Dynamic Network Device Mapping System (DNDMS)

Preliminary Design
By
SKYNET Software
Welcome

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School of Science
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Agenda

- Introductions
- Data Flow and Structure Diagrams
- Logical Data Stores
- Test Plan
- Prototypes
- Timeline
Team SKYNET

- Kevin Fealey ............... Project Champion
- Heimdall Imbert ............. Systems Administrator
- Stephanie Maloney ........... Documentarian
- Trevor March ............... Webmaster
- Andrew Warner .............. Systems Analyst
Problem Definition

• Current methods are inefficient
• Data is only accessible locally
• Device information is scattered
• Current digital maps: not easily updated
Context Diagram

Legend

- Process
- File/Store
- Source/Sink

11/30/2007

Dynamic Network Device Mapping System (DNDMS)

User and Network Device Information Database

Faculty

Department Head

Administrator

Department-Map-Homepage

Login-Info

Office-Map-Homepage

Login-Request

Building-Map-Homepage

Admin-Maintenance

Data

Login-Info

Source/Sink

File/Store

Process

Legend
Logical Data Stores (User Table)

Table: User

- **Lname**: CHAR(12)
  - User's last name

- **Fname**: CHAR(12)
  - User's first name

- **UserGroup**: VARCHAR(15)
  - Describes user’s permission group
Logical Data Stores (Room Table)

Table: Room

**Num**: VARCHAR(5)
- Room number

**Building**: CHAR(3)
- Building the room is found in
Logical Data Stores (Room Table cont.)

Department: CHAR(15)
  - Department the room is used by

Type: CHAR(10)
  - Type of room (ex. lecture, lab)

EEC: CHAR(1)
  - Electronically Enhanced Classroom - Y/N
## Test Catalog

<table>
<thead>
<tr>
<th>Test Result</th>
<th>Test Number</th>
<th>Unit Test Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>F</td>
<td>1  Login Page</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>2  Floor Plan Page (Administrator)</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>3  Room Plan Page (Administrator)</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>4  Main Menu Page (Administrator)</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>5  Administrator Control Panel Page</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>6  Search Page (Administrator)</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>7  Floor Plan Page (Department Head)</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>8  Room Plan Page (Department Head)</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>9  Floor Plan Page (Faculty)</td>
</tr>
<tr>
<td>P</td>
<td>F</td>
<td>10 Room Plan Page (Faculty)</td>
</tr>
</tbody>
</table>

Pass/Fail:

P = Pass
F = Fail
# Unit Test Example - Admin Control Panel

<table>
<thead>
<tr>
<th>Test Case Name</th>
<th>Description</th>
<th>Input</th>
<th>Expected Result</th>
<th>Actual Result</th>
<th>Comments</th>
<th>Test Result (Pass/Fail)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.01</td>
<td>Change User type to Administrator</td>
<td>Left-click radio button marked Administrator, Left-click Submit button</td>
<td>Page generated informing the user of their new permissions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.02</td>
<td>Change User type to Department Head</td>
<td>Left-click radio button marked Department Head, Left-click Submit button</td>
<td>Page generated informing the user of their new permissions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.03</td>
<td>Change User type to Faculty</td>
<td>Left-click radio button marked Faculty, Left-click Submit button</td>
<td>Page generated informing the user of their new permissions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.04</td>
<td>Assign Device to user</td>
<td>Assign Device to user (Vital Information)</td>
<td>Knobs asset tag into Asset Tag text box, Left-click Submit button</td>
<td>Page generated informing the user of addition of device to user's permissions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.05</td>
<td>Assign Device to user (vital information)</td>
<td>(Unknown asset tag) into Asset Tag text box, Left-click Submit button</td>
<td>Page generated informing the user of the asset tag not found in the database.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.06</td>
<td>Assign multiple devices to user</td>
<td>Assign Devices to user (Email Information)</td>
<td>Knobs asset tags (formatted by connecting into Asset Tag text box, Left-click Submit button</td>
<td>Page generated informing the user of addition of devices to user's permissions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.07</td>
<td>Assign multiple devices to user (vital information)</td>
<td>(Unknown asset tags) formatted by connecting into Asset Tag text box, Left-click Submit button</td>
<td>Page generated informing the user that the inputted asset tag was not found in the database.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.08</td>
<td>Search for asset tag by IP Address (encoded IP)</td>
<td>Search for asset tag by IP Address (encoded IP)</td>
<td>Known IP address into IP Address text box, Left-click Submit button</td>
<td>Page generated displaying matching encoded IP address with options to select device.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.09</td>
<td>Search for asset tag by IP Address (known IP)</td>
<td>Search for asset tag by IP Address (known IP)</td>
<td>Known IP address into IP Address text box, Left-click Submit button</td>
<td>Page generated displaying all matches for IP address.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.10</td>
<td>Search for asset tag by MAC Address (encoded MAC)</td>
<td>Search for asset tag by MAC Address (encoded MAC)</td>
<td>Known MAC Address into MAC Address text box, Left-click Submit button</td>
<td>Page generated displaying matching encoded MAC Address with options to select device.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.11</td>
<td>Search for asset tag by MAC Address (known MAC)</td>
<td>Search for asset tag by MAC Address (known MAC)</td>
<td>Known MAC Address into MAC Address text box, Left-click Submit button</td>
<td>Page generated displaying all matches for MAC Address.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.12</td>
<td>Select Administration Control Panel</td>
<td>User clicks the link for the Administration Control Panel</td>
<td>Administrator Control Panel with page loads.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.13</td>
<td>Select Admin Control Panel</td>
<td>User clicks the link in layout</td>
<td>Labeled Admin Control Panel page loads.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.14</td>
<td>Select College</td>
<td>User clicks the link for Sierra College web site</td>
<td>Sierra College page loads.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.15</td>
<td>Select Sierra College Computer Science</td>
<td>User clicks the link for the Sierra College Computer Science Department</td>
<td>Sierra College Computer Science Department page loads.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.16</td>
<td>Select Sierra College Computer Science Computer Science</td>
<td>User clicks the link for the Sierra College Computer Science Department</td>
<td>Sierra College Computer Science Department page loads.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.17</td>
<td>Select Sierra College Software Engineering</td>
<td>User clicks the link for Sierra College Software Engineering</td>
<td>Sierra College Software Engineering page loads.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.18</td>
<td>Select SKYNET Software</td>
<td>User clicks the link for SKYNET Software</td>
<td>SKYNET Software page loads.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.19</td>
<td>Select Control Panel</td>
<td>User clicks the link for the Control Panel</td>
<td>Control Panel page loads.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Welcome to SKYNET Software's Dynamic Network Device Mapping System!

Please log in to gain access to the Siena College School of Science network device information.

Username: [Username]
Password: [Password]
Submit
DNDMS: View Users

Dynamic Network Device Mapping System

View Users

Welcome, ADMIN

Control Panel | Administrator Control Panel | Logout

<table>
<thead>
<tr>
<th>Username</th>
<th>User Type</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMIN</td>
<td>Administrator</td>
<td>ALL</td>
</tr>
<tr>
<td>AWARNER</td>
<td>Faculty</td>
<td>View Room, View Room</td>
</tr>
<tr>
<td>DHEAD</td>
<td>Department Head</td>
<td>View Dept, View Room</td>
</tr>
<tr>
<td>F_MEM</td>
<td>Faculty</td>
<td>View Room</td>
</tr>
<tr>
<td>HIMBERT</td>
<td>Administrator</td>
<td>ALL</td>
</tr>
<tr>
<td>KFEALEY</td>
<td>Department Head</td>
<td>View Dept, View Room</td>
</tr>
<tr>
<td>SMALONEY</td>
<td>Department Head</td>
<td>View Room</td>
</tr>
<tr>
<td>TMARCH</td>
<td>Faculty</td>
<td>View Room</td>
</tr>
</tbody>
</table>

Add  Remove

Siena College | Computer Science Department | Siena Software Engineering | SKYNET Software
[Project Home]
DNDMS: Admin Main Menu

Dynamic Network Device Mapping System

Main Menu

Welcome, ADMIN
Control Panel | Administrator Control Panel | Logout

Roger Bacon:
RB 1st Floor
RB 2nd Floor
RB 3rd Floor
RB 4th Floor

Morell Science Center:
MSC 1st Floor
MSC 2nd Floor
MSC 3rd Floor

Enter a room to jump to: RB304 Submit
Select an asset tag to jump to: 21095 Submit

[NetRegistration | Reset user password]
DNDMS: Admin Control Panel

Dynamic Network Device Mapping System

Administrator Control Panel

Welcome, ADMIN
Control Panel | Administrator Control Panel | Logout

View User List

Please set permissions for Faculty USER
User type:
Administrator: ●
Department Head: ●
Faculty: ○
Submit

Insert asset tag to assign to USER:
Separate multiple asset tags with commas.
21095
Submit

Search for device asset tag by:
(result will be auto-inserted in the field above)
192.168.0.99
Submit
DNDMS: Floor View

Welcome, ADMIN
Control Panel | Administrator Control Panel | Logout

Current Floor: Roger Bacon, 3rd Floor
Please select a new floor: Roger Bacon 1st Floor

Floor Selection

Siena College | Computer Science Department | Siena Software Engineering | SKYNET Software
[Project Home]
DNDMS: Room View

Dynamic Network Device Mapping System

Room Selection

Welcome, ADMIN

Control Panel | Administrator Control Panel | Logout

Roger Bacon Hall - 3rd Floor - Room 348

Legend
- Macintosh
- PC
- Printer
- Hub
Supporting Documentation

- Preliminary Design - Presentation: November 30, 2007
- Detailed Design - Spring 2008
- Acceptance Test - Spring 2008
Summary

Any Questions?