Preliminary Design

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Virtual Network Device Mapping System

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November 27, 2006

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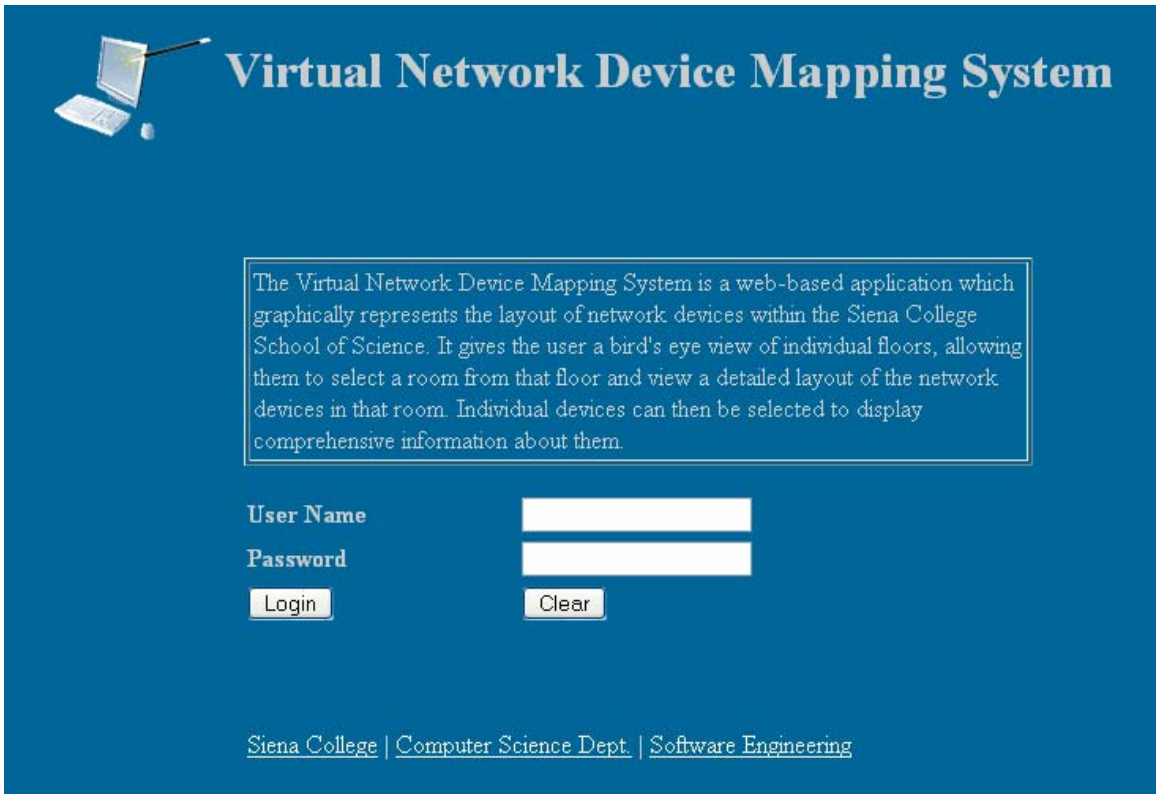
Introduction

The Virtual Network Device Mapping System is being developed at the request of Mr. Eric Crossman and Mr. Ken Swarner. The system will allow for a web-based, graphical organization and easy access to information about the devices on the network in the School of Science. This document will outline the preliminary design of the solution system.

Section 1: External Design Specifications

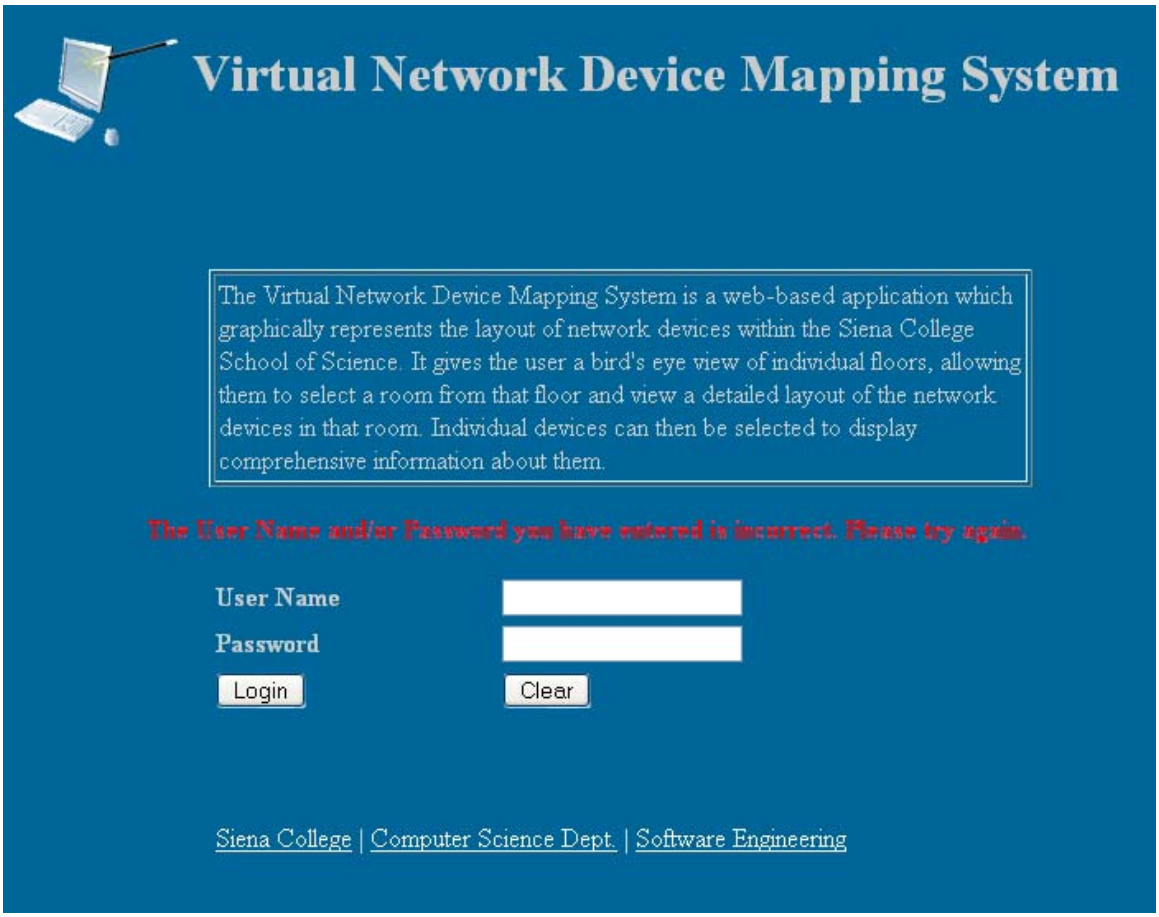
1.1 User Displays

Login Screen:



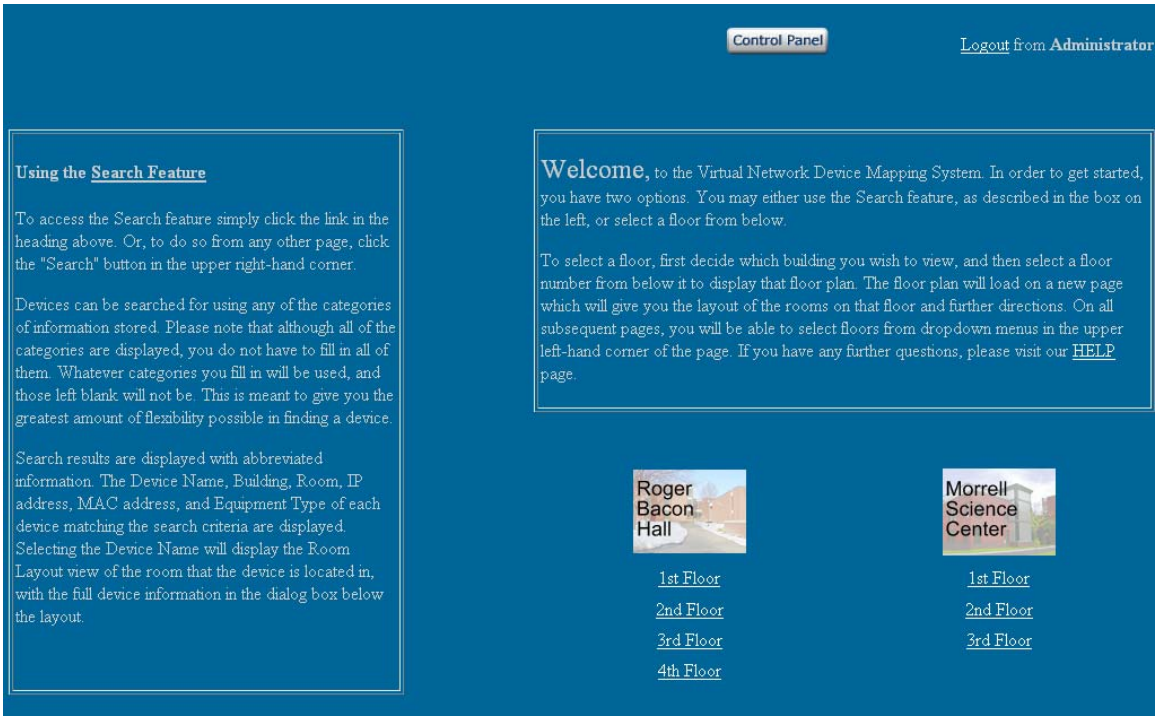
This is the first page that all users see when accessing the program. It gives a short description of the purpose of the program, followed by the login dialogue. This page also links to the websites of Team MAJIK via the team logo link, Siena College, the Computer Science Department, and the Software Engineering course. It is the same for all users.

Failed Login:



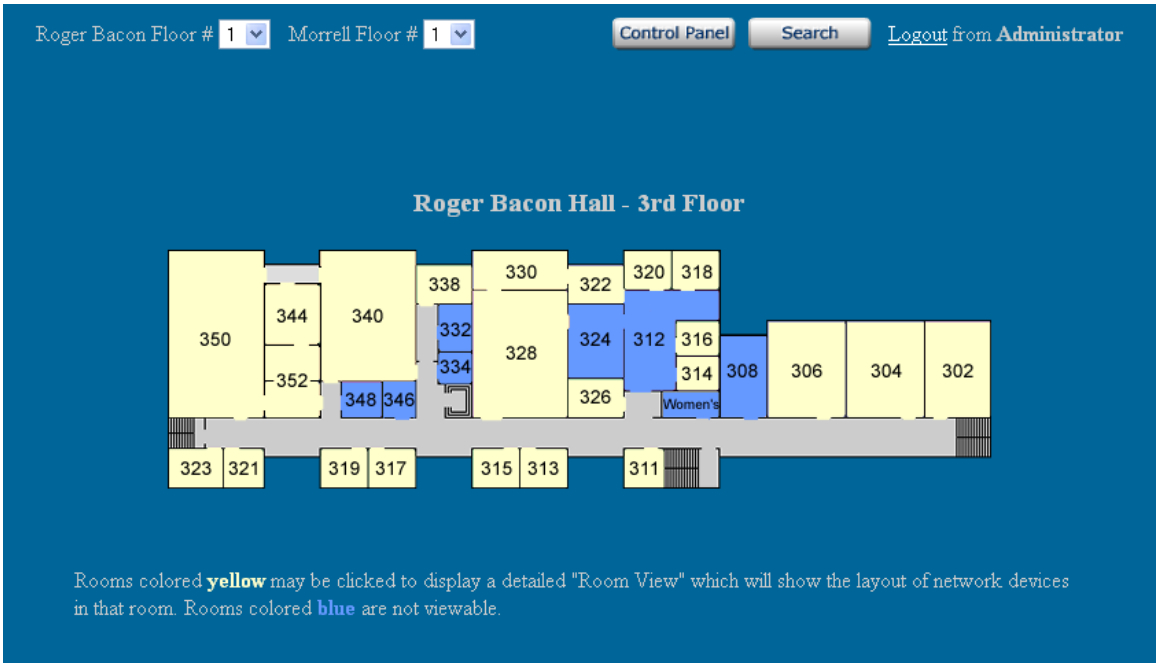
If a user enters an incorrect User Name and/or an incorrect Password, they are presented with a message informing them of their error.

Logged In:



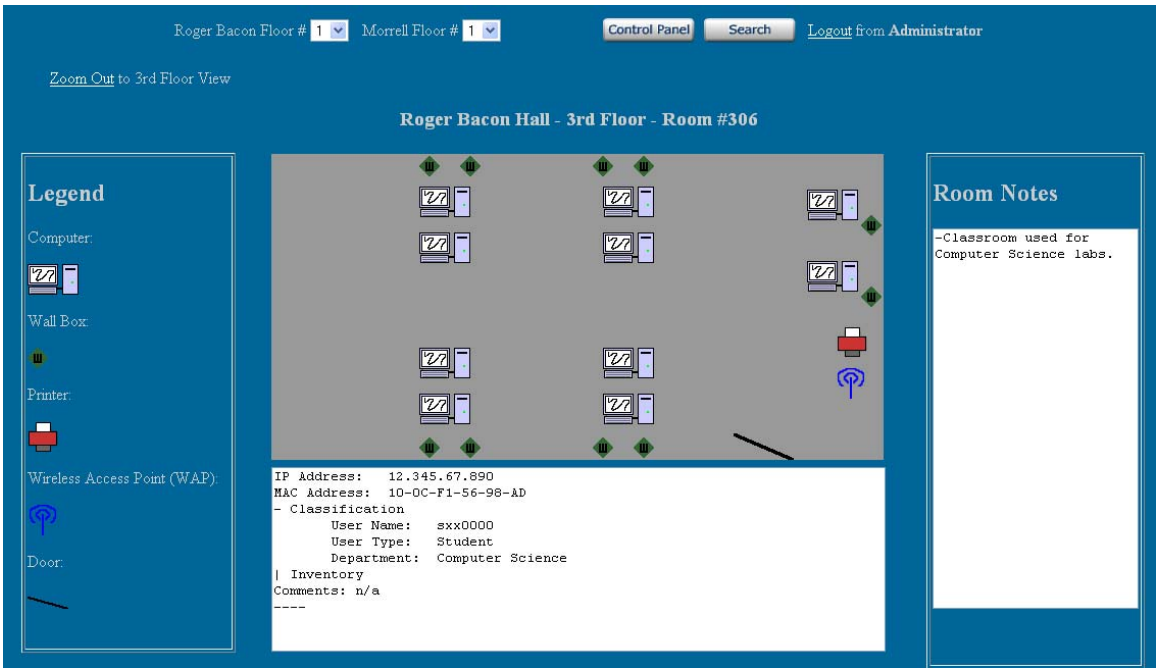
This is the first page a user will see after logging in. On this page, and all others after it, they will have the option to logout. They can do this by clicking the link in the top right hand corner of the page. This area also displays the User Name that they are logged into. Administrative users will see the Control Panel link as displayed, and all other users will not. Otherwise, the page displays the same for all users. Additionally, the page gives directions for use of the program and the option of choosing a floor to view or using the Search feature.

Floor Plan:



The Floor Plan page indicates the building and floor currently displayed. For the purposes of this prototype it is Roger Bacon Hall, third floor. Immediately below, the physical layout of that floor is graphically displayed. Users can select individual rooms in order to be brought to a closer view. On this, and subsequent pages, there are dropdown menus at the top allowing users to quickly move to different floors in the two buildings. There is also a link to the Search page present.

Room Layout:



The Room Layout page gives a close-up view of an individual room. It displays the location of all network devices in the room graphically. The devices are displayed as symbols which are defined in a legend to the left of the Room Layout image. Each device can be selected by a user, causing information pertaining to that device to be displayed in a dialogue box at the bottom of the page. The Room Notes that an Administrator user has saved for the room through use of the Control Panel are displayed on the right side. Also, a link is displayed allowing a user to quickly zoom out to the Floor Plan they were viewing before selecting that room.

Detailed Device Information:

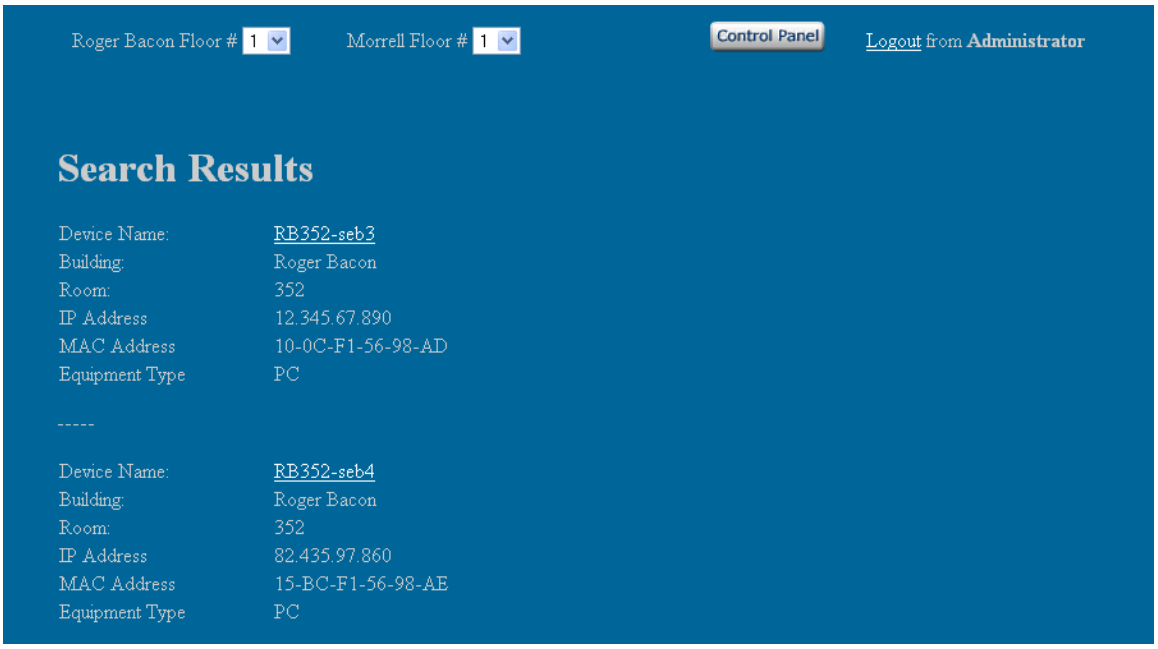
```
IP Address:   12.345.67.890
MAC Address:  10-0C-F1-56-98-AD
- Classification
       User Name:   sxx0000
       User Type:   Student
       Department:  Computer Science
- Inventory
       Asset Tag #:       21095
       Priority:          M
       VP Code:           VPAA
       Building:          Roger Bacon
       Room #:            306
       Manufacturer:      Dell
       Model:             Dimension 4xxx
       Equipment Type:    PC
       Monitor Type:      CRT
       Purchase Year:     200x
       Installed Date:    200x
       Puchase Order #:   4185906
       CPU:               Pentium 4
       Speed:             1.3 GHz
       Disk:              20 GB
       Memory:            1 GB of RAM
       Serial #:          418A48D3C
Comments: None.
----
```

The Room Layout image shows the device info partially abbreviated. This image shows off all information fields possible for a network device. The values given are meant as examples and may not follow the exact format of real data.

Search:

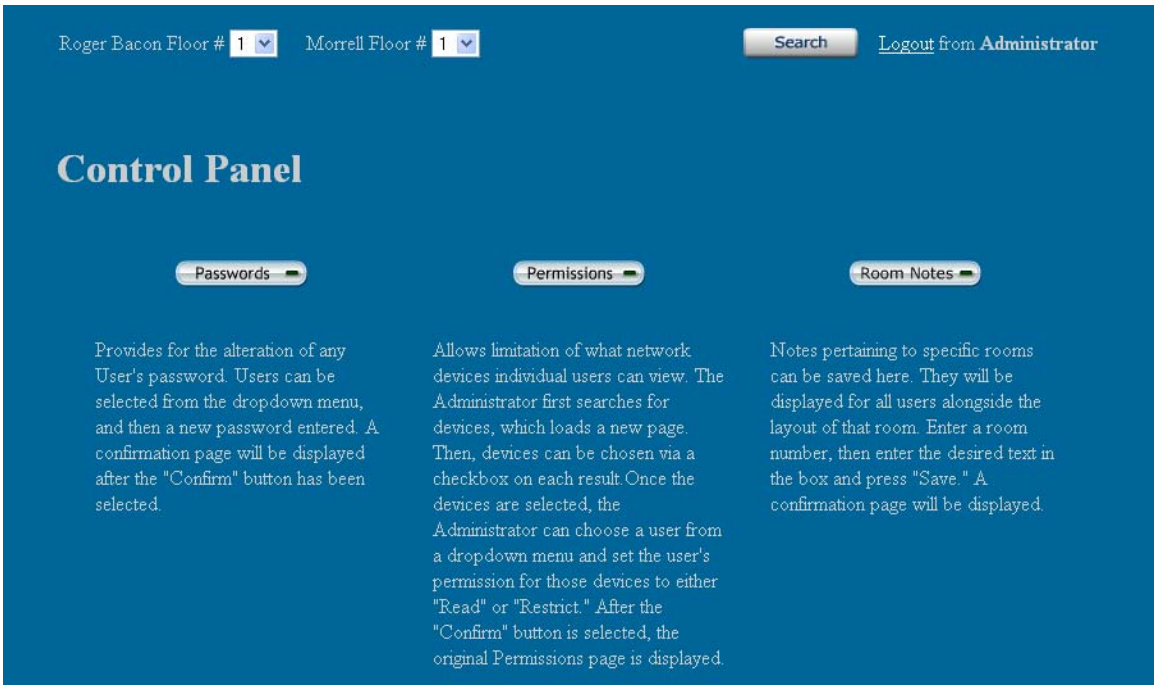
Devices can be searched for using any of the categories of information stored. Although all of the categories are displayed, only one is required to perform a search. Any categories filled in will be factored into the search, and those left blank will not be utilized. This is meant to give the greatest amount of flexibility possible in finding a device.

Search Results:



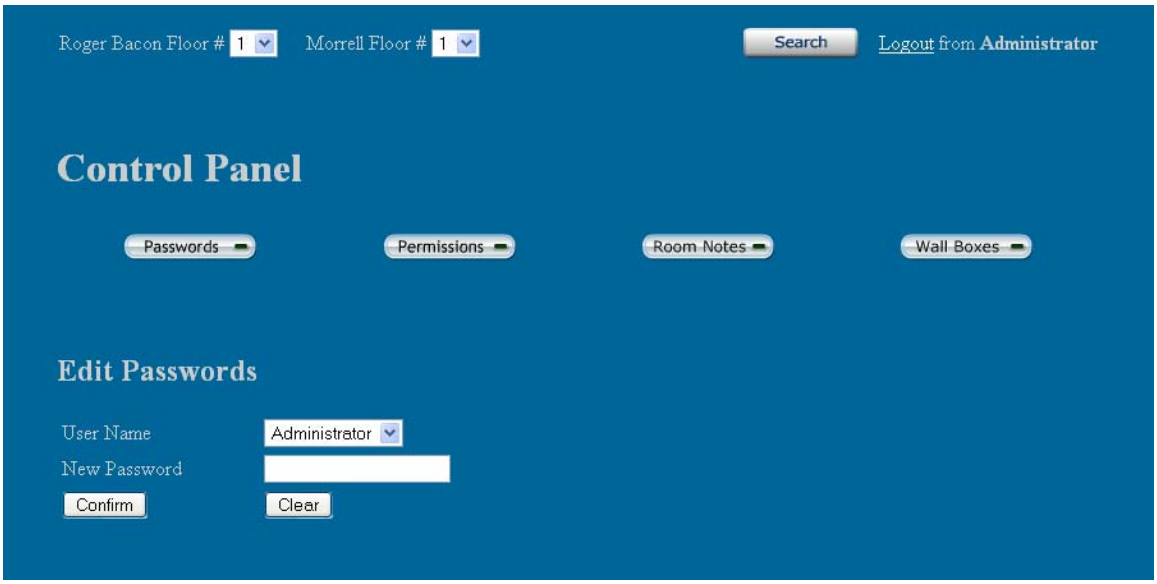
Search results are displayed with abbreviated information. The Device Name, Building, Room, IP address, MAC address, and Equipment Type of each device matching the search criteria are displayed. Selecting the Device Name will display the Room Layout view of the room that the device is located in, with the full device information in the dialog box below the layout. Multiple results are displayed one below the other.

Control Panel:



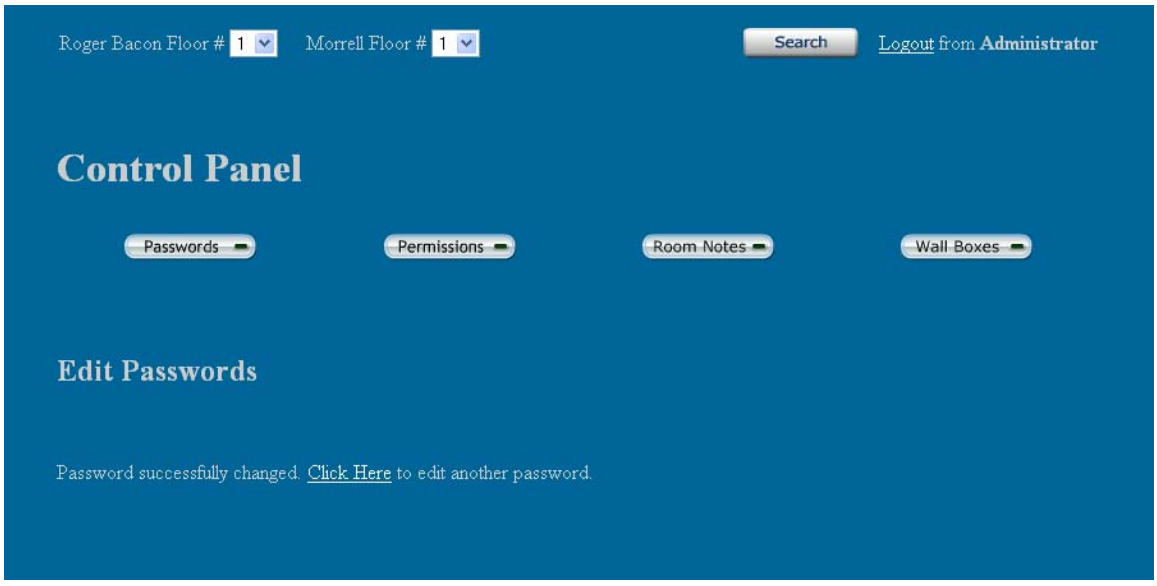
This page contains a menu detailing Administrative tasks. It can only be accessed by an Administrative user. Three Control Panel options are displayed; the ability to change passwords, edit permissions, and add room notes. Below each menu option is a short description and brief directions. Selecting a Control Panel menu item will load a new page.

Passwords:



The User Name is selected from a dropdown menu, and a new password is entered. The change is complete when the “Confirm” button is selected. A new page is loaded displaying a confirmation message. That page is displayed below.

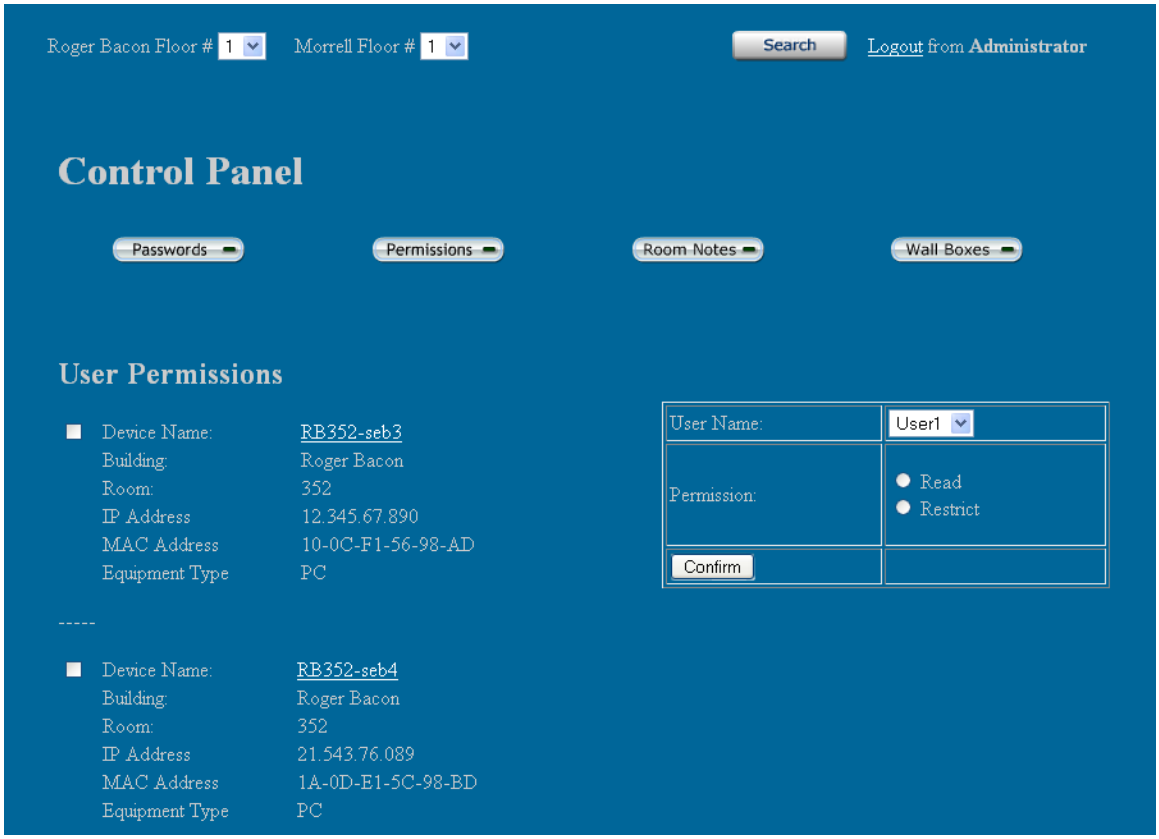
Password Change Confirmation:



Permissions Device Search:

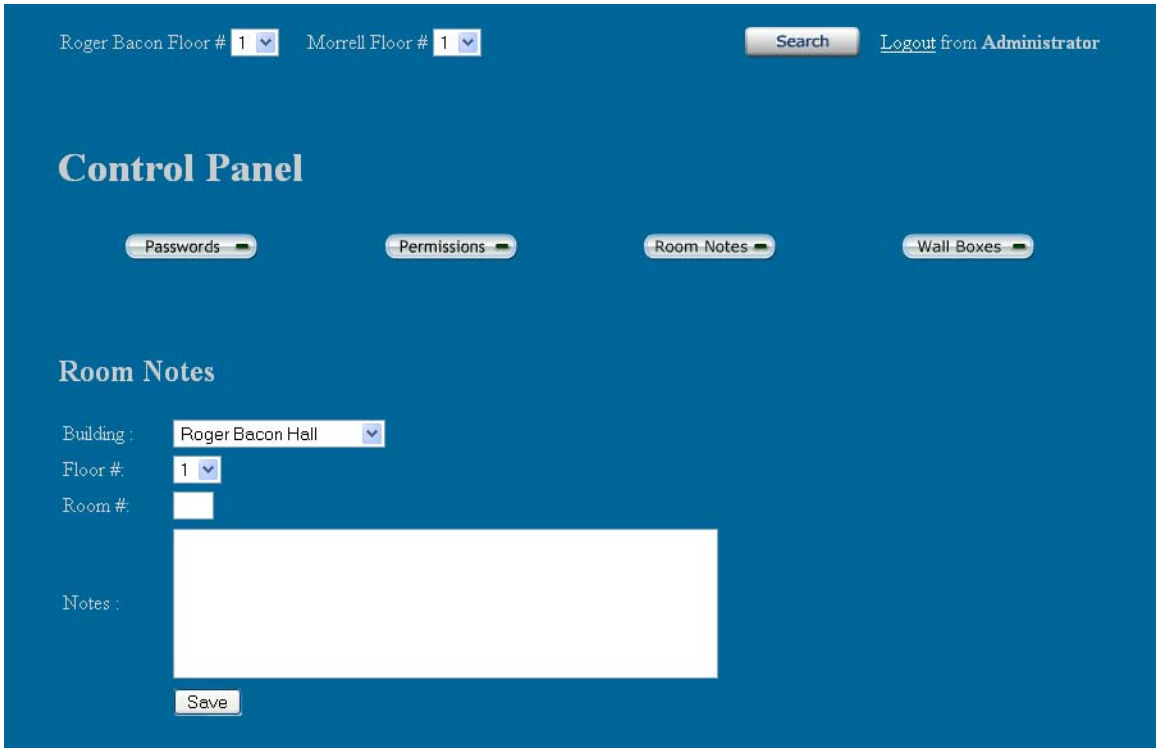
Allows limitation of what network devices individual users can view. The Administrator first searches for devices according to Building, Room, Device Name, or Equipment Type. Generally, the Administrator will be searching for a group of devices. After entering the proper search criteria, the “Search” button is selected and a new page is loaded.

Permissions Selection:



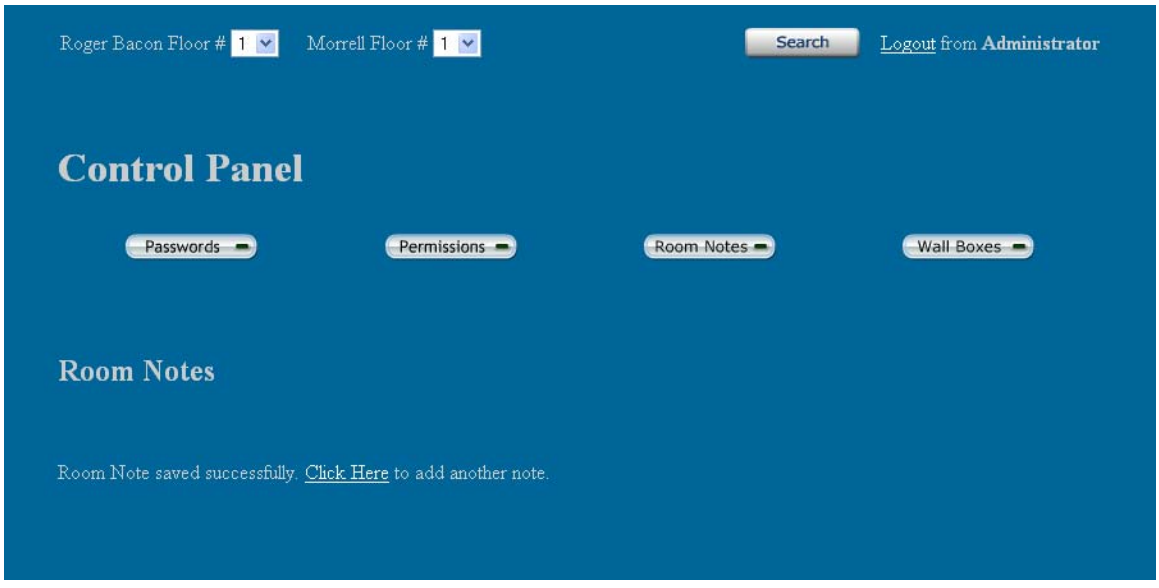
On the left, the search results are displayed. Devices can be chosen via a checkbox on each result. Once the devices are selected, the Administrator can choose a user from the dropdown menu on the right and set the user's permission for those devices to either "Read" or "Restrict." Read will allow the user to see that device and all information regarding it, and Restrict will prevent the user from viewing any information about the device. After the "Confirm" button is selected, the original Permissions page is displayed.

Room Notes:

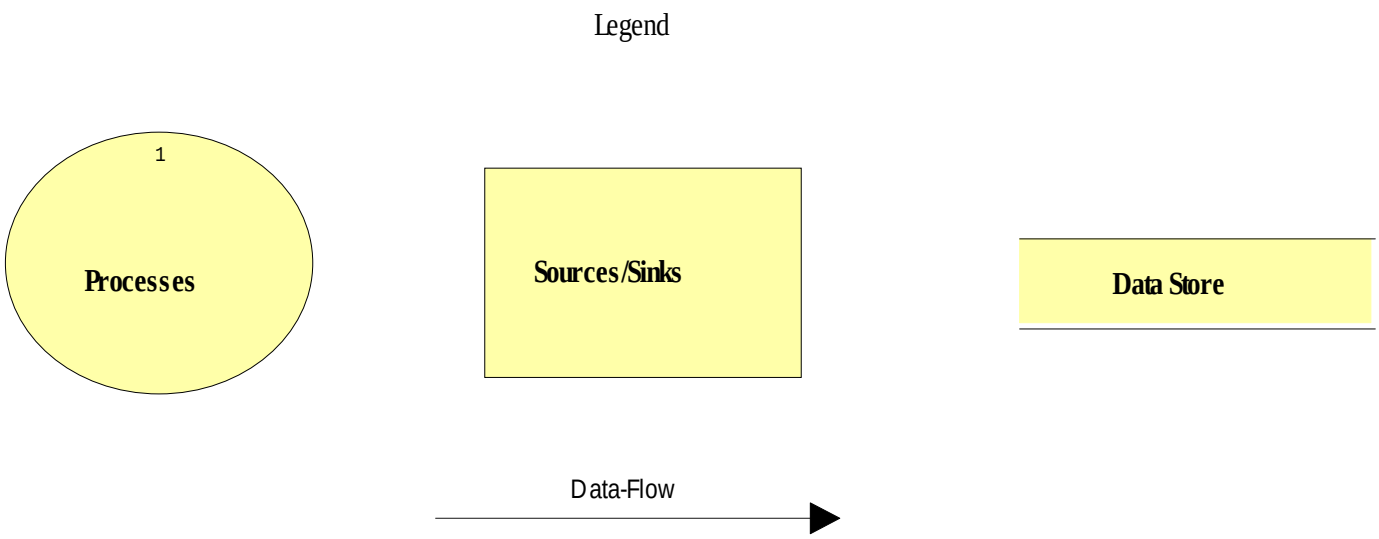


Notes pertaining to specific rooms can be saved here. They will be displayed for all users on the Room Layout screen. The Administrator first selects a building, and a floor within that building. Then, they enter the number of the room they wish to save a note about. Finally, the Administrator types in whatever notes they want saved about the room and selects “Save.” The Room Notes Confirmation page is displayed.

Room Notes Confirmation:



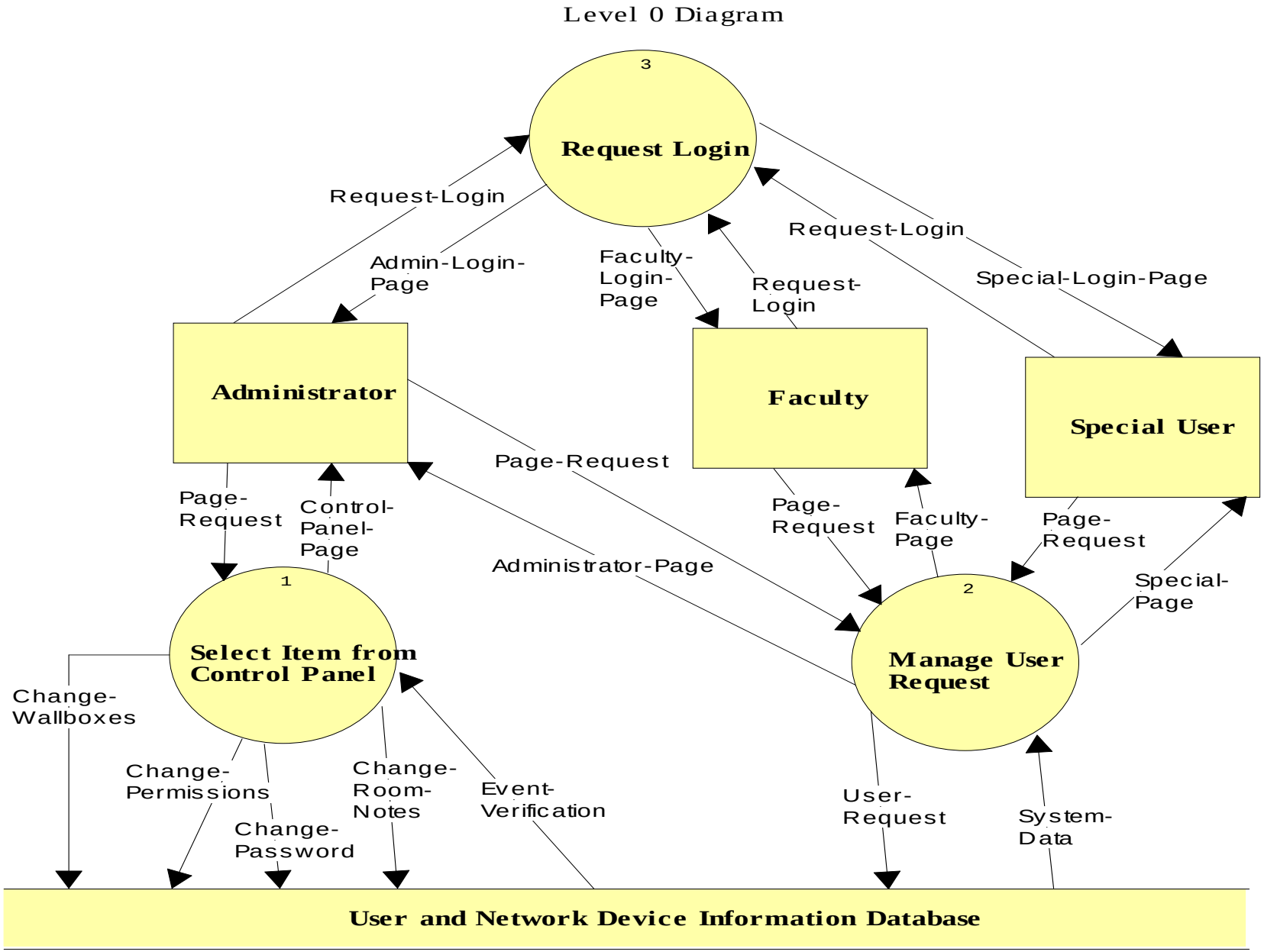
1.2 Data Flow Diagrams



Legend for icons used in the Data Flow Diagrams.

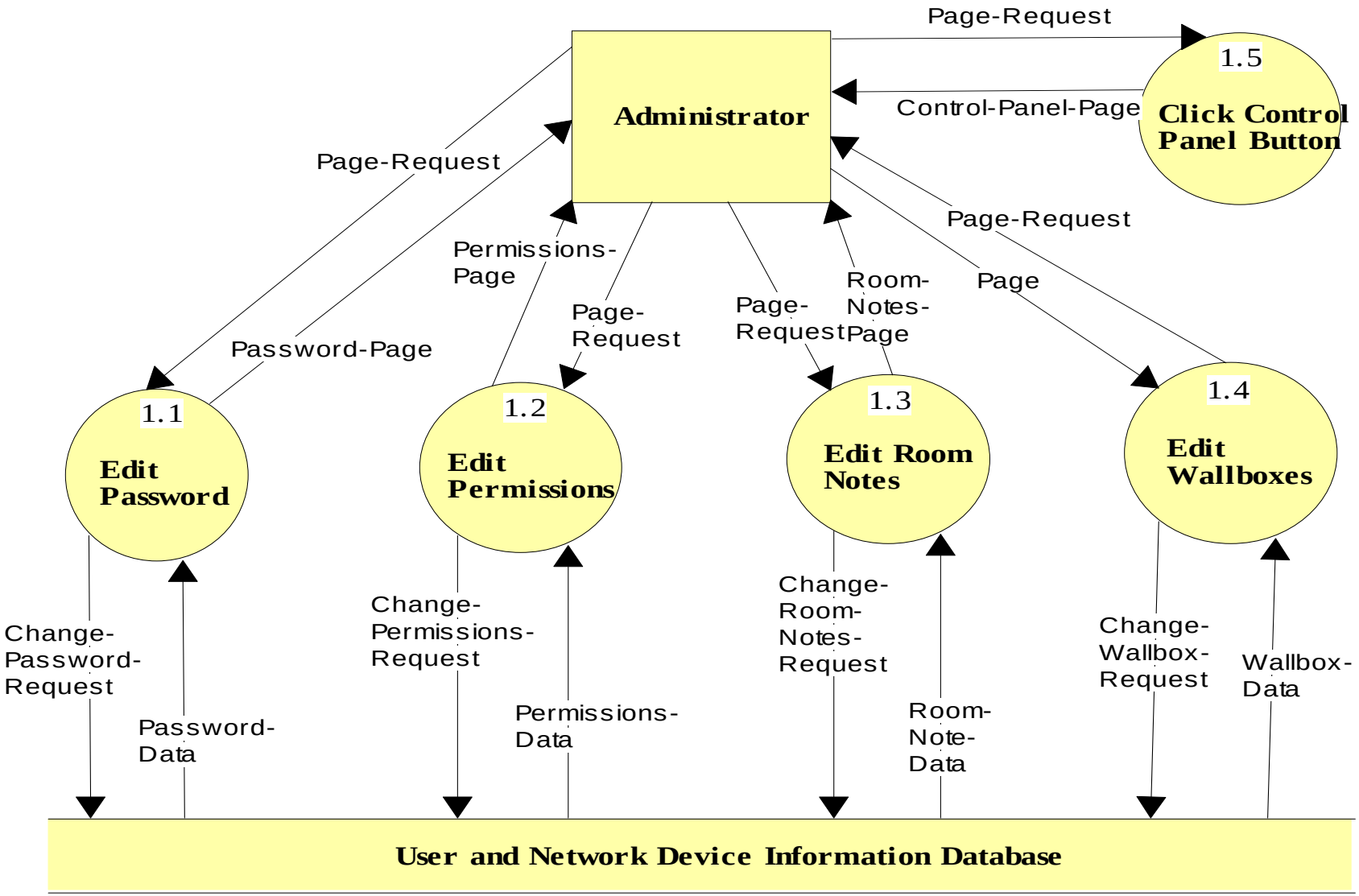
Context Diagram

Context Diagram: It is the most basic diagram that shows the interaction between the user and the system.

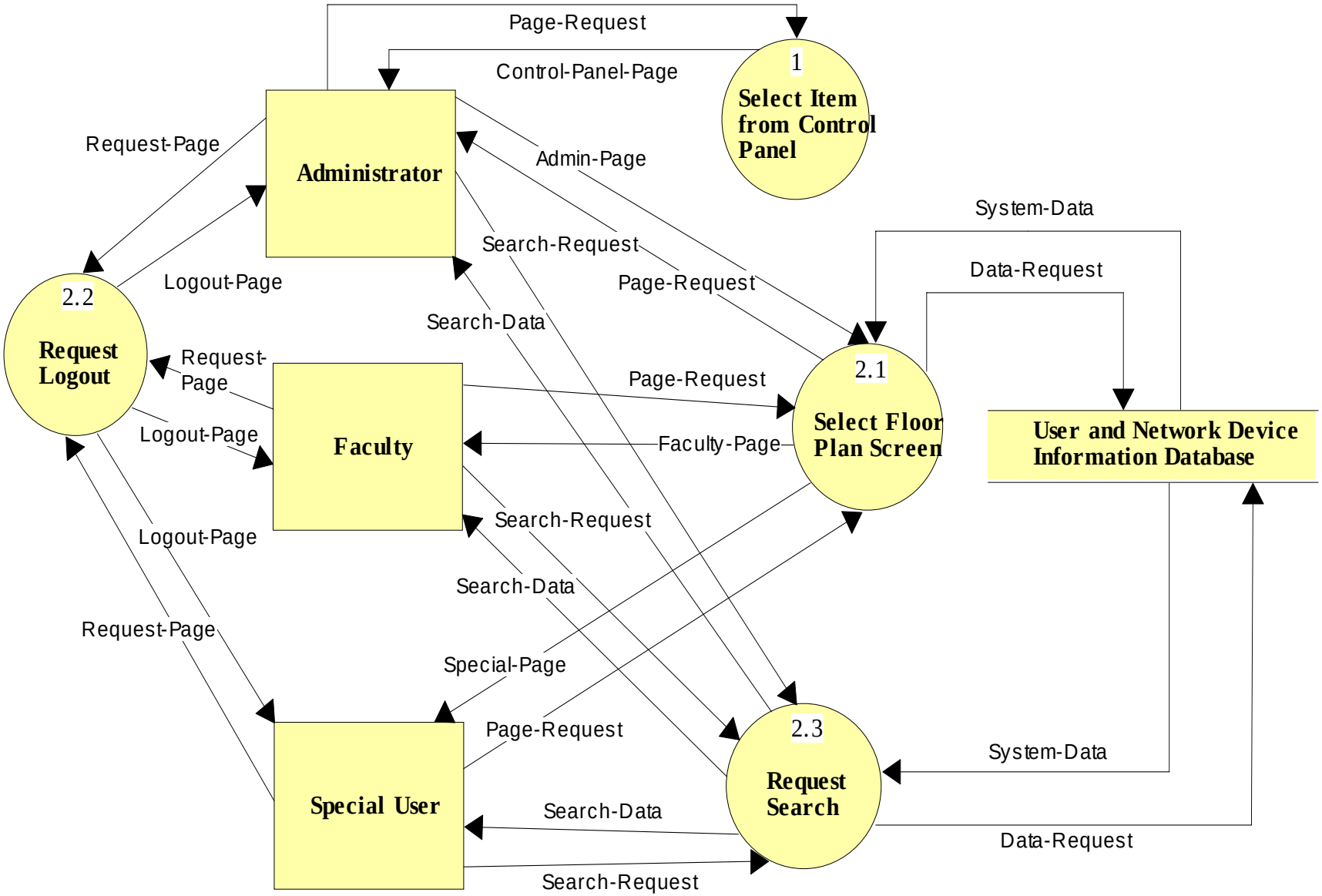


Level 0 Diagram: This is an expansion of the "Virtual Device Network Mapping System" that was shown in the Context Diagram.

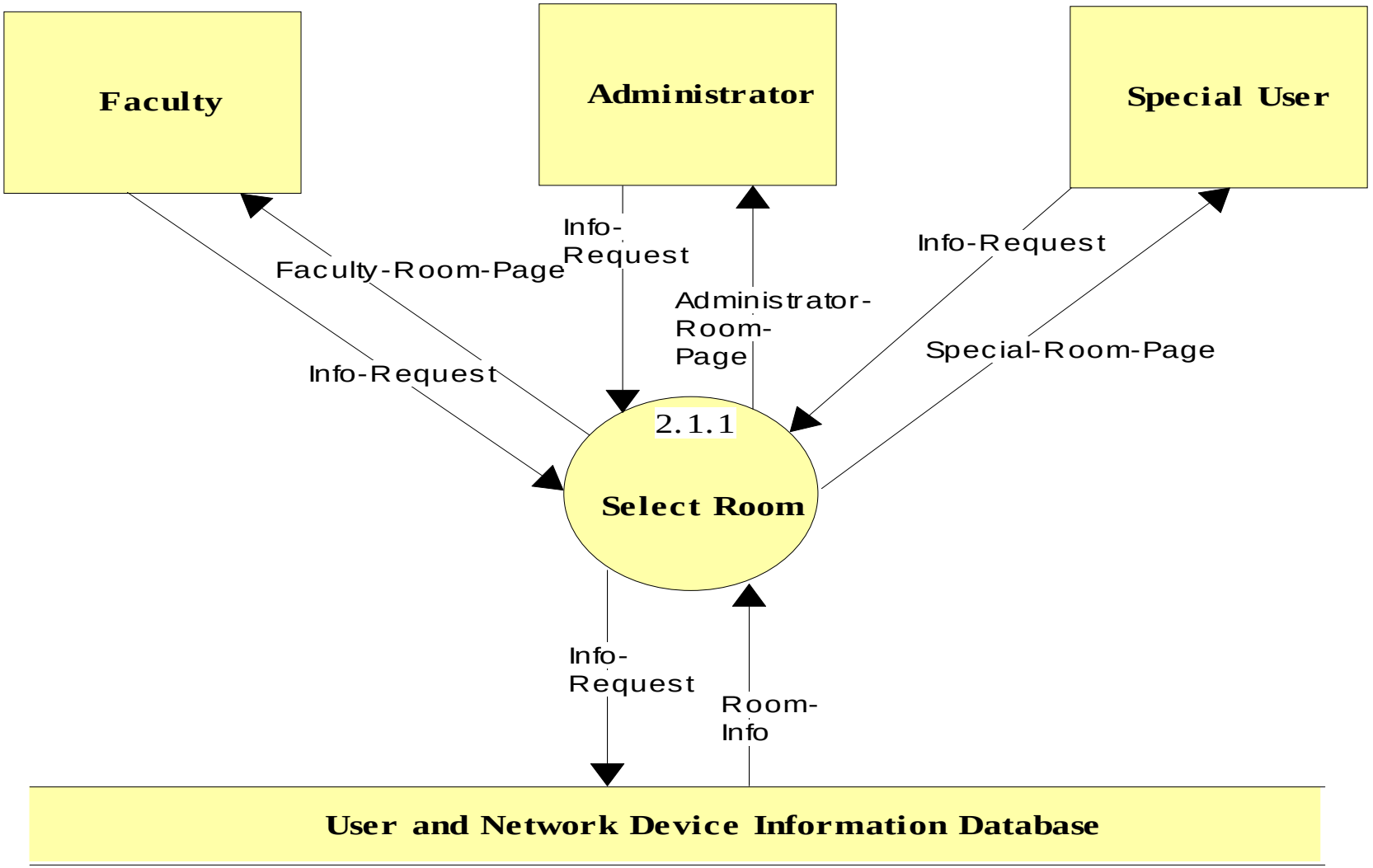
Select Item from Control Panel



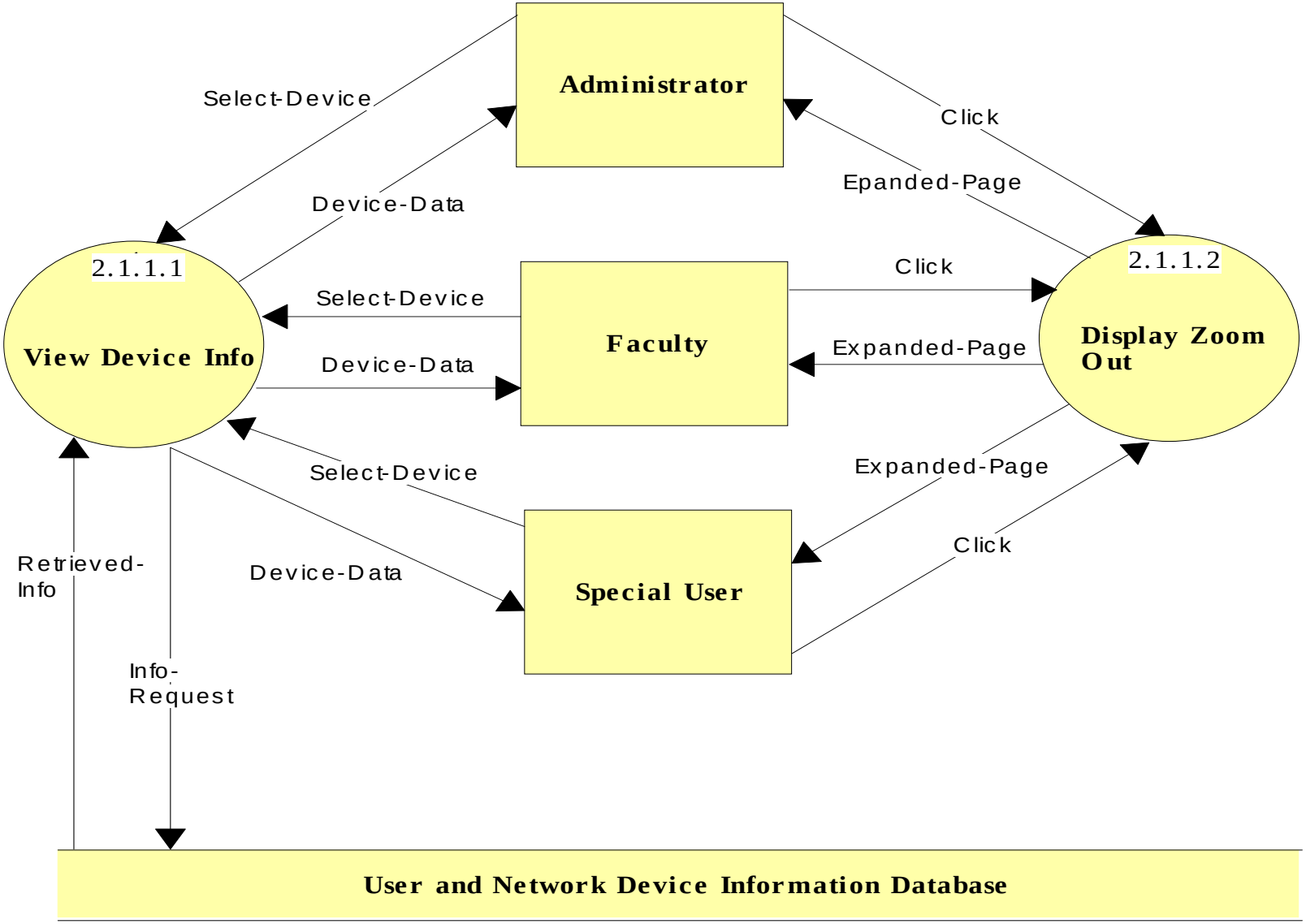
The Select Item from Control Panel diagram is a Level 1 Diagram. It shows the processes an Administrator can perform.



Manage User Request: This is a Level 2 diagram that shows the processes for all the different users.



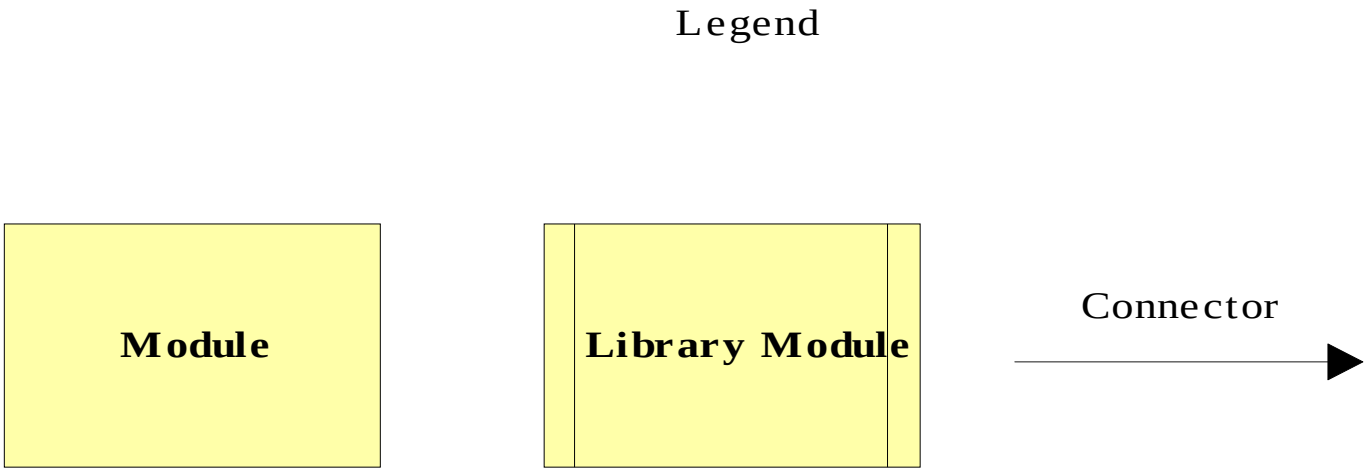
Floor Plan/Permissions Screen: This is shows the process of selecting a room after a floor has been selected.



Room Select Screen: This shows the processes of selecting a device for information or going back to a higher level of display.

Section 2: Architectural Design Specification

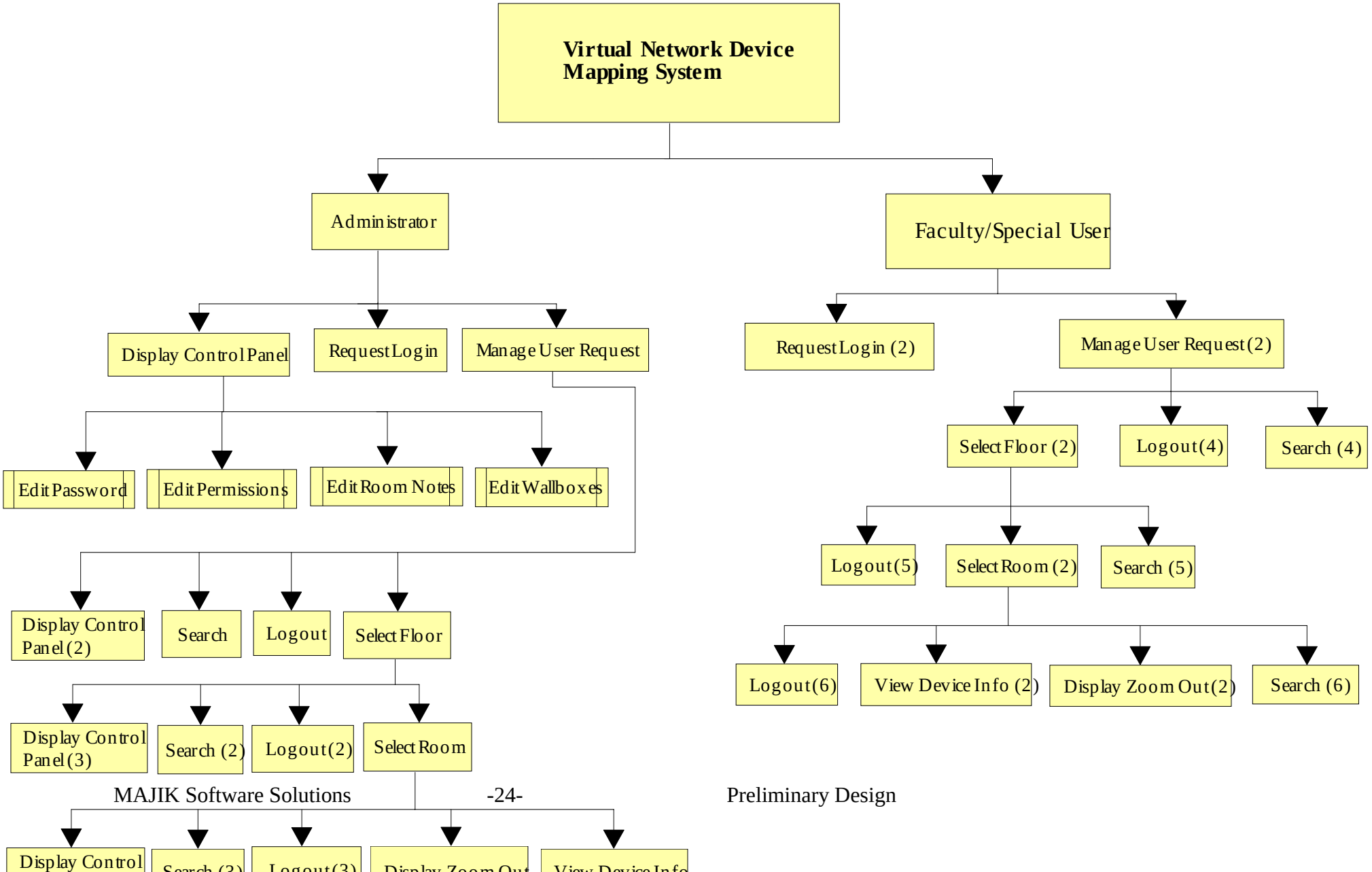
2.1 Structure Diagram



A **Module** represents an instruction that carries out an operation.

A **Library Module** behaves in the same manner every time that it is called upon.

Structure Diagram



2.2 Use Cases

The Virtual Network Device Mapping System will service three users.

The Administrator user will have full access to all features of the software, including the ability to view and edit all information regarding each device on the network. The Administrator user will manage all other user accounts.

A Faculty/Staff user will only have the option to view information about devices pertaining to them (i.e. their office and/or classrooms, etc.). The Faculty/Staff user will have no editing capability.

The Special user's use of the system will vary. The Special user will be granted use of certain features of the system by the administrator as needed, including extended view of information about devices and possible editing capabilities.

2.3 Functional Requirements Inventory

The following list outlines the required functionality to be included in the final solution. The requirements are listed according to user case and then by screens the user will view.

General:

The Virtual Network Device Mapping System is web-based.

Administrator User:

The Administrator user will have an account.

The Administrator user will have a username and password.

The Administrator will establish usernames and passwords for other users.

Login Screen:

The user will log in with correct username and password.

An incorrect login will provide an appropriate error message.

Welcome Screen:

The user will have access to a control panel on the welcome screen.

The user will be able to perform a search for certain devices or a specific device based on indicated search criteria.

The user will be able to select a floor of Roger Bacon Hall from a menu to view a floor plan layout.

The user will be able to select a floor of Morrell Science Center from a menu to view a floor plan layout.

The user will be able to logout from the welcome screen by clicking the "Logout" link.

Control Panel Index Screen:
The user will be able to change user passwords in the control panel.

The user will be able to change user permissions for devices in the control panel.

The user will be able to insert notes pertaining to a specific room or devices within a room.

The user will be able to log out from the control panel index screen.

User Control Panel Screen:
The Administrator user will be able to choose a user for which the password is to be changed.

The Administrator will enter a new password for the chosen user.

The Administrator will submit changes.

A message will appear indicating a that a change has been accepted.

The Administrator user will be able to log out from the user control panel screen.

User Permissions Control Panel Screen:
The Administrator will be able to choose a user for which the permissions are to be set.

The Administrator will be able to search for or choose a device or set of devices for which the user’s permissions are to apply to.

The Administrator will be able to choose the permission level for the user with reference to the chosen device(s): read or restrict.

The Administrator will submit the changes.

A message will appear indicating that a change has been accepted.

The Administrator user will be able to log out from the user permissions control panel screen.

Room Notes Control Panel Screen:
The Administrator user will be able to choose a building and floor for which the room is in.

The Administrator will be able to enter a room number for which to add notes.

The Administrator will be able to add notes into a text box for the chosen room.

The Administrator will submit the changes.

A message will appear indicating that a change has been accepted.

The Administrator user will be able to log out from the room notes control panel screen.

Floor Plan Screen:
A floor plan for the chosen floor will be displayed on the screen.

The building name and floor number will be displayed on the screen.

The Administrator user will be able to access the control panel from this screen.

Administrator user will be able to view information about all rooms and devices on the floor.

The Administrator will be able to choose a room from the floor plan to view a detailed room layout.

The Administrator user will be able to log out from the floor plan screen.

The Administrator user will be able to choose a different floor of either Roger Bacon Hall or Morrell Science Center from a drop down menu.

Room Layout Screen:
A room layout will be displayed for the selected room.

The existence and location of devices within the room will be indicated in the layout.

The building name, floor number, and room number will be displayed on the screen.

The Administrative user will be able to zoom out to the floor level diagram to which the room belongs.

The Administrator user will be able to choose a device within the room to view the information pertaining to that device.

The information for a specific device will appear below the room layout in a text box.

Any available notes for the selected room will be displayed on the screen for easy reference.

A legend will be displayed below the layout to denote the meaning of symbols in the layout.

The Administrator user will be able to log out from the room layout screen.

Search Screen:

The Administrator user will be able to search for a device on the following criteria:

- Asset Tag Number
- Priority
- User
- User Type
- Department
- VP Code
- Building
- Room
- Manufacturer
- Model
- Equipment Type
- Monitor Type
- Purchase Year
- Installed Date
- Purchase Order Number
- CPU
- Speed
- Disk
- Memory
- MAC Address
- Serial Number

Summarized search results will be displayed on the same screen.

Search results will be selectable to view more detailed results.

When selected, detailed search results will be displayed in the room layout view.

Faculty/Staff User:

The Faculty/Staff user will have an account established by the Administrator.

The Faculty/Staff user will have a username and password.

Login Screen:

The user will log in with correct username and password.

An incorrect login will provide an appropriate error message.

Welcome Screen:

The user will be able to perform a search for certain devices or a specific device based on indicated search criteria.

The user will be able to select a floor of Roger Bacon Hall from a menu to view a floor plan layout.

The user will be able to select a floor of Morrell Science Center from a menu to view a floor plan layout.

The user will be able to logout from the welcome screen by clicking the "Logout" link.

Floor Plan Screen:

A floor plan for the chosen floor will be displayed on the screen.

The building name and floor number will be displayed on the screen.

Faculty/Staff user will be able to view information about limited rooms and devices on the floor.

Rooms available for viewing will be highlighted so a Faculty/Staff user is aware of which rooms can be selected.

The Faculty/Staff will be able to choose a room from the floor plan to view a detailed room layout.

The Faculty/Staff user will be able to log out from the floor plan screen.

The Faculty/Staff user will be able to choose a different floor of either Roger Bacon Hall or Morrell Science Center from a drop down menu.

Room Layout Screen:

A room layout will be displayed for the selected room.

The existence and location of devices within the room that will be indicated in the layout.

The building name, floor number, and room number will be displayed on the screen.

The Faculty/Staff user will be able to zoom out to the floor level diagram to which the room belongs.

The Faculty/Staff user will be able to choose certain devices within the room to view the information pertaining to that device.

The information for a specific device will appear below the room layout in a text box.

Any available notes for the selected room will be displayed on the screen for easy reference.

A legend will be displayed below the layout to denote the meaning of symbols in the layout.

The Faculty/Staff user will be able to log out from the room layout screen.

Search Screen:

The Faculty/Staff user will be able to do a search for a device on the following criteria:

- Asset Tag Number
- Priority
- User
- User Type
- Department
- VP Code
- Building
- Room
- Manufacturer
- Model
- Equipment Type
- Monitor Type
- Purchase Year
- Installed Date
- Purchase Order Number
- CPU
- Speed
- Disk
- Memory
- MAC Address
- Serial Number

Search results will be limited to what the user has permissions to view.

Summarized search results will be displayed on the same screen.

Search results will be selectable to view more detailed results.

When selected, detailed search results will be displayed in the room layout view.

Special User:

The Special user will have an account established by the Administrator.

The Special user will have a username and password.

The Special user will have access to any feature the Administrator user grants them, up to and including administrative functions.

2.4 Logical Data Dictionary

Faculty-Room-Page
- Locations:
- Level 2.1.1 — Destination: Faculty User
  Source: User and Network Device Information Database

Administrator-Room-Page
- Locations:
- Level 2.1.1 — Destination: Administrator User
  Source: User and Network Device Information Database

Special-Room-Page
- Locations:
- Level 2.1.1 — Destination: Special User
  Source: User and Network Device Information Database

Admin-Login-Page
- Locations:
- Level 0 — Destination: Administrator
  Source: Request Login

Faculty-Login-Page
- Locations:
- Level 0 — Destination: Faculty
  Source: Request Login

Special-Login-Page

Locations:
Level 0 Destination: Special User
Source: Request Login

Special-Page
Locations:
Level 0 Destination: Special User
Source: Manage User Request
Level 2.1 Destination: Special User
Source: Select Floor Plan Screen

Faculty-Page
Locations:
Level 0 Destination: Faculty
Source: Manage User Request
Level 2.1 Destination: Faculty
Source: Select Floor Plan Screen

Administrator-Page
Locations:
Level 0 Destination: Administrator
Source: Manage User Request
Level 2.1 Destination: Administrator
Source: Select Floor Plan Screen

Control-Panel-Page
Locations:
Level 0 Destination: Administrator
Source: Select Item from Control Panel
Level 1.1 Destination: Administrator
Source: Click Control Panel Button
Level 2.1 Destination: Administrator
Source: Select Item from Control Panel

System-Data
Locations:
Level 0 Destination: Manage User Request
Source: User and Network Device Information Database
Level 2.1 Destination: Select Floor Plan Screen
Source: User and Network Device Information Database
Level 2.1 Destination: Request Search
Source: User and Network Device Information Database

Logout-Page

Locations:

Level 2.1 Destination: Administrator
Destination: Faculty
Destination: Special User
Source: Request-Logout

Search-Data

Locations:

Level 2.1 Destination: Administrator
Destination: Faculty
Destination: Special User
Source: Request Search

Device-Data

Locations:

Level 2.1.1.1 Destination: Administrator
Destination: Faculty
Destination: Special User
Source: View Device Info

Retreived-Info

Locations:

Level 2.1.1.1 Destination: View Device Info
Source: User and Network Device Information Database

Password-Page

Locations:

Level 1.1 Destination: Administrator
Source: Edit Password

Permissions-Page

Locations:

Level 1.1 Destination: Administrator
Source: Edit Permissions

Room-Notes-Page

Locations:

Level 1.1 Destination: Administrator
Source: Edit Room Notes

Page

Locations:

Level 1.1 Destination: Administrator
Source: Edit Wall boxes

Password-Data

Locations:
Level 1.1 Destination: Edit Password
Source: User and Network Device Information Database

Permissions-Data
Locations:
Level 1.1 Destination: Edit Permissions
Source: User and Network Device Information Database

Room-Note-Data
Locations:
Level 1.1 Destination: Edit Room Note
Source: User and Network Device Information Database

Wall box-Data
Locations:
Level 1.1 Destination: Edit Wall box
Source: User and Network Device Information Database

2.5 Logical Data Stores

The following information presents a preliminary description of the data stored in the Virtual Network Device Mapping System database. The data is presented in a layout of the table structure. Primary Keys are underlined.

Table: User

Fields:

Lname: CHAR(12)
-User's last name
Fname: CHAR(12)
-User's first name
Building: CHAR(3)
-name of the building which the user's office or room is located
Room_Num: VARCHAR(5)
-number of the room which the user's office or room is located

Table: Room

Fields:

Num: VARCHAR(5)
- The room number
Building: CHAR(3)
- The building the room is found in
Department: CHAR(15)
- The department the room is used by
Type: CHAR(10)
- The type of room; i.e. lecture, lab, etc...
EEC: CHAR(1)

- Indicates if the room is an Electronically Enhanced Classroom - Y/N

Table: Machine

Fields:

Id: INTEGER
- A unique identifier

Host_Name: VARCHAR(30)
- The hostname of the machine

IP_Address: VARCHAR(15)
- The IP Address of the machine

MAC_Address: VARCHAR(20)
- The MAC Address of the machine

Asset_Tag: INTEGER
- The IT&S Asset Tag value

Serial_Num: VARCHAR(20)
- The machine's serial number

Department: CHAR(15)
- The department to which the machine belongs (the sub-network)

Building: CHAR(3)
- The building in which the machine is located

Room: VARCHAR(5)
- The room in which the machine is located

CPU: VARCHAR(6)
- The CPU type

Speed: VARCHAR(6)
- The speed of the processor

Disk: VARCHAR(5)
- The disk size

Memory: VARCHAR(5)
- The memory size

User: CHAR(12)
- The name of the primary user

User_Type: CHAR(15)
- The type of primary user; i.e. student, faculty, etc...

Priority: CHAR(1)
- Priority level; L-low; M- medium; H-High

PO_Num: VARCHAR(15)
- Purchase order number

VP_Code: CHAR(4)
- Always VPAA for Vice President of Academic Affairs

Manufacturer: CHAR(15)
- The name of the manufacturing company

Model: VARCHAR(15)
- The model number of the machine

Equipment_Type: CHAR(20)
- The type of equipment; i.e. PC, Mac, Laptop, Wireless Access Point, etc.

Monitor_Type: CHAR(5)

- The type of monitor; i.e. LCD, CRT

Purchase_Year: DATE

- The date the machine/equipment was purchased

Installed_Date: DATE

- The date the machine/equipment was installed

Comments: VARCHAR(100)

- Comments about the machine/equipment

2.6 Design Environment Information

The machines we will be using to do our development work, and their specifications, as well as the software that we will be using to develop our programs are listed here.

Server:

Oracle, version 10g
Mysql, version 4.1.14
PHP, version 4.3.11
Apache, version 2.0.46

Browser Environment:

Microsoft Internet Explorer version 6.0.2800.1106
Mozilla Firefox version 1.0 preview release
Mozilla Firefox version 1.0
Apple Safari 1.2

Software:

Adobe Acrobat version 5.0.5
Adobe Reader version 6.0.0
Microsoft Office Word 2000 9.0.4402
Microsoft Office PowerPoint 2000 SR1 9.0.3821
WinSCP version 3.1.0 (Build 165)
Putty Release 0.53b
Macromedia Dreamweaver MX Education Edition 6.0
Macromedia Fireworks MX Education Edition 6.0
Visible Analyst Education Edition version 7.5.5
Microsoft Project 2000 9.0.2001.0219SR1
Microsoft Windows 2000 5.00.2195 Service Pack 3
Microsoft Windows XP Professional Version 2002 Service Pack 2

Systems:

Dell Dimension Dim4550
Intel Pentium 4 2.40 GHz
512 MB of RAM

Macintosh iMac
2.0GHz Intel Core 2 Duo
1GB of RAM

Section 3: Testing Requirements

To test the system, we will perform four testing stages. The first is unit testing where each component is tested individually for errors. The second stage is integration testing where we will ensure that components interact correctly to perform higher functions. System testing, the third stage, involves ensuring that all the features of the system meet the functional requirements previously defined in the Requirements Specification. Finally, acceptance testing will be carried out to ensure that the delivered system meets all of the requirements as specified by our clients.

3.1 Unit Test Example

MAJIK Software Solutions

Virtual Network Device Mapping System

Unit Test Catalog

Test Result		Test Number	Unit Test Name
P	F	1	Login Screen
P	F	2	Administrator Welcome Screen
P	F	3	Faculty/Staff Welcome Screen
P	F	4	Roger Bacon Floor 1 Layout Screen
P	F	5	Roger Bacon Floor 2 Layout Screen
P	F	6	Roger Bacon Floor 3 Layout Screen
P	F	7	Roger Bacon Floor 4 Layout Screen
P	F	8	Morrell Science Center Floor 1 Layout Screen
P	F	9	Morrell Science Center Floor 2 Layout Screen
P	F	10	Morrell Science Center Floor 3 Layout Screen
P	F	11	Room View Screen
P	F	12	Administrator Control Panel Index Screen
P	F	13	Manage Users Control Panel Screen
P	F	14	Permissions Control Panel Screen
P	F	15	Room Notes Control Panel Screen
P	F	16	Search Screen

P = Pass
F = Fail

MAJIK Software Solutions

Virtual Network Device Mapping System

Test Number 1 - Login Screen Test Cases

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
1.1	Index Page Loads	Correct page load.	N/A	Index page loads and all components are displayed on the screen.		
1.2	Correct Login - Administrator	Log in with valid administrator account and password.	Administrator username and password	Welcome screen for administrators loads.		
1.3	Correct Login - Faculty/Staff	Log in with valid faculty/staff account and password	Faculty/Staff username and password	Welcome screen for faculty/staff loads.		
1.4	Incorrect Username Login	Login with invalid username.	Username	Message generated indicating invalid username.		
1.5	Incorrect Password Login	Log in with invalid password.	Password	Message generated indicating invalid password.		
1.6	Login with Empty Fields	Login with username and password fields empty.	N/A	Message generated indicating invalid username or password.		
1.7	Click Clear Button	User clicks clear button.	N/A	Username and password field are cleared of contents.		
1.8	Click Link to MAJIK Website	User clicks link to the MAJIK website.	N/A	MAJIK Team website loads.		
1.9	Click Link to Software Engineering Website	User clicks link to the Software Engineering website.	N/A	Software Engineering website loads.		
					Summary of Tests for this Unit	P

3.2 Acceptance Test

The acceptance test will ensure that all features of the functional requirements are met as follows.

General:

The Virtual Network Device Mapping System is web-based.

Administrator User:

The Administrator user will have an account.

The Administrator user will have a username and password.

The Administrator will establish usernames and passwords for other users.

Login Screen:

The user will log in with correct username and password.

An incorrect login will provide an appropriate error message.

Welcome Screen:

The user will have access to a control panel on the welcome screen.

The user will be able to perform a search for certain devices or a specific device based on indicated search criteria.

The user will be able to select a floor of Roger Bacon Hall from a menu to view a floor plan layout.

The user will be able to select a floor of Morrell Science Center from a menu to view a floor plan layout.

The user will be able to logout from the welcome screen by clicking the "Logout" link.

Control Panel Index Screen:

The user will be able to change user passwords in the control panel.

The user will be able to change user permissions for devices in the control panel.

The user will be able to insert notes pertaining to a specific room or devices within a room.

The user will be able to log out from the control panel index screen.

User Control Panel Screen:
The Administrator user will be able to choose a user for which the password is to be changed.

The Administrator will enter a new password for the chosen user.

The Administrator will submit changes.

A message will appear indicating a that a change has been accepted.

The Administrator user will be able to log out from the user control panel screen.

User Permissions Control Panel Screen:
The Administrator will be able to choose a user for which the permissions are to be set.

The administrator will be able to search for or choose a device or set of devices for which the user's permissions are to apply to.

The Administrator will be able to choose the permission level for the user with reference to the chosen device(s): read or restrict.

The Administrator will submit the changes.

A message will appear indicating that a change has been accepted.

The Administrator user will be able to log out from the user permissions control panel screen.

Room Notes Control Panel Screen:
The Administrator user will be able to choose a building and floor for which the room is in.

The Administrator will be able to enter a room number for which to add notes.

The Administrator will be able to add notes into a text box for the chosen room.

The Administrator will submit the changes.

A message will appear indicating that a change has been accepted.

The Administrator user will be able to log out from the room notes control panel screen.

Floor Plan Screen:
A floor plan for the chosen floor will be displayed on the screen.

The building name and floor number will be displayed on the screen.

The Administrator user will be able to access the control panel from this screen.

Administrator user will be able to view information about all rooms and devices on the floor.

The Administrator will be able to choose a room from the floor plan to view a detailed room layout.

The Administrator user will be able to log out from the floor plan screen.

The Administrator user will be able to choose a different floor of either Roger Bacon Hall or Morrell Science Center from a drop down menu.

Room Layout Screen:
A room layout will be displayed for the selected room.

The existence and location of devices within the room will be indicated in the layout.

The building name, floor number, and room number will be displayed on the screen.

The Administrative user will be able to zoom out to the floor level diagram to which the room belongs.

The Administrator user will be able to choose a device within the room to view the information pertaining to that device.

The information for a specific device will appear below the room layout in a text box.

Any available notes for the selected room will be displayed on the screen for easy reference.

A legend will be displayed below the layout to denote the meaning of symbols in the layout.

The Administrator user will be able to log out from the room layout screen.

Search Screen:
The Administrator user will be able to search for a device on the following criteria:

- Asset Tag Number
- Priority
- User
- User Type
- Department
- VP Code
- Building
- Room
- Manufacturer
- Model
- Equipment Type
- Monitor Type
- Purchase Year
- Installed Date
- Purchase Order Number
- CPU
- Speed
- Disk
- Memory
- MAC Address
- Serial Number

Summarized search results will be displayed on the same screen.

Search results will be selectable to view more detailed results.

When selected, detailed search results will be displayed in the room layout view.

Faculty/Staff User:

The Faculty/Staff user will have an account established by the Administrator.

The Faculty/Staff user will have a username and password.

Login Screen:
The user will log in with correct username and password.

An incorrect login will provide an appropriate error message.

Welcome Screen:

The user will be able to perform a search for certain devices or a specific device based on indicated search criteria.

The user will be able to select a floor of Roger Bacon Hall from a menu to view a floor plan layout.

The user will be able to select a floor of Morrell Science Center from a menu to view a floor plan layout.

The user will be able to logout from the welcome screen by clicking the "Logout" link.

Floor Plan Screen:
A floor plan for the chosen floor will be displayed on the screen.

The building name and floor number will be displayed on the screen.

Faculty/Staff user will be able to view information about limited rooms and devices on the floor.

Rooms available for viewing will be highlighted so a Faculty/Staff user is aware of which rooms can be selected.

The Faculty/Staff will be able to choose a room from the floor plan to view a detailed room layout.

The Faculty/Staff user will be able to log out from the floor plan screen.

The Faculty/Staff user will be able to choose a different floor of either Roger Bacon Hall or Morrell Science Center from a drop down menu.

Room Layout Screen:
A room layout will be displayed for the selected room.

The existence and location of devices within the room that will be indicated in the layout.

The building name, floor number, and room number will be displayed on the screen.

The Faculty/Staff user will be able to zoom out to the floor level diagram to which the room belongs.

The Faculty/Staff user will be able to choose certain devices within the room to view the information pertaining to that device.

The information for a specific device will appear below the room layout in a text box.

Any available notes for the selected room will be displayed on the screen for easy reference.

A legend will be displayed below the layout to denote the meaning of symbols in the layout.

The Faculty/Staff user will be able to log out from the room layout screen.

Search Screen:
The Faculty/Staff user will be able to do a search for a device on the following criteria:

- Asset Tag Number
- Priority
- User
- User Type
- Department
- VP Code
- Building
- Room
- Manufacturer
- Model
- Equipment Type
- Monitor Type
- Purchase Year
- Installed Date
- Purchase Order Number
- CPU
- Speed
- Disk
- Memory
- MAC Address
- Serial Number

Search results will be limited to what the user has permissions to view.

Summarized search results will be displayed on the same screen.

Search results will be selectable to view more detailed results.

When selected, detailed search results will be displayed in the room layout view.

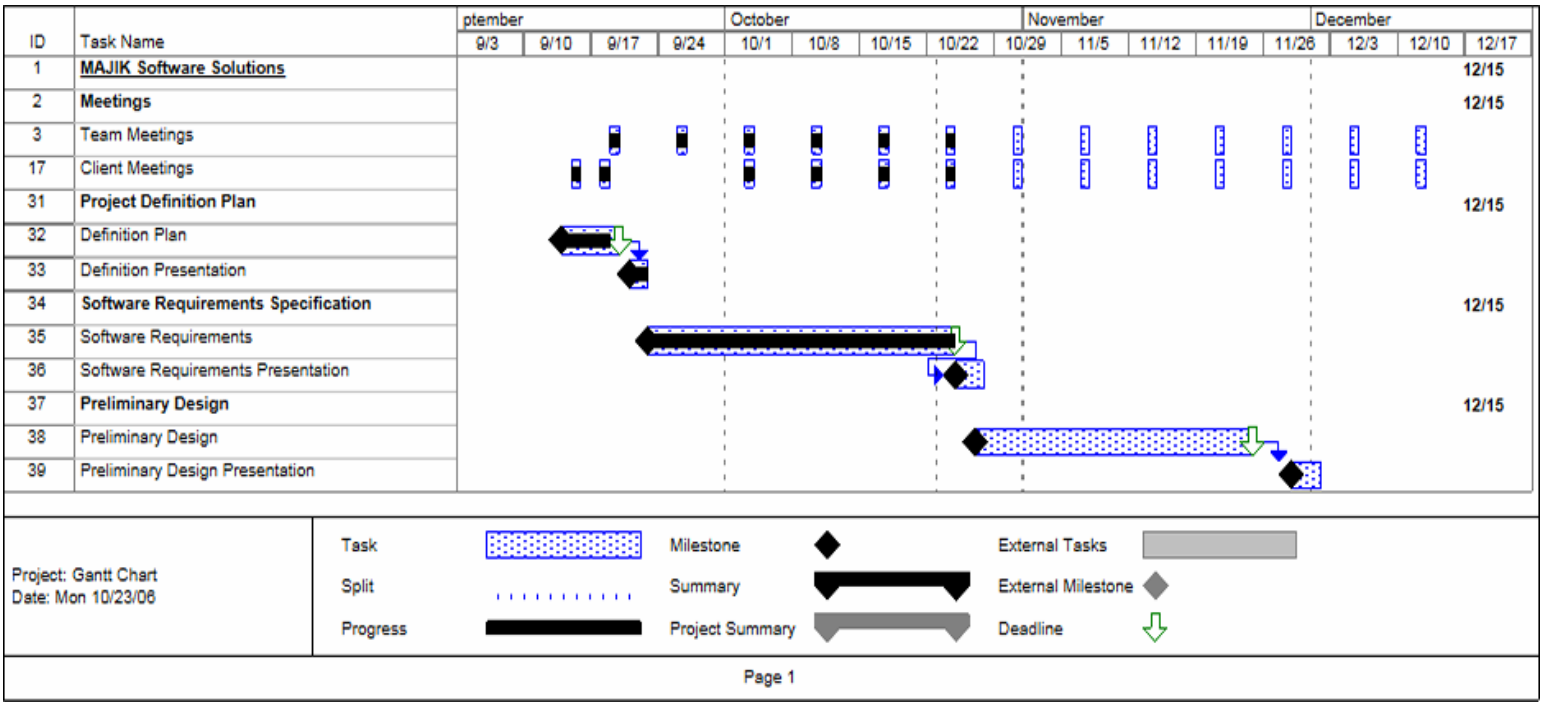
Special User:

The Special user will have an account established by the Administrator.

The Special user will have a username and password.

The Special user will have access to any feature the Administrator user grants them, up to and including administrative functions.

Section 4: Gantt Chart



Section 5: Glossary of Terms

CPU - Central Processing Unit – The processing component of a computer to process data.

Data Flow Diagram - A graphical breakdown of the processes and major flows of data that occur in the system.

Database – A collection of data organized to be readily available for use.

Gantt Chart - A chart that displays progress over time, in this case used to keep track of a project.

Linear Sequential Model / Classic Waterfall Model – A systematic, sequential approach to software development that progresses from this Software Plan to Requirement Specifications, Preliminary/Detailed, and finally Acceptance Tests.

MAC address - Media Access Control address, given to a device in a network. It consists of a 48-bit hexadecimal number (12 characters). The address is normally assigned to a device, such as a network card, when it is manufactured.

Network Device - A computer, peripheral or other related communications equipment attached to a network.

PHP – A scripting language useful in the creation of dynamic web pages.

Prototype – A rudimentary depiction of the design of the final product.

Virtual - Something which is a representation rather than the ‘real’ thing, thus ‘virtual reality’.