Detailed Design
Data Flow Diagrams

Dynamic Network Device
Mapping System

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1.2.1 Data Flow Diagrams

A data flow diagram shows a graphical representation of the flow of data within a system. Data Flow Diagrams utilize four basic symbols (outlined in the next section) to represent the structure, movement and interaction among the users, data, processes, and data store. The data flow diagrams for the School of Science Network Device Display System will follow the Yourdon/DeMarco style of data flow diagrams.

1.2.2 Key

There are four major symbols used in the data flow diagrams. Closed rectangles represent a sink or source, which is an outside entity accessing the system. Circles represent the processes within the system. Open-sided rectangles represent data stores, which, in the case of the School of Science Network Device Display System, represent a database containing information on the various network devices in the School of Science. The final symbol used in the data flow diagrams is an arrow, which represents the transfer of data between sources, processes and data stores.
1.2.3 Context Diagram

The context diagram is the most basic data flow diagram that shows interaction between the system and the users.
1.2.4 Level 0 Diagram

The Level 0 diagram is an expansion of the School of Science Network Device Display System process from the Context Diagram. It outlines all the major processes of the system and how they interact with the users.
1.2.5 Level 1: Manage User Request (1)

The Manage User Request diagram outlines the options the users have after logging in to the system. All users can search for existing devices and select a floor from the School of Science or request a logout. Administrators can also access the control panel.
1.2.6 Level 2: Select Floor Plan (1.2)

The Select Floor Plan diagram outlines the options the users have after choosing a floor in the School of Science to view. All users can choose to view a room on the current floor, as well as scroll over any room on the current floor to view a tooltip showing the devices in that room. All users can also search for existing devices, while Administrators can access the control panel.
1.2.7 Level 3: View Room (1.2.1)

The View Room diagram outlines the options the users have after choosing a room to view. All users can select a device and view information about that device, depending on their user permissions. Administrators can also access Edit Mode, as well as access the Control Panel.
1.2.8 Level 4: Access Edit Mode (1.2.1.2)

The Access Edit Mode diagram shows the functions available to the Administrator after they enter Edit Mode from the room view. The Administrator will be able to ping a selected device, as well as edit room notes that only the Administrator can see, and search for new devices that have not yet been placed. The Administrator will also be able to move devices located in the room, and access the Control Panel from the Edit Mode.
1.2.9 Level 5: Move Device (1.2.1.2.1)

The Move Device diagram shows what functions are available to the Administrator after selecting Move Device. The Administrator will be able to move the selected device within the current room, as well as move the selected device to another room within the building. The Administrator will also be able to access the Control Panel.
1.3.10 Level 2: Search Device (1.3)

The Search Device diagram shows what actions the users can take after they choose to search for devices. All users can perform a basic search for devices by a limited number of information fields, as well as perform an advanced search on any information field the users were granted access to by the Administrator.
The Access Control Panel diagram outlines the functions available to the Administrator after accessing the Control Panel. The Administrator will be able to browse all users currently in the system, as well as search for a specified user. The Administrator will also be able to create new users and return to the Control Panel.
The Browse Users diagram outlines what functions the Administrator will have access to after browsing the current users. The Administrator will be able to change both the permissions and password of any user selected. The Administrator will be able to change the user type of the selected user. The Administrator will be able to browse the list of current users again, and will also be able to return to the control panel from the Browse Users page.