N-Proc

Troubleshooting your health: Automating a Nursing Process

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The Problem

- Old method is tedious
  - Students had to use several books at each step
  - Professors had to muddle through student’s bad handwriting

- Standardization
  - Students would use their own words at times when standard terms are more appropriate
The Solution

- Automation
  - To have some sort of automated system for the students to do their Nursing Process Form

- Standardization
  - Only standard terms in the program

- Neatness
  - Printouts are legible
Approach

- How to approach the problem such that we end at the solution
  - Determine type of solution
  - Compatibility with Union’s machines and network
  - Doable with resources available to us
Approach (cont.)

- Determine type of solution
  - Program vs. web-based solution
    - Availability
      - Program is not dependent on externals
      - Web-based application can be run from anywhere
    - Speed
      - A compiled program will run faster than a webpage.
    - Centralization
      - Web-based will have all files on a central server so that it is more easily updated
Approach (cont.)

- Compatibility with Union’s infrastructure
  - A web-based solution was chosen
  - Union runs MS SQL Server with ColdFusion

- Conclusion: logically, it makes sense to use the same so no compatibility issues arise
Approach (cont.)

☐ Resources available to us

■ Is there access to ColdFusion and MS SQL Server?

☐ Yes

■ Macromedia provides developer edition of ColdFusion Server

■ MS provides trial version of SQL Server
Development Process

- Database
  - Normalization
  - Relationships
Development Process (cont.)

- Backend
  - Determine what the backend should do
    - Restrict access
    - Add, delete, and modify all standard data
      - Standard data means the NIC, NOC, etc.
    - Add, delete, and modify users
    - Delete old patient records
      - Clean up at end of semester
Development Process (cont.)

- Backend (cont.)
  - Were the goals completed?
    - Yes, all the goals were met
  - Greatest obstacle to completion?
    - Linking diagnoses to NICs, NOCs, and Characteristics
  - Solution to problem
    - View the source
  - Additional features implemented
    - Sortable tables
Development Process (cont.)

- Front-end
  - Determine what the front-end should do
    - Restrict access
    - Ability to search characteristics
    - Find all diagnoses that match characteristics, sorted by best match
    - Based on diagnosis chosen allow dynamic selection of NICs and NOCs
    - Store assessment for later viewing and modifying
    - Provide a printable summary
Development Process (cont.)

☐ Front-end (cont.)
  ■ Were the goals met?
    □ Yes
  ■ Greatest obstacle to completion?
    □ Best match algorithm
  ■ Solution to problem?
    □ Source Code
  ■ Additional features implemented
    □ Report tree (Java applet – included plug-in)
The N-Proc Process

☐ Gather Characteristics
  ■ User searches for and enters characteristics
  ■ All characteristics collected are stored

☐ Diagnosis
  ■ Characteristics are used to determine a best match
The N-Proc Process (cont.)

☐ NIC and NOC
  ■ The user must select the relevant NICs and NOCs for the diagnosis chosen

☐ Implementation and Evaluation
  ■ The user enters there own explanation of these steps

☐ N-Proc Page
Implementation

- The N-Proc system must be uploaded to Union’s web server and linked from the nursing homepage
Concluding Thoughts

- Things learned
  - The Nursing Process
    - Better understanding of what nurses do
  - Microsoft SQL Server
  - Advanced ColdFusion
  - Advanced SQL
Concluding Thoughts (cont.)

☐ Go back and change one thing?
  □ Start earlier
    ☐ More appealing interface
    ☐ More functionality
      □ i.e. Archives
Concluding Thoughts (cont.)

☐ Final analysis

- Front End
- Back End
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