Evaluation

- Patient Name & Demographics(I.E.)
 - Address
 - Phone Number
 - Emergency Contact
 - Referral Source
 - Physicians
 - Insurance Information


