

Detailed Design

Requested by:

Mr. Eric Crossman

Assistant Systems & Operations Manager
Siena College
School of Science

Mr. Ken Swarner

Systems & Operations Manager
Siena College
School of Science

Virtual Network Device Mapping System

Prepared by:

MAJIK Software Solutions

Amanda Danko
Kevin Johnson
Ian Kost
Mark Riley

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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 at Siena College located in Roger Bacon and the Morrell Science Center. This document outlines the detailed design of our solution system.

Section 1: External Design Specifications

1.1 User Displays

Login Screen:

Virtual Network Device Mapping System

The Virtual Network Device Mapping System is a web-based application which graphically represents the layout of network devices within the Siena College School of Science. It gives the user a bird's eye view of individual floors, allowing them to select a room from that floor and view a detailed layout of the network devices in that room. Individual devices can then be selected to display comprehensive information about them.

User Name

Password

[Siena College](#) | [Computer Science Dept.](#) | [Software Engineering](#)

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:



Virtual Network Device Mapping System

The Virtual Network Device Mapping System is a web-based application which graphically represents the layout of network devices within the Siena College School of Science. It gives the user a bird's eye view of individual floors, allowing them to select a room from that floor and view a detailed layout of the network devices in that room. Individual devices can then be selected to display comprehensive information about them.

The User Name and/or Password you have entered is incorrect. Please try again.

User Name

Password

Login

Clear

[Siena College](#) | [Computer Science Dept.](#) | [Software Engineering](#)

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:

Control Panel
[Logout from Administrator](#)

Using the [Search Feature](#)


To access the Search feature simply click the link in the heading above. Or, to do so from any other page, click the "Search" button in the upper right-hand corner.

Devices can be searched for using any of the categories of information stored. Please note that although all of the categories are displayed, you do not have to fill in all of them. Whatever categories you fill in will be used, and those left blank will not be. This is meant to give you the greatest amount of flexibility possible in finding a device.

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.

Welcome, to the Virtual Network Device Mapping System. In order to get started, you have two options. You may either use the Search feature, as described in the box on the left, or select a floor from below.

To select a floor, first decide which building you wish to view, and then select a floor number from below it to display that floor plan. The floor plan will load on a new page which will give you the layout of the rooms on that floor and further directions. On all subsequent pages, you will be able to select floors from dropdown menus in the upper left-hand corner of the page. If you have any further questions, please visit our [HELP](#) page.




[1st Floor](#)

[2nd Floor](#)

[3rd Floor](#)

[4th Floor](#)



[1st Floor](#)

[2nd Floor](#)

[3rd Floor](#)

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:

Roger Bacon Floor # Morrell Floor # [Control Panel](#) [Search](#) [Logout from Administrator](#)

Roger Bacon Hall - 3rd Floor

The floor plan shows a central hallway with rooms on both sides. Rooms are color-coded: yellow for clickable and blue for non-clickable. The layout includes rooms 350, 344, 340, 338, 330, 322, 320, 318, 352, 348, 346, 332, 334, 328, 324, 312, 316, 314, 308, 306, 304, 302, 323, 321, 319, 317, 315, 313, 311, and a Women's restroom.

Rooms colored **yellow** may be clicked to display a detailed "Room View" which will show the layout of network devices in that room. Rooms colored **blue** are not viewable.

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:

Roger Bacon Floor # **1** Morrell Floor # **1** [Control Panel](#) [Search](#) [Logout from Administrator](#)

[Zoom Out to 3rd Floor View](#)

Roger Bacon Hall - 3rd Floor - Room #306

Legend

Computer:

Wall Box:

Printer:

Wireless Access Point (WAP):

Miscellaneous Device:

Door:

Room Notes

--Classroom used for Computer Science labs.

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
 Comments: n/a

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
  Purchase 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:

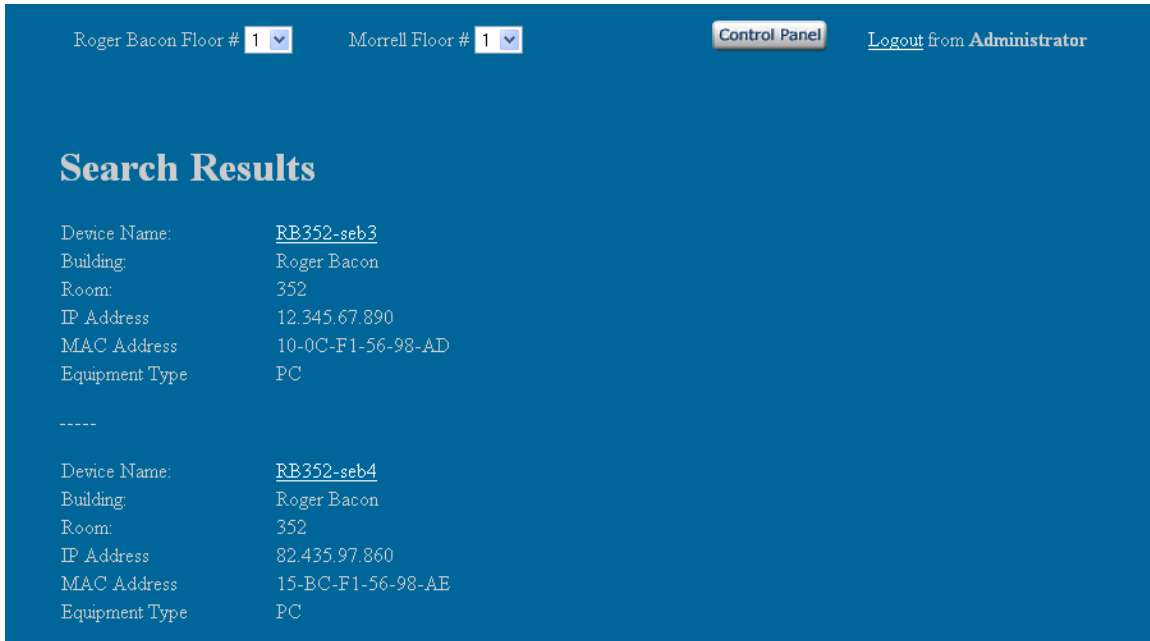
Roger Bacon Floor # Morrell Floor # [Control Panel](#) [Logout from Administrator](#)

Search

Device Name:	<input type="text"/>	Asset Tag #:	<input type="text"/>
User:	<input type="text"/>	User Type:	<input type="text"/>
MAC Address:	<input type="text"/>	IP Address:	<input type="text"/>
Building:	<input type="text" value="Roger Bacon"/>	Room:	<input type="text"/>
Equipment Type:	<input type="text"/>	Manufacturer:	<input type="text"/>
Model:	<input type="text"/>	VP Code:	<input type="text"/>
Monitor Type:	<input type="text"/>	Purchase Year:	<input type="text"/>
Installed Date:	<input type="text"/>	Purchase Order #:	<input type="text"/>
CPU:	<input type="text"/>	Speed:	<input type="text"/>
Disk:	<input type="text"/>	Memory:	<input type="text"/>
Department:	<input type="text"/>	Serial #:	<input type="text"/>
Priority:	<input type="text" value="L"/>		

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:



Roger Bacon Floor # Morrell Floor # [Control Panel](#) [Logout from Administrator](#)

Search Results

Device Name:	RB352-seb3
Building:	Roger Bacon
Room:	352
IP Address	12.345.67.890
MAC Address	10-0C-F1-56-98-AD
Equipment Type	PC

Device Name:	RB352-seb4
Building:	Roger Bacon
Room:	352
IP Address	82.435.97.860
MAC Address	15-BC-F1-56-98-AE
Equipment Type	PC

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:

The screenshot shows a web interface for an Administrator Control Panel. At the top, there are two dropdown menus for 'Roger Bacon Floor #' and 'Morrell Floor #', both set to '1'. To the right are a 'Search' button and a 'Logout from Administrator' link. The main heading is 'Administrator Control Panel'. Below this are three menu items: 'Passwords', 'Permissions', and 'Room Notes'. Each menu item has a corresponding description below it.

Roger Bacon Floor # 1 Morrell Floor # 1 Search Logout from Administrator

Administrator Control Panel

Passwords

Provides for the alteration of any User's password. Users can be selected from the drop down menu, and then a new password entered. A confirmation page will be displayed after the "Confirm" button has been selected.

Permissions

Allows limitation of what network devices individual users can view. The Administrator first searches for devices, which loads a new page. Then, devices can be chosen via a checkbox on each result. Once the devices are selected, the Administrator can choose a user from a drop down menu and set the user's permission for those devices to either "Read" or "Restrict." 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 alongside the layout of that room. Enter a room number, then enter the desired text in the box and press "Save." A confirmation page will be displayed.

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:

Roger Bacon Floor # 1 Morrell Floor # 1 Search Logout from Administrator

Administrator Control Panel

Passwords Permissions Room Notes

Edit Passwords

User Name Administrator

New Password

Confirm Clear

This screenshot shows the 'Administrator Control Panel' with a dark blue background. At the top, there are two dropdown menus for 'Roger Bacon Floor #' and 'Morrell Floor #', both set to '1'. To the right are a 'Search' button and a 'Logout from Administrator' link. Below this is the main title 'Administrator Control Panel' and three buttons: 'Passwords', 'Permissions', and 'Room Notes'. The 'Edit Passwords' section is active, showing a 'User Name' dropdown menu set to 'Administrator', a text input field for 'New Password', and two buttons: 'Confirm' and 'Clear'.

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:

Roger Bacon Floor # 1 Morrell Floor # 1 Search Logout from Administrator

Administrator Control Panel

Passwords Permissions Room Notes

Edit Passwords

Password successfully changed. [Click Here](#) to edit another password.

This screenshot shows the 'Administrator Control Panel' with a dark blue background. At the top, there are two dropdown menus for 'Roger Bacon Floor #' and 'Morrell Floor #', both set to '1'. To the right are a 'Search' button and a 'Logout from Administrator' link. Below this is the main title 'Administrator Control Panel' and three buttons: 'Passwords', 'Permissions', and 'Room Notes'. The 'Edit Passwords' section is active, displaying a confirmation message: 'Password successfully changed. Click Here to edit another password.' The 'Click Here' is a blue hyperlink.

Permissions Device Search:

The screenshot displays the 'Administrator Control Panel' with a dark blue background. At the top, there are two dropdown menus for 'Roger Bacon Floor #' and 'Morrell Floor #', both set to '1'. To the right is a 'Search' button and a link for 'Logout from Administrator'. Below the title, there are three tabs: 'Passwords', 'Permissions', and 'Room Notes'. The 'Permissions' tab is active. Underneath, the 'User Permissions' section contains a 'Search for Devices' form. This form includes fields for 'Device Name', 'Equipment Type', 'Building' (with a dropdown menu showing 'Roger Bacon'), and 'Room #'. A 'Search' button is located at the bottom left of the form.

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:

The screenshot shows the Administrator Control Panel with the following elements:

- Header: Roger Bacon Floor # **1** Morrell Floor # **1** Search Logout from Administrator
- Navigation: Passwords Permissions Room Notes
- Section: User Permissions
- Device List:
 - Device Name: RB352-seb3
Building: Roger Bacon
Room: 352
IP Address: 12.345.67.890
MAC Address: 10-0C-F1-56-98-AD
Equipment Type: PC
 -
 - Device Name: RB352-seb4
Building: Roger Bacon
- Form:

User Name:	User1
Permission:	<input type="radio"/> Read <input type="radio"/> Restrict
Confirm	

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:

Roger Bacon Floor # Morrell Floor # [Logout from Administrator](#)

Administrator Control Panel

Room Notes

Building :

Floor #:

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:

Roger Bacon Floor # Morrell Floor # [Logout from Administrator](#)

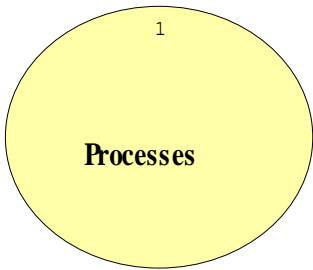
Administrator Control Panel

Room Notes

Room Note saved successfully. [Click Here](#) to add another note.

1.2 Data Flow Diagrams

Legend



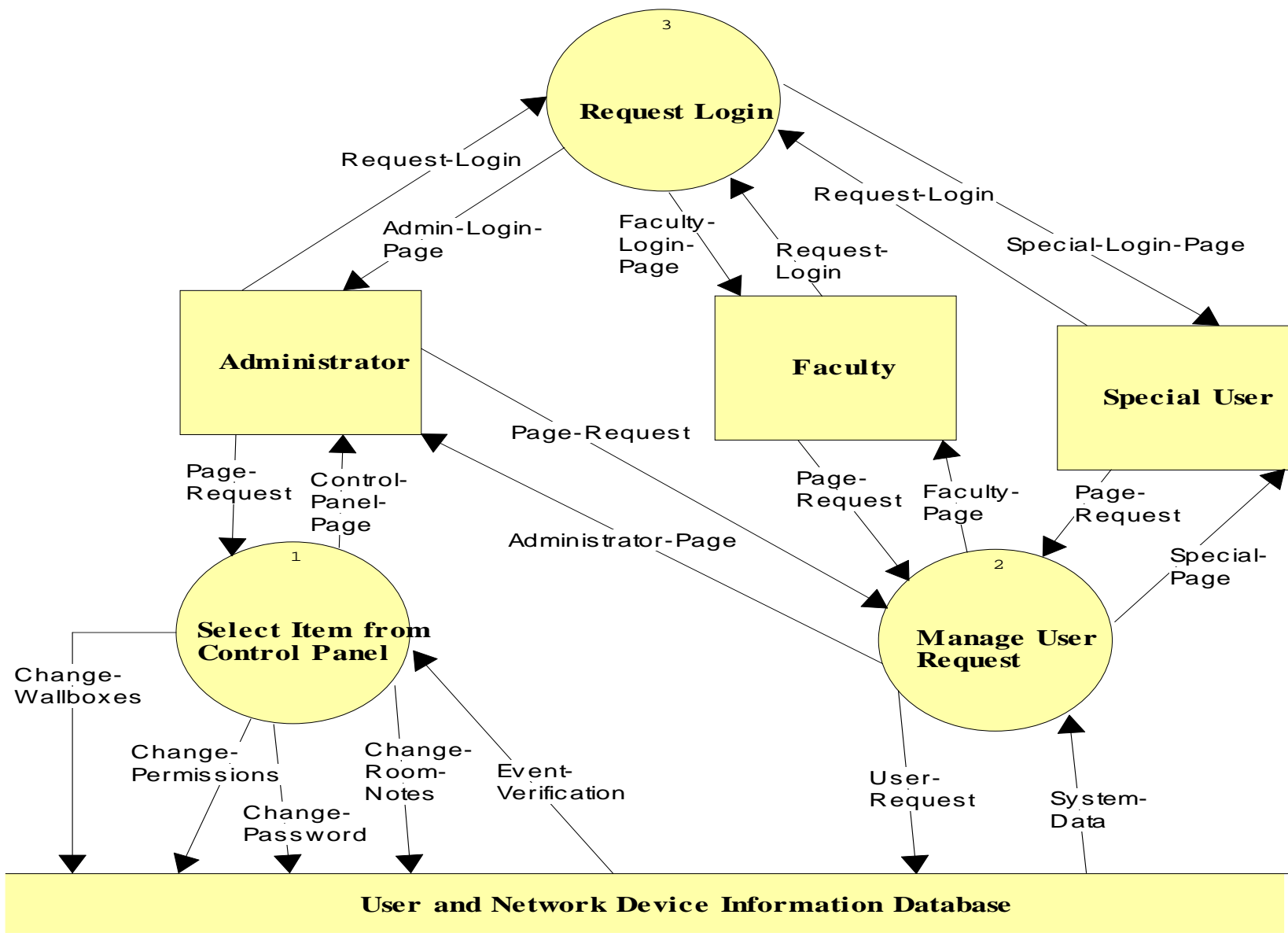
Legend for icons used in the Data Flow Diagrams.

Context Diagram

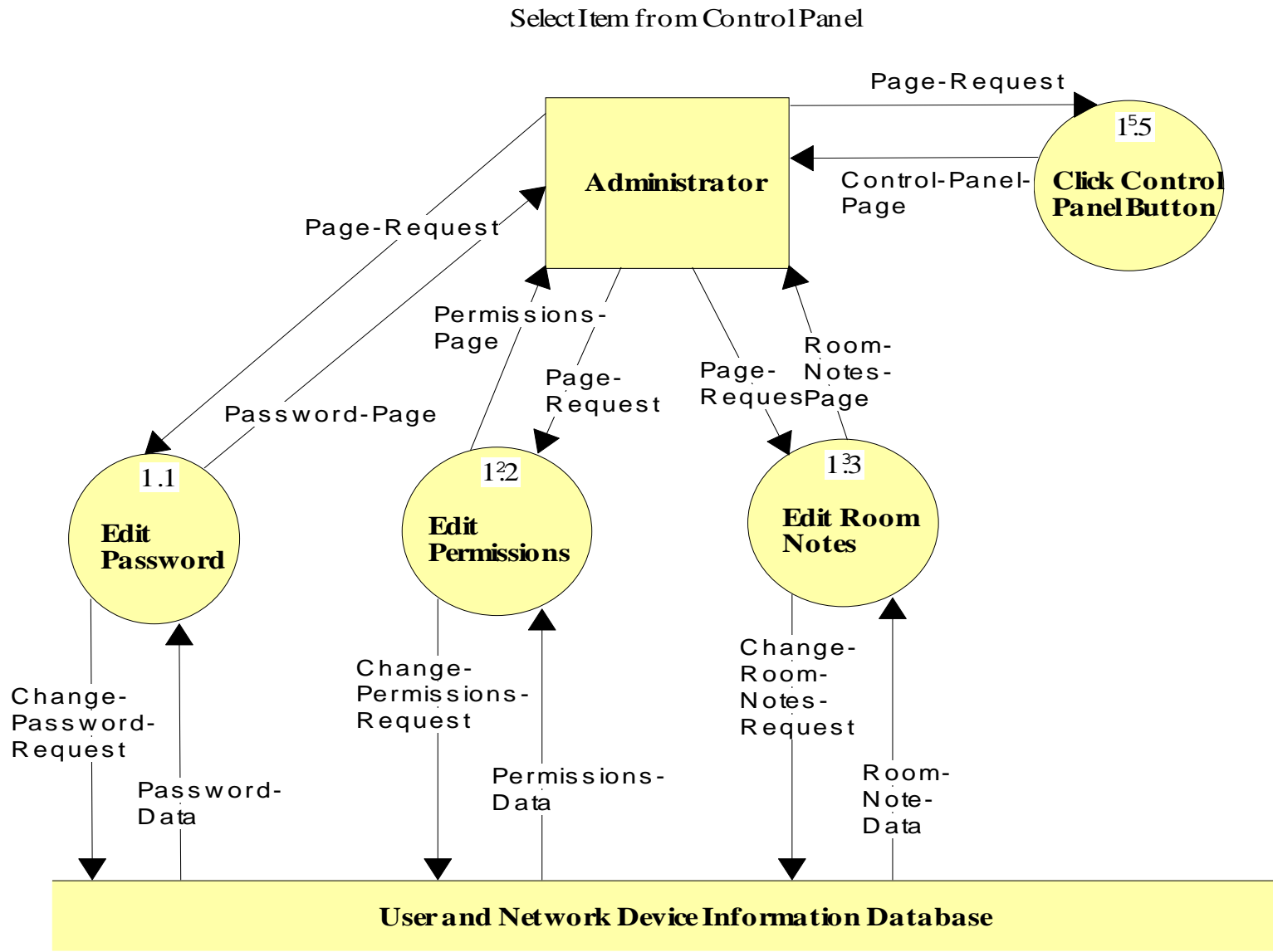


Context Diagram: It is the most basic diagram that shows the interaction between the user and the system.

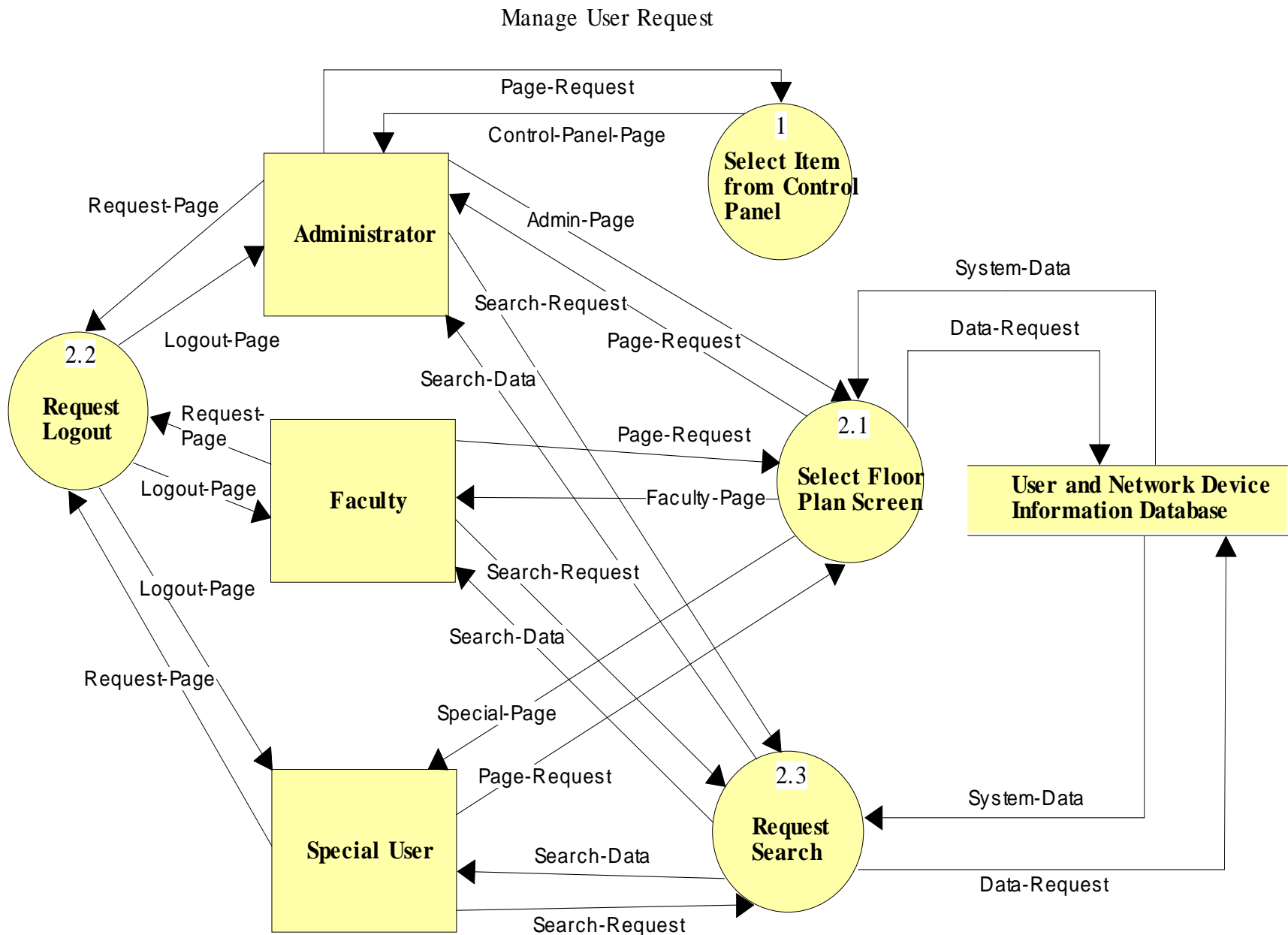
Level 0 Diagram



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

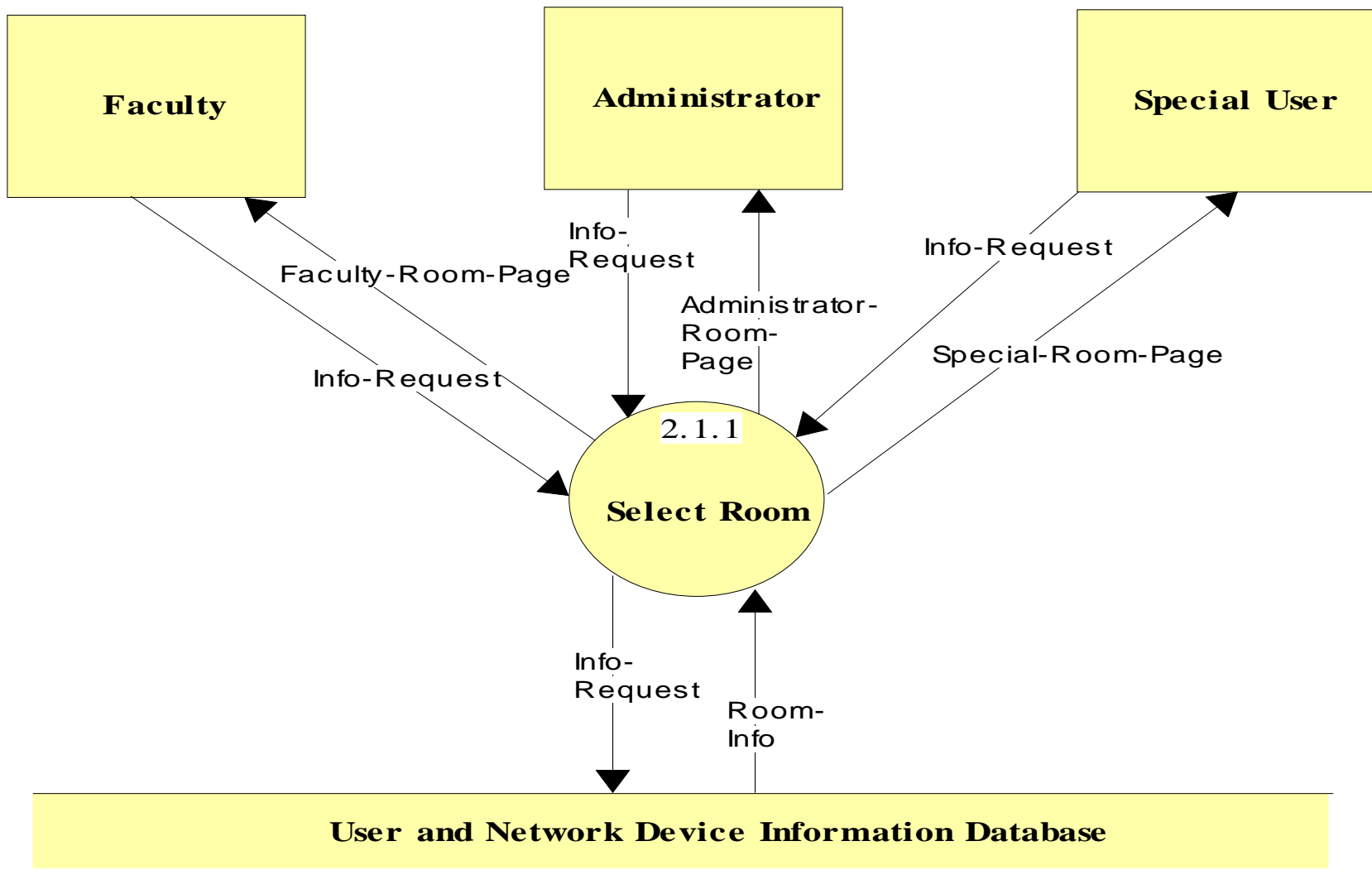


The **Select Item from Control Panel** diagram is a Level 1 Diagram. It shows the processes an Administrator can perform.



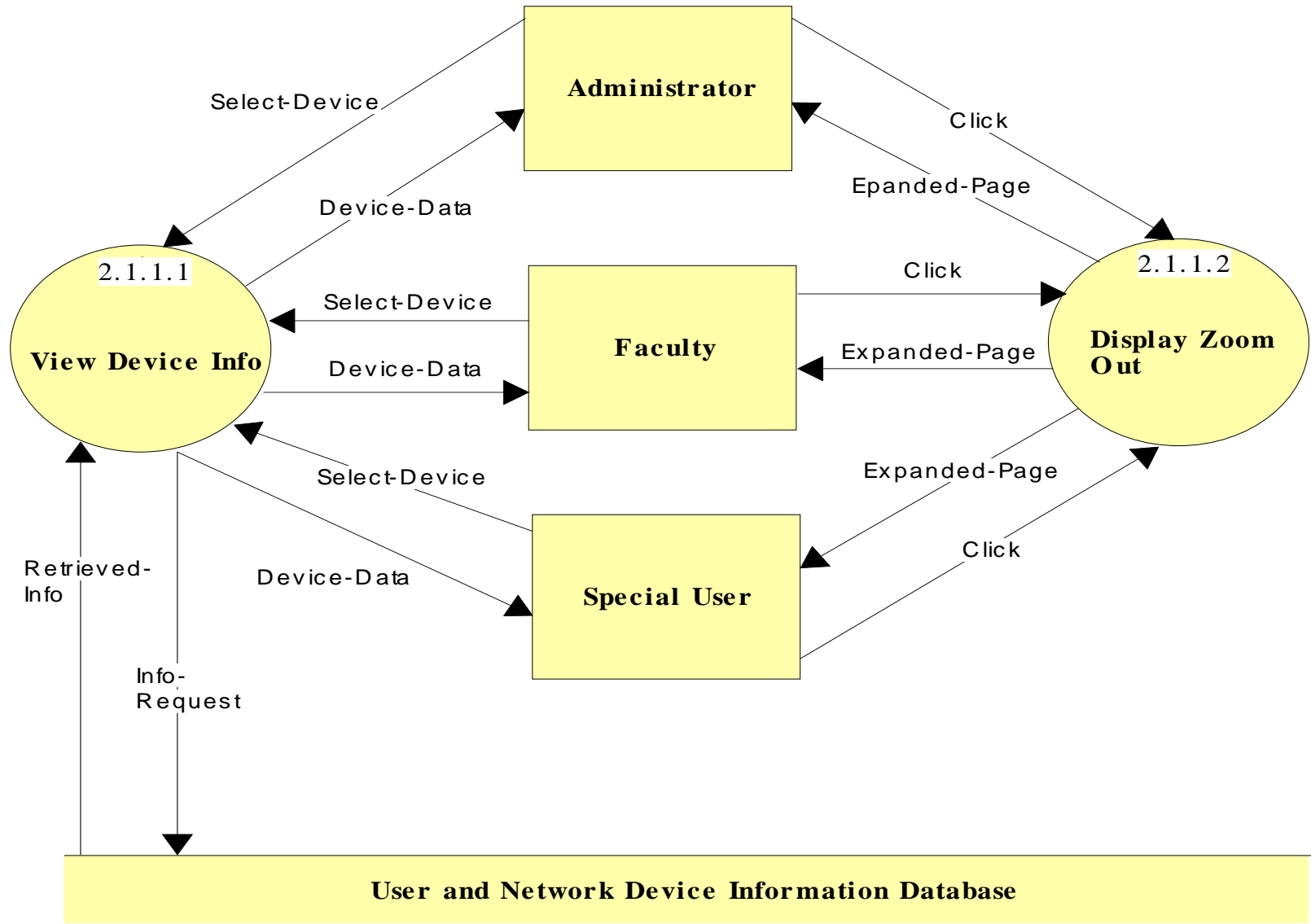
Manage User Request: This is a Level 2 diagram that shows the processes for all the different users.

Floor Plan Screen



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

Room Select Screen



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

1.3 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

Retrieved-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

1.4 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
login: CHAR(8)
- name given to the user to login under
Password: CHAR(8)
-Password for the login, created by the user
User_type: CHAR(8)
- which class of user a login is classified as (used to specify permissions)

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

X_coord: VARCHAR(3)

- The X coordinate of the location of the machine/equipment in the room

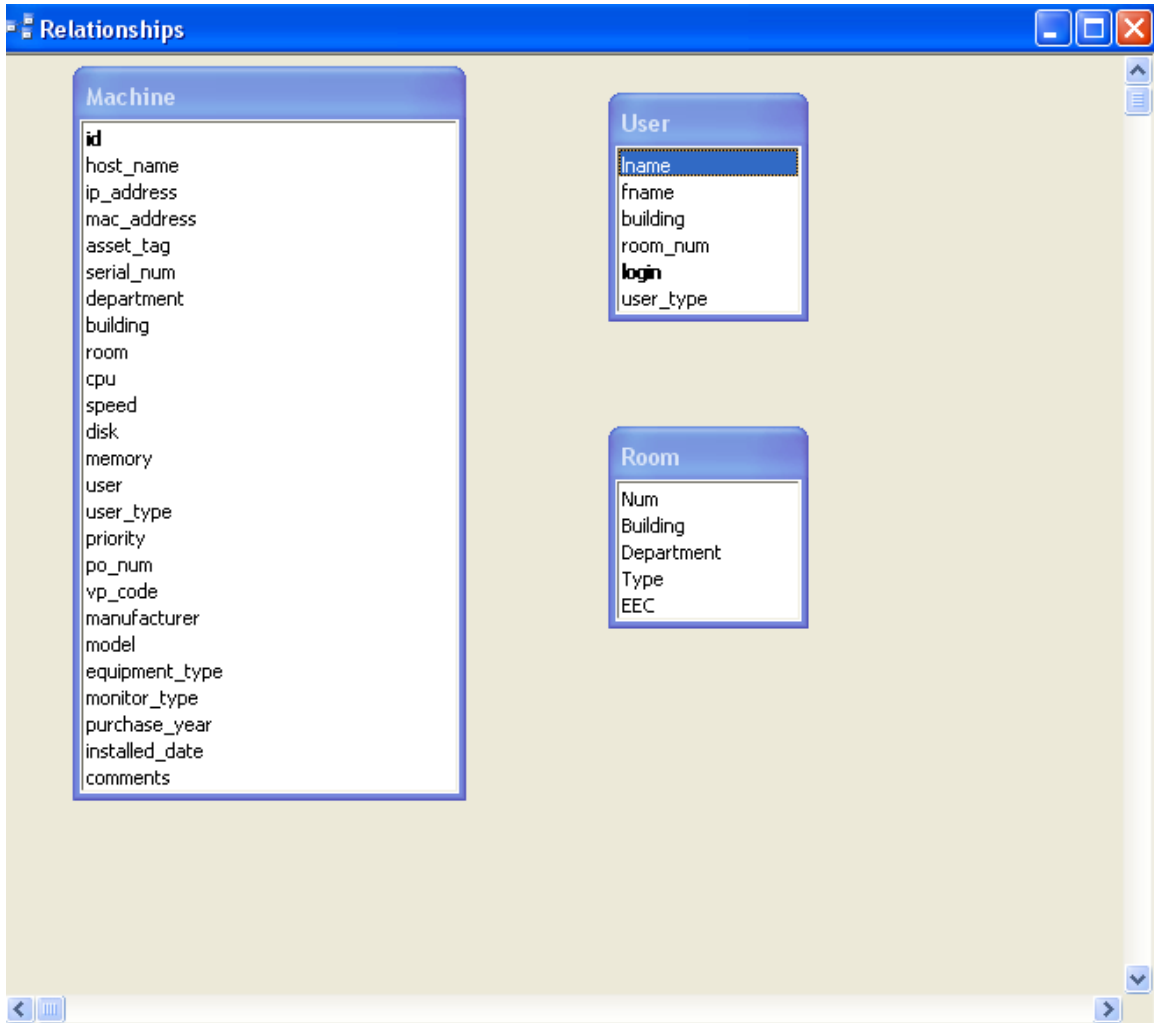
Y_coord: VARCHAR(3)

- The Y coordinate of the location of the machine/equipment in the room

Comments: VARCHAR(100)

- Comments about the machine/equipment

1.5 Entity-Relationship Diagram



1.6 Physical Data Structures and Data File Specification

The user table is populated with names of users, set by the administrator, and is updated by the administrator

User

	Field Name	Data Type	Description
▶	name	Text	User's last name
	fname	Text	User's first name
	building	Text	Name of the Building where the user's office or room is located
	room_num	Number	Number of the room which the user's office or room is located
?	login	Text	Name given to the user to login under
	password	Text	Password for the login, created by the user
	user_type	Text	Which class of user a login is classified as (used to specify permissions)

The machine and room tables are populated with information given to us by the clients, and updates will be pushed to these tables by the clients.

Machine

	Field Name	Data Type	Description
?	id	Number	A unique identifier
	host_name	Text	The hostname of the machine
	ip_address	Number	The IP address of the machine
	mac_address	Number	The MAC address of the machine
	asset_tag	Number	The IT&S asset tag value
	serial_num	Number	The machine's serial number
	department	Text	The department to which the machine belongs (the sub-network)
	building	Text	The building in which the machine is located
	room	Number	The room in which the machine is located
	cpu	Text	The CPU type
	speed	Number	The speed of the processor
	disk	Number	The disk size
	memory	Number	The memory size
	user	Text	The name of the primary user
	user_type	Text	The type of primary user; i.e. student, faculty, etc.
	priority	Text	The priority level L-low; M-medium; H-high
	po_num	Number	Purchase order number
	vp_code	Text	Always VPAA (Vice President of Academic Affairs)
	manufacturer	Text	The name of the manufacturing company
	model	Text	The model name of the machine
	equipment_type	Text	The type of equipment; i.e. PC, Mac, Laptop, Wireless Access Point, etc.
	monitor_type	Text	The type of monitor; i.e. LCD, CRT
	purchase_year	Date/Time	The date the machine/equipment was purchased
	installed_date	Date/Time	The date the machine/equipment was installed
	comments	Text	Comments about the machine/equipment

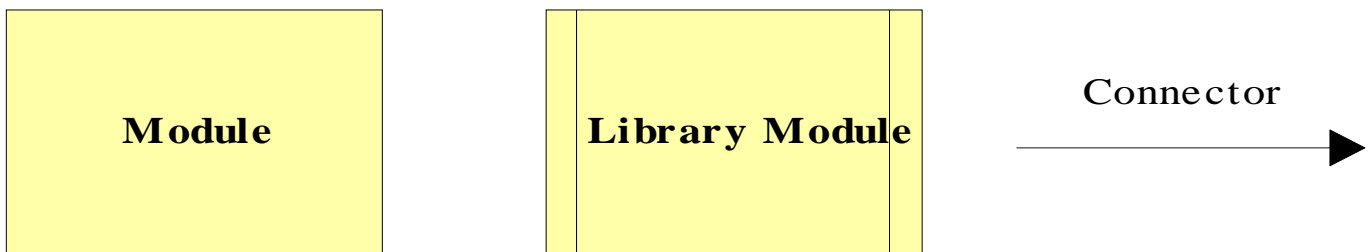
Room

	Field Name	Data Type	Description
▶	Num	Number	The room number
	Building	Text	The building the room is found in
	Department	Text	The department the room is used by
	Type	Text	The type of room; i.e. lab, lecture, etc.
	EEC	Yes/No	Indicates if the room is an Electronically Enhanced Classroom

Section 2: Architectural Design Specification

2.1 Structure Diagram

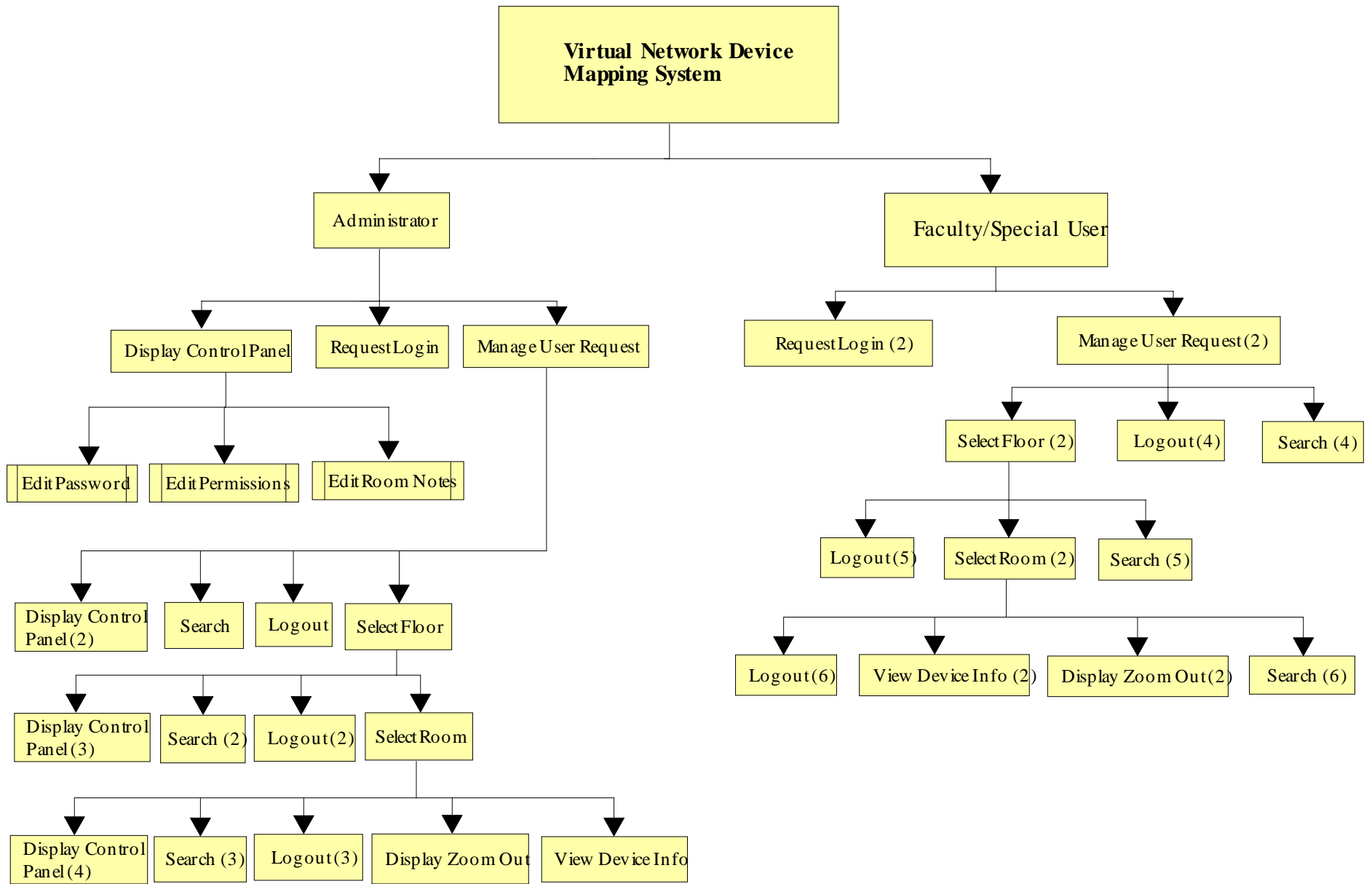
Legend



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

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 Development 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: Detailed Design Specification

3.1 Documentation Prologue for each Routine

3.1.1 login

This routine takes a user name and a password as input from the user. It connects to the database and verifies the information. If the information is verified it allows access to the rest of the program. Otherwise, an error message is displayed to the screen.

3.1.2 logout

This routine severs the connection to the database and redirects to the index page.

3.1.3 displayRoom

This routine takes as input the room selected on the Floor Plan page. It displays the floor and room numbers in the heading, and the image for that room.

3.1.4 displayDevice

This routine displays the icon for a device in the correct location within the Room Layout image.

3.1.5 displayRoom_Notes

This routine takes as input the selected room number. It retrieves the Room Notes information for that room from the database and displays it to the page.

3.1.6 displayDevice_Info

This routine displays the device information for a selected device in the correct area of the page.

3.1.7 search

This routine takes as input the information entered into search fields. It returns all devices which match the entered criteria.

3.1.8 editPassword

This routine changes the password stored in the database for the selected user.

3.1.9 editPermissions

This routine takes as input a user and one or more selected devices, and sets a flag that determines whether that user can view the information for the selected device(s).

3.1.10 editRoom_Notes

This routine stores entered text into the database for the selected room.

3.2 Pseudocode for each Routine

3.2.1 login

```
connect to database
if( info is verified )
    create Session
    load 'Logged In' page
else
    disconnect from database
    output error message
```

3.2.2 logout

```
end Session
disconnect from database
load 'Log In' page
```

3.2.3 displayRoom

```
room_number = input from user
output( building_name " – " floor_number " – Room #" room_number )
room_layout_image = image_array[room_number]
```

3.2.4 displayDevice

```
device = input from user
lookup device_type
lookup device_coords
output( image.device_type ) at location device_coords
```

3.2.5 displayRoom_Notes

```
room_number = input from user
if( room_number.notes == NULL )
    output( "n/a" )
else
    output( room_number.notes )
```

3.2.6 displayDevice_Info

```
device = user input
output( device.* )
```

3.2.7 search

```
search_vars[n] = user input from search fields
x = 0
for( i=1 to n) || n = # of devices
{
    compare device to search criteria
    if ( device matches search criteria )
    {
        output( device_name, building, room, ip_address, mac_address,
                equip_type )
        output( newline "-----" newline )
        x++
    }
}
if( x==0 )
    output( "No results found." )
```

3.2.8 editPassword

```
user_name = user input
password = user input
user_name.pass = password
```

3.2.9 editPermissions

```
user_name = user input
devices[n] = user selects devices
bool permission = user input || True – read, False – restrict
for ( i=1 to n)
    devices[i].perm = permission
```

3.2.10 editRoom_Notes

```
room_number = input from user
room_note = input string from user
room_number.notes = room_note
```

Section 4: 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.

4.1 Test Plan

4.1.1 Test Plan Identifier:

Virtual Network Device Mapping System Test Plan version 1.1

4.1.2 Introduction

In order to ensure the highest quality product possible, and to be sure that our program adequately meets the needs of our clients, we are utilizing four separate types of testing. First, we will implement Unit Tests to ensure that each module is functioning correctly, including individual test cases. Second, we will perform Integration Tests to be sure that each module is interacting correctly with other modules to perform high level tasks. If changes are made to interdependent modules, Regression Testing will be done as a part of Integration Tests. Third, we will perform a System Test, which verifies that all functional requirements have been met and are operating as defined in the Requirements Specification. Fourth, Acceptance Testing will be carried out to ensure that the delivered system meets all of the requirements as specified by our clients.

4.1.3 Test Items

We will be running our software on a Dell 2550 Server running Red Hat Linux – ES Release 3, with Oracle version 10g, PHP version 4.3.11 and the Apache web server version 2.0.46. Our software will be tested to ensure compatibility with Microsoft Internet Explorer version 6.0, Mozilla Firefox version 1.0, and Apple Safari version 1.2. Also, our software will be designed to be viewed on a monitor set to 1024x768 resolution.

4.1.4 Features Not To Be Tested

It is our plan to test all parts of the project that we have implemented. This does not include the way in which network device information is entered into the database, or the ways in which that data can be edited.

4.1.5 Approach

We have designated two members of our team to specialize in testing. As modules are completed, we will perform our Unit Tests on them. Following that, Integration Testing will occur. When these have been successfully completed, the System Test will be executed. Finally, we will perform the Acceptance Test.

4.1.6 Pass/Fail Criteria

Each Test Case will Pass if it consistently meets all requirements specified in the Unit Test. If a Test Case fails to produce the required results, it will Fail. Criteria used to determine whether a Test Case is passed or failed include:

- Task performs action specified.
 - Task performs action in a reasonable amount of time.
 - Task performed without errors.
 - Task displays output correctly.
-
- Individual test cases for each GUI will include tests on all links, buttons, text boxes, drop-down menus and any other means of user input in that interface.
 - Master Test Plan – The master test plan will be passed if and only if all lower level test plans (Unit Tests) are completed and passed. Any lower level plan that fails will result in a new version of that module which will then be subjected to the original Unit Test. Regression Testing will also be implemented in this case.

4.1.7 Suspension Criteria and Resumption Requirements

Testing activity will be suspended under the following circumstances:

- System failure.
- Excessive Test Case failures.
- Changes made to the Unit being tested.
- A need for Regression Testing to begin which involves the unit being tested.

Testing will resume from the beginning of the Unit Test when it is believed that the problems causing failure have been resolved.

4.1.8 Test Deliverables

The test deliverables include a complete documentation of the Unit Tests and the Integration Tests. A fully completed checklist of the Functional Requirements and the Acceptance Test will also be delivered.

4.1.9 Testing Tasks

The Testing Tasks will be comprised of Unit Tests for each screen that the user will be able to navigate through. There are 3 different types of users and some tests are specific to a certain user. The screens that will be tested that are common to all users are the login page, view floor plan and view office layout. The administrative user will have access to another page called the control panel page. Each of these pages will be tested in a logical order allowing for quick results.

4.1.10 Environmental Needs

- Oracle, version 10g
- Mysql, version 4.1.14
- PHP, version 4.3.11
- Apache, version 2.0.46
- Browsers:
 - Microsoft Internet Explorer version 6.0.2800.1106
 - Mozilla Firefox version 1.0 preview release
 - Mozilla Firefox version 1.0
 - Apple Safari 1.2
- Microsoft Windows 2000 5.00.2195 Service Pack 3
- Microsoft Windows XP Professional Version 2002 Service Pack 2

4.1.11 Responsibilities

- Amanda Danko is the Team Leader. She will make sure that all required testing is in place and that all features are tested.
- Mark Riley will be the head tester. He will be in charge of providing the overall strategy for testing.

4.1.12 Staffing and Training Needs

- Mark Riley is in charge of testing and making crucial decisions that will affect what is tested and how it is tested.
- Mark will also work with Amanda Danko in each stage of testing for our software.

4.1.13 Schedule

Scheduled Milestones:

-April 30, 2007: Acceptance Test Deliverables due

-May 1, 2007: Acceptance Test Presentations

-May 4, 2007: Academic Celebration Presentations

4.1.14 Risks and Contingencies

The current status of the project has rendered us unable to anticipate the possible risks and therefore their countermeasures. As the development process continues, we will be able to further assess the possible risks we may encounter.

4.1.15 Approvals

Names and Titles for Approval:

Amanda Danko - MAJIK Software Solutions Team Leader

Kevin Johnson – MAJIK Software Solutions Lead Developer

Ian Kost – MAJIK Software Solutions Developer

Mark Riley – MAJIK Software Solutions Lead Tester

Mr. Eric Crossman - Assistant Systems Administrator

Mr. Ken Swarner - Systems Administrator

4.2 Unit Test

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

MAJIK Software Solutions

Virtual Network Device Mapping System

Test Number 2 - Administrator Welcome Screen Test Cases

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
2.1	Welcome page loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
2.2	Click Control Panel Button.	User clicks the Control Panel button.	N/A	The control panel screen loads.		
2.3	Click logout button.	User clicks the Logout button.	N/A	The user is logged out of the system and returns to the login screen.		
2.4	Click the Roger Bacon Hall 1st Floor link.	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
2.5	Click the Roger Bacon Hall 2nd Floor link.	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
2.6	Click the Roger Bacon Hall 3rd Floor link.	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		

2.7	Click the Roger Bacon Hall 4th Floor link.	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		
2.8	Click the Morell Science Center 1st Floor Link	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science Center.		
2.9	Click the Morell Science Center 2nd Floor Link	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
2.10	Click the Morell Science Center 3rd Floor Link	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the third floor of Morrell Science Center.		
					Summary of Tests for this Unit	P

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MAJIK Software Solutions

Virtual Network Device Mapping System

Test Number 3 - Faculty/Staff Welcome Screen Test Cases

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
3.1	Welcome page loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
3.2	Click logout button.	A link to logout of the system.	N/A	The user is logged out of the system and is returned to the login screen.		
3.3	Click the Roger Bacon Hall 1st Floor link.	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
3.4	Click the Roger Bacon Hall 2nd Floor link.	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
3.5	Click the Roger Bacon Hall 3rd Floor link.	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
3.6	Click the Roger Bacon Hall 4th Floor link.	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		

3.7	Click the Morell Science Center 1st Floor Link	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science Center.		
3.8	Click the Morell Science Center 2nd Floor Link	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
3.9	Click the Morell Science Center 3rd Floor Link	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the third floor of Morrell Science Center.		
					Summary of Tests for this Unit	P

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Virtual Network Device Mapping System

Test Number 4 - Roger Bacon Floor 1 Layout Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
4.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
4.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
4.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
4.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
4.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
4.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		

4.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science Center.		
4.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
4.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
4.10	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
4.11	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
4.12	Click a Room	A link to a specific room	N/A	A new page loads, displaying the floor plan of the room clicked		
					Summary of Tests for this Unit	P

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Virtual Network Device Mapping System

Test Number 5 - Roger Bacon Floor 2 Layout Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
5.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
5.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
5.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
5.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
5.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
5.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		
5.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science		

				Center.		
5.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
5.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
5.10	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
5.11	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
5.12	Click a Room	A link to a specific room	N/A	A new page loads, displaying the floor plan of the room clicked		
					Summary of Tests for this Unit	P

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MAJIK Software Solutions

Virtual Network Device Mapping System

Test Number 6 - Roger Bacon Floor 3 Layout Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
6.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
6.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
6.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
6.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
6.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
6.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		
6.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science		

				Center.		
6.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
6.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
6.10	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
6.11	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
6.12	Click a Room	A link to a specific room	N/A	A new page loads, displaying the floor plan of the room clicked		
					Summary of Tests for this Unit	P

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Test Number 7 - Roger Bacon Floor 4 Layout Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
7.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
7.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
7.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
7.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
7.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
7.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		

7.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science Center.		
7.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
7.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
7.10	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
7.11	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
7.12	Click a Room	A link to a specific room	N/A	A new page loads, displaying the floor plan of the room clicked		
					Summary of Tests for this Unit	P

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Test Number 8 - Morell Science Center Floor 1 Layout Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
8.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
8.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
8.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
8.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
8.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
8.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		
8.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science		

				Center.		
8.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
8.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
8.10	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
8.11	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
8.12	Click a Room	A link to a specific room	N/A	A new page loads, displaying the floor plan of the room clicked		
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Test Number 9 - Morell Science Center Floor 2 Layout Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
9.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
9.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
9.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
9.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
9.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
9.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		
9.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science		

				Center.		
9.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
9.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
9.10	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
9.11	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
9.12	Click a Room	A link to a specific room	N/A	A new page loads, displaying the floor plan of the room clicked		
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Test Number 10 - Morell Science Center Floor 3 Layout Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
10.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
10.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
10.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
10.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
10.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
10.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		
10.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science		

				Center.		
10.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
10.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
10.10	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
10.11	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
10.12	Click a Room	A link to a specific room	N/A	A new page loads, displaying the floor plan of the room clicked		
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Test Number 11 - Room View Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
11.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
11.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
11.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
11.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
11.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
11.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		
11.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science		

				Center.		
11.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
11.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
11.10	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
11.11	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
11.12	Click the Zoom Out Link	A link back to the layout of the current floor	N/A	A new page loads, displaying the layout of the floor clicked		
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Test Number 12 - Administrator Control Panel Index Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
12.1	Control Panel Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
12.2	Select Passwords	A link to the Change Passwords page	N/A	A new page loads displaying the Control Panel Change Passwords page.		
12.3	Select Permissions	A link to the Change Permissions page	N/A	A new page loads displaying the Control Panel Change Permissions page.		
12.4	Select Room Notes	A link to the Room Notes page	N/A	A new page loads displaying the Control Panel Room Notes page.		
12.6	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
12.7	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
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Test Number 13 - Passwords Control Panel Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
13.1	Edit Passwords Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
13.2	Select Passwords	A link to the Change Passwords page	N/A	A new page loads displaying the Control Panel Change Passwords page.		
13.3	Select Permissions	A link to the Change Permissions page	N/A	A new page loads displaying the Control Panel Change Permissions page.		
13.4	Select Room Notes	A link to the Room Notes page	N/A	A new page loads displaying the Control Panel Room Notes page.		
13.5	Select User Name from dropdown	Dropdown menu to choose user names	User Name	The selected value is highlighted in the list.		
13.6	Enter text into New Password field and click Confirm	A Function to change Users passwords	New Password	A new page loads displaying a confirmation message.		
13.7	Enter text into fields and click Clear	A button to clear the fields	N/A	The User Name and New Password fields are cleared.		
13.8	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
13.9	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
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Test Number 14 - Permissions Control Panel Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
14.1	Edit Passwords Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
14.2	Select Passwords	A link to the Change Passwords page	N/A	A new page loads displaying the Control Panel Change Passwords page.		
14.3	Select Permissions	A link to the Change Permissions page	N/A	A new page loads displaying the Control Panel Change Permissions page.		
14.4	Select Room Notes	A link to the Room Notes page	N/A	A new page loads displaying the Control Panel Room Notes page.		
14.5	Enter text into Device Name field and click Search	Search function by device name	Device Name	A new page loads displaying the search results		
14.6	Enter text into Equipment Type field and click Search	Search function by equipment type	Equipment Type	A new page loads displaying the search results		
14.7	Choose value in Building field and click Search	Search function by Building	Building Name	A new page loads displaying the search results		
14.8	Enter text into Room Number field and click Search	Search function by Room Number	Room Number	A new page loads displaying the search results		

14.8.1	Select Device name	Check Box next to Device name	Device Name	See last subsection.		
14.8.2	Choose value in User Name field	Dropdown menu for User names	User Name	See last subsection.		
14.8.3	Select Read Permission and click Confirm	Function to set permission to users	Permission	A new page loads and data is stored to database		
14.8.4	Select Restrict Permission and click Confirm	Function to set permission to users	Permission	A new page loads and data is stored to database		
14.9	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
14.10	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
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Test Number 15 - Room Notes Control Panel Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
15.1	Edit Passwords Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
15.2	Select Passwords	A link to the Change Passwords page	N/A	A new page loads displaying the Control Panel Change Passwords page.		
15.3	Select Permissions	A link to the Change Permissions page	N/A	A new page loads displaying the Control Panel Change Permissions page.		
15.4	Select Room Notes	A link to the Room Notes page	N/A	A new page loads displaying the Control Panel Room Notes page.		
15.5	Select Building Name from dropdown	Dropdown menu to choose building	User Name	The selected value is highlighted in the list.		
15.5	Select Floor Number from dropdown	Dropdown menu to choose floor number	Floor Number	The selected value is highlighted in the list.		
15.6	Enter text into Room Number field	Text Field to enter room number	Room Number	See next test field.		
15.7	Enter text into Notes field and click Save	Function to save entered text to database	N/A	A new page loads displaying the confirmation message.		
15.7	Click the Search Link	A link to the search page	N/A	A new page loads displaying the search function		
15.8	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
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Test Number 16 - Search Screen

Number	Test Case Name	Description	Input	Expected Result	Actual Result/Comments	TestResult (Pass/Fail)
16.1	Layout Screen loads.	Page loads correctly.	N/A	Page loads and all components are displayed on the screen.		
16.2	Select Roger Bacon Floor 1 and Press Go	A link to the layout of the first floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
16.3	Select Roger Bacon Floor 2 and Press Go	A link to the layout of the second floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the first floor of Roger Bacon Hall.		
16.4	Select Roger Bacon Floor 3 and Press Go	A link to the layout of the third floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the second floor of Roger Bacon Hall.		
16.5	Select Roger Bacon Floor 4 and Press Go	A link to the layout of the fourth floor of Roger Bacon Hall.	N/A	A new page loads displaying the floor plan layout of the third floor of Roger Bacon Hall.		
16.6	Select Morell Science Center Floor 1 and Press Go	A link to the layout of the first floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the fourth floor of Roger Bacon Hall.		
16.7	Select Morell Science Center Floor 2 and Press Go	A link to the layout of the second floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the first floor of Morrell Science		

				Center.		
16.8	Select Morell Science Center Floor 3 and Press Go	A link to the layout of the third floor of Morrell Science Center.	N/A	A new page loads displaying the floor plan layout of the second floor of Morrell Science Center.		
16.9	Click the Control Panel Link	A link to the administrator control panel	N/A	A new page loads displaying the initial options for the control panel		
16.10	Click the Logout Link	A link to the login screen	N/A	The user is logged out, and the login page loads		
16.11	Enter Text in the Device Name Field and Click Search	A Search function based upon Device Name	Device name	A new page loads, displaying results of the Device Name Search		
16.12	Enter Text in the User Field and Click Search	A Search function based upon User	User	A new page loads, displaying results of the User Search		
16.13	Enter Text in the MAC Address Field and Click Search	A Search function based upon MAC Address	MAC Address	A new page loads, displaying results of the MAC Address Search		
16.14	Select a Building in the Building Field and Click Search	A Search function based upon Building	Building	A new page loads, displaying results of the building Search		
16.15	Enter Text in the Equipment Type Field and Click Search	A Search function based upon Equipment Type	Equipment Type	A new page loads, displaying results of the Equipment Type Search		
16.16	Enter Text in the Model Field and Click Search	A Search function based upon Model	Model	A new page loads, displaying results of the Model Search		

16.17	Enter Text in the Monitor Type Field and Click Search	A Search function based upon Monitor Type	Monitor Type	A new page loads, displaying results of the Monitor Type Search		
16.18	Enter Text in the Installed Date Field and Click Search	A Search function based upon Installed Date	Installed Date	A new page loads, displaying results of the Installed Date Search		
16.19	Enter Text in the CPU Field and Click Search	A Search function based upon CPU	CPU	A new page loads, displaying results of the CPU Search		
16.20	Enter Text in the Disk Field and Click Search	A Search function based upon Disk	Disk	A new page loads, displaying results of the Disk Search		
16.21	Enter Text in the Department Field and Click Search	A Search function based upon Department	Department	A new page loads, displaying results of the Department Search		
16.22	Select a Priority in the Priority Field and Click Search	A Search function based upon Priority	Priority	A new page loads, displaying results of the Priority Search		
16.23	Enter Text in the Asset Tag Number Field and Click Search	A Search function based upon Asset Tag Number	Asset Tag Number	A new page loads, displaying results of the Asset Tag Number Search		
16.24	Enter Text in the User Type Field and Click Search	A Search function based upon User Type	User Type	A new page loads, displaying results of the User Type Search		
16.25	Enter Text in the IP Address Field and Click Search	A Search function based upon IP Address	IP Address	A new page loads, displaying results of the IP Address Search		
16.26	Enter Text in the Room Field and Click Search	A Search function based upon Room	Room	A new page loads, displaying results of the Room Search		
16.27	Enter Text in the Manufacturer Field and Click Search	A Search function based upon Manufacturer	Manufacturer	A new page loads, displaying results of the Manufacturer Search		

16.28	Enter Text in the VP Code Field and Click Search	A Search function based upon VP Code	VP Code	A new page loads, displaying results of the VP Code Search		
16.29	Enter Text in the Purchase Year Field and Click Search	A Search function based upon Purchase Year	Purchase Year	A new page loads, displaying results of the Purchase Year Search		
16.30	Enter Text in the Purchase Order Number Field and Click Search	A Search function based upon Purchase Order Number	Purchase Order Number	A new page loads, displaying results of the Purchase Order Number Search		
16.31	Enter Text in the CPU Speed Field and Click Search	A Search function based upon CPU Speed	CPU Speed	A new page loads, displaying results of the CPU Speed Search		
16.32	Enter Text in the Memory Field and Click Search	A Search function based upon Memory	Memory	A new page loads, displaying results of the Memory Search		
16.33	Enter Text in the Serial Number Field and Click Search	A Search function based upon Serial Number	Serial Number	A new page loads, displaying results of the Serial Number Search		
16.34	Enter Text in the Field and Click Search	A Search function based upon	Device name	A new page loads, displaying results of the Search		
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4.3 Integration Test

Integration testing is a particularly important phase of software testing. After Unit testing, we will identify which of the units of our software will be linked together. Then these units will be combined and tested as a group. The goal of this phase is to bring together pieces of our system, and resolve any issues that may arise in the process.

Integration Tests are as follows:

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Integration Tests

Unit Number	Linked Units
1	2, 3
2	4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15
3	4, 5, 6, 7, 8, 9, 10
4	11
5	11
6	11
7	11
8	11
9	11
10	11
11	4, 5, 6, 7, 8, 9, 10, 16
12	13, 14, 15, 16
13	14, 15, 16
14	13, 15, 16
15	13, 14, 16
16	4, 5, 6, 7, 8, 9, 10, 11

Examples of Integration Tests:

- If the user does not provide valid login information, they do not have access to the rest of the program or information in the database.
- If a Faculty member logs in, they are not able to see or access the Control Panel.
- If a Faculty member or Administrator selects a floor in Roger Bacon or the Morrell Science Center from the menus, the page will load the correct floor.
- If a Faculty member or Administrator selects a room from any floor plan view, the page will load the correct room.
- If a Faculty member or Administrator selects a device in a room view, the page will load the correct device information.

4.4 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:

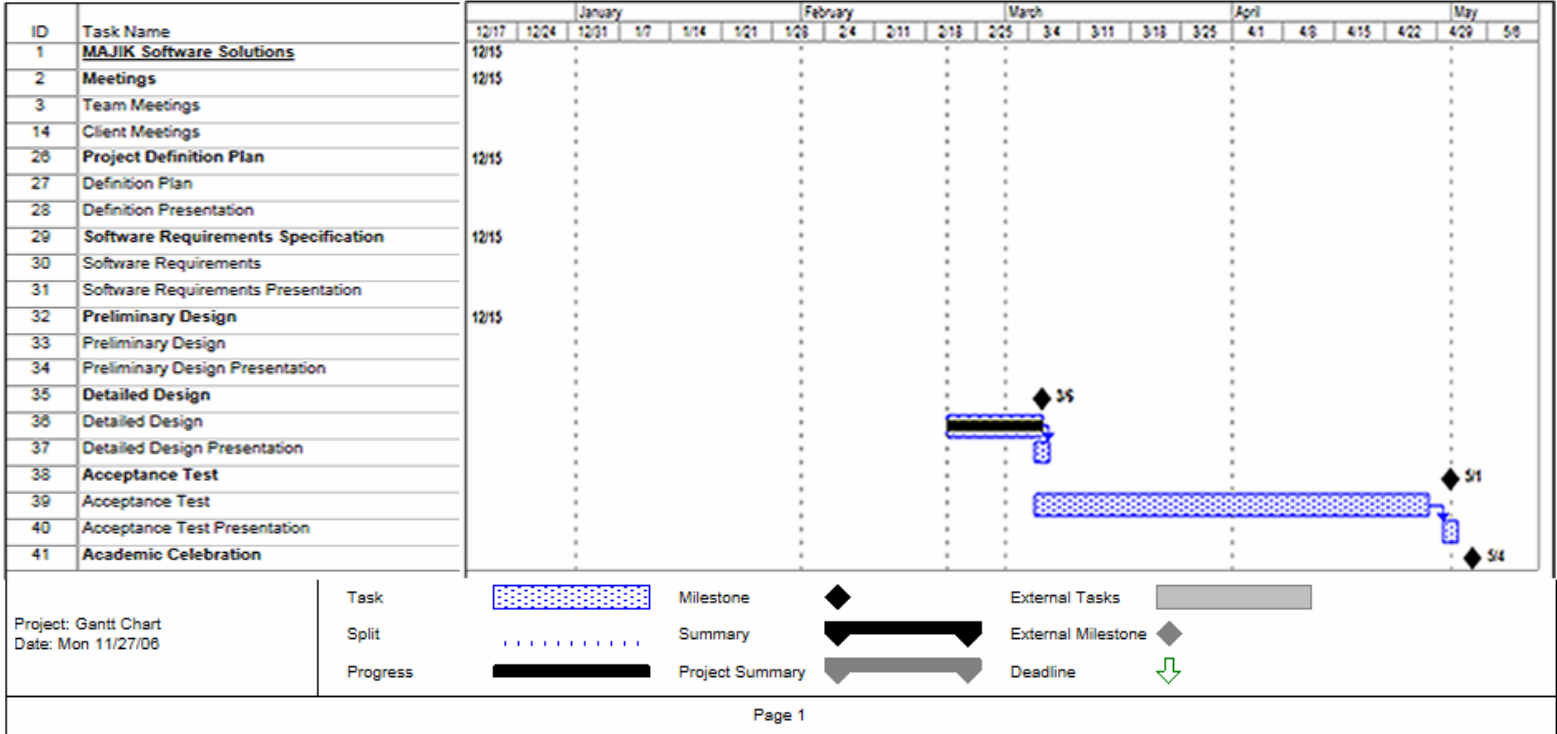
The Special user will have an account established by the Administrator.

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 5: Appendices

5.1 Gantt Chart



5.2 Glossary of Terms

Apache - an open source web server that runs on most commonly used platforms.

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.

IP address – Internet Protocol address, is a unique address that certain electronic devices use in order to identify and communicate with each other on a computer network.

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.

MySQL - Open source relational database management system (RDBMS) that uses Structured Query Language (SQL), a popular language for adding, accessing, and processing data in a database.

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

Oracle - a relational database management system (RDBMS) developed and copyrighted by the Oracle Corporation.

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’.