System Blueprint

Wrap-up Meeting
May 6, 2003

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<td>Yue Feng</td>
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<td><strong>NYAM Client Team</strong></td>
<td>Dr. Maxine Rockoff, Ph.D., Director, Division of Information Management, NYAM (Project Sponsor)</td>
<td>Patrick Clancy, Director of Technology, NYAM (Strategic Guidance)</td>
</tr>
<tr>
<td></td>
<td>Dr. Sandro Galea, MD, MPH, CUES (Project Sponsor &amp; Manager)</td>
<td>Gregg Headrick, Web Master (Web Development Expertise)</td>
</tr>
<tr>
<td></td>
<td>Princess Fortin, Research Assistant, CUES (Project Logistical Coordinator)</td>
<td>Yixiong Xu, System Administrator (Unix Expertise)</td>
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Business Goals

Organization Summary

New York Academy of Medicine is a non-profit public health organization, founded in 1847. It is “dedicated to enhancing the health of the public through research, education and advocacy, with a particular focus on urban populations, especially the disadvantaged.”

The Center for Urban Epidemiologic Studies (CUES) is NYAM’s community outreach program. CUES conducts research and collects information. It has also developed a web based resource guide, which can be used by community based organizations (CBO’s or Service Providers) as a referrals database.

Project Goals and Objectives

This project is sponsored by the URC Community Advisory Board (CAB). It is intended to provide services to the Harlem population through the CUES database. If the program succeeds, the database will be expanded to include programs from other areas.

The primary objective of this project is to deliver an enhanced, production version of the Web Based Resource Guide, so that CBO’s can begin using the product. NYAM wants to provide a web site that is readily accessible, easy to use and helpful to its constituency. It should provide a means by which service providers can search for programs that meet their client’s needs.

Specifically, the goals of this project include: creating a “Blueprint”, the system project plan and outline that enumerates deliverables and sets direction; transferring the system to NYAM’s UNIX platform; redesigning the graphical user interface (GUI) for search and organization input modules; and, enhancing the search functionality. The team will also provide a prototype of a systems administration component and a discussion document / recommendations for a bulletin board feature.
## Requirements

<table>
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<th>Task</th>
<th>Description</th>
<th>Responsible</th>
<th>Priority</th>
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<td><strong>Wish List</strong></td>
<td>Create blueprint</td>
<td>P. Fortin</td>
<td>1</td>
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<tr>
<td>Documentation</td>
<td>Create project plan</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>Documentation</td>
<td>Create status report</td>
<td>P. Fortin</td>
<td>1</td>
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<tr>
<td>Documentation</td>
<td>Create task plan</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Change &quot;Catchment Area&quot; to &quot;Neighborhood&quot;</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Change &quot;Program Name&quot; to &quot;Program Description&quot; in results page</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Display all address and phone information in results page</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Display language capabilities in results page</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Fix &quot;highlight&quot; function</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Instructions on search pages should be brief</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Redesign pages so that all data &quot;fits&quot; on one page</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Resize pop-up windows</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Use bold and consistent fonts</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>GUI</td>
<td>Use graphic art to create eye catching heading</td>
<td>P. Fortin</td>
<td>1</td>
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<tr>
<td>Search Functionality</td>
<td>Add links to Admin Tool, NYAM and Bulletin Board</td>
<td>P. Fortin</td>
<td>1</td>
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<tr>
<td>Search Functionality</td>
<td>Eliminate cross street in Subway/Bus directions</td>
<td>P. Fortin</td>
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</tr>
<tr>
<td>Search Functionality</td>
<td>Eliminate language choice</td>
<td>P. Fortin</td>
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<tr>
<td>Search Functionality</td>
<td>Refine search categories</td>
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<tr>
<td>Search Functionality</td>
<td>Remove &quot;special services&quot; in advanced search</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>Technical / DB Design</td>
<td>Attach Address/contact to each program</td>
<td>C. Chow</td>
<td>1</td>
</tr>
<tr>
<td>Technical / DB Design</td>
<td>Convert to Unix platform</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>Technical / DB Design</td>
<td>Make the site easy to maintain</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>Technical / DB Design</td>
<td>Redesign as needed to accommodate search functionality changes</td>
<td>C. Chow</td>
<td>1</td>
</tr>
<tr>
<td>Technical / DB Design</td>
<td>Use Apache web server</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>Technical / DB Design</td>
<td>Use MySQL database</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>Technical / DB Design</td>
<td>Use PHP</td>
<td>P. Fortin</td>
<td>1</td>
</tr>
<tr>
<td>Admin Tool</td>
<td>Allow users to update and create their own data</td>
<td>P. Fortin</td>
<td>2</td>
</tr>
<tr>
<td>Admin Tool</td>
<td>Authenticate users</td>
<td>P. Fortin</td>
<td>2</td>
</tr>
<tr>
<td>Admin Tool</td>
<td>Create an administrator rights page</td>
<td>P. Fortin</td>
<td>2</td>
</tr>
<tr>
<td>Admin Tool</td>
<td>Issue users id's and passwords</td>
<td>P. Fortin</td>
<td>2</td>
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<tr>
<td>Bulletin Board</td>
<td>Add a bulletin board or forum to web site</td>
<td>P. Fortin</td>
<td>3</td>
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**Deliverables**

For this project, the NYU Student team will deliver all of the items listed as #1 priorities:

✓ Blueprint
✓ Unix conversion
✓ Enhanced search functionality
✓ Redesigned graphical user interface

We will also deliver:

✓ Administrator prototype
✓ White paper regarding commercially available (off the shelf) bulletin boards / community forum applications.

**Accomplishments**

✓ We have completed all of the promised deliverables
✓ The search functionality has been substantially improved and simplified
✓ A new GUI has been designed
✓ The database has been restructured for flexibility and ease of maintenance
✓ An Administrator component is functional
✓ The system is operational for Unix, using an Apache Web Server and PHP
✓ All documentation is contained in this blueprint document and the accompanying CD
✓ The documentation includes a discussion forum FAQ
Components

Technology Stack

- Apache Web Server
- PHP web pages
- MySQL database
- WINSQL, ERWin database tools
- DreamWeaver, Fireworks and PhotoShop
- Cascading Style Sheets
- In-house graphic art, icons, etc.
- Commercially available bulletin board / forum
Rationale

The NYU student team has decided to use the technology stack listed above because NYAM has stipulated these requirements.

Site Map

Refer to Appendix
Search Page User Guide

- **Guide Home**

  Guide Home page explains the purposes of the web site.

  Click "Begin Search" button to search for available resources.
- **General Search Pages:**

  Step 1. Select organization name.
  Step 2. A. Select services in five service boxes.
  
  B. Click “Add” button to add services into the selected service box in step 3.
  
  Step 3. Click “Remove” button to remove services from the selected service box.
  
  Step 4. Input a zip code. Five neighboring zip codes will also be searched.

  Click “Search” button. “Search Results Page” or “Error Page” will be shown based on search result.
• **Error Page:**

When there is no result for user's search criteria, user will be directed to the error page.

1. Click “modify search” to return to “General Search page” to modify search criteria.

2. Click “Start New Search” button to start a new search in “General Search Page”.

![Error Page Image]
• **Search Results Page:**

  1. Click program name to review detail program information.
  2. Click address to find the location from the Map Quest website.
  3. Click “Modify your search” button to return to the General Search page to modify search criteria.
• **Program Information page:**

1. The page will be shown after a program name is clicked in “Search Results Page”. The page contains detailed program information.

2. Contains bookmarks that help users to easily find interesting information in the page.

3. Contains link to the Map Quest. Click address to find the location from the Map Quest website.

4. Click “Print” button to print the page.

5. Click “Close” button to close this page.

---

**Program Information - Microsoft Internet Explorer**

1. **Organization Information**

   **Harlem Hospital Center**
   - Director Name: Dr. Jane
   - Description: This hospital services the Harlem area.

2. **Program Information**

   **Renaissance Health Care Network Diagnostic & Treatment Center**
   - Director Name: Dr. Smith
   - Admin. Staff Name(s): Ms. Gullager, Mr. Jwords
   - Hours: 8am-5pm Monday-Friday
   - Client Capacity: 30
   - Avg. Program Duration: 2-5 months
   - Program Frequency: Weekly
   - Description: The Renaissance Health Care Network provides comprehensive primary care services for the families of Central and West Harlem and the northern tip of Manhattan through nine conveniently located community health centers.
   - Comments: None

3. **Site Specific Information**

   **Contact Information**
   - Address: 215 West 125 Street, New York, NY 10027
   - Telephone: (121) 932-6500(1) (121) 932-9999(2)
   - Email: dummy@email.com

   **Subway Directions**
   - Lines: Test Nearest_Lines
   - Stops: Test Nearest_Station

   **Bus Directions**
   - Lines: Test Nearest_Lines
• **Organization Information page:**

1. The page will be shown after the organization name is clicked in the “Program Information page”. The page contains detailed organization information.

2. Contains links to the Map Quest. Click the address to find the location from the Map Quest website.

3. Click “Print” button to print the page.

4. Click “Close” button to close this page.
Organization/Program Input User Guide

These pages are available to service providers to allow input/update information for their Organizations and Programs. This information will update the Harlem Resource Guide Database and will be used for searching from the Guide Search pages.

Login

Allows authorized users to enter restricted portions of Resource Guide. First time users can register through provided link. Users who forgot their password, can contact Resource Guide Administrator via phone or e-mail. After the user successfully logs-in, the name of the user’s organization will be displayed on top of each following screen. Note that users can sign-out at any time by clicking on [Sign-Out] link on top of the page.
New User Registration

Service Providers are instructed to input required fields in order to register. The information entered on this screen will be displayed in Resource Guide Administrator’s pages – “New Account Request”. If any of the required fields is not input, an error message will be displayed.

Harlem Resource Guide

New User Registration

Please fill out the information below in order to register with NYAM. 
*Note: your information will not be processed until you click "Submit" button below.

Organization Name: New York Hospital

Your name (First Name, Last Name): Mr. John Johnson

E-mail: jj@nyhospital.org

Telephone Number: 212-367-3732

Comments:
New User Registration

Thank you for registering with NYAM!

You will be contacted by the NYAM Administrator shortly.

After you receive the password, you will be able to come back to this site and input your organization and program information to Harlem Resource Database.

To browse existing provider information go to "Guide Home" button.
Main Menu

Provides options to View/Modify organization information and View/Modify/Delete program information for existing programs as well as add new programs. The input of organization and program information was divided into 2 logical sections. This was done to allow the user work on updating either organization or program information. The work can be saved individually for each section. Note that the “View” link should provide information in the layout identical to Search Screen for organization and program.

Current User: Teen Services of New York [Sign Out]

Main Menu

Please review and update, as necessary, the information about your organization and program(s).

Organization Information: View / Modify

Program Information:

<table>
<thead>
<tr>
<th>Program Type</th>
<th>View / Modify / Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Program</td>
<td>View / Modify / Delete</td>
</tr>
<tr>
<td>Career Building</td>
<td>View / Modify / Delete</td>
</tr>
</tbody>
</table>

Enter New Program
Modify Organization Information

This page allows modifying user’s organization information. Required fields are marked with asterisk (*). The user will not be able to proceed until all required information is populated. User is required to press “Submit” button in the end of the form in order for information to be saved. Note that the toolbar on the left side highlights the step of the process the user is performing.
Enter New / Modify Existing Program Information

The print screens below demonstrate steps 2 - 7 that user has to go through in order to fill-out and save program information. The information will be saved only when user clicks on "Submit" button in step 7. Required fields are marked with asterisk (*). User will not be able to proceed until all required fields are saved.
For instance, the following error message will appear if user does not input required field Program Description. The user can populate this field from this page and click on the link to the next step on the bottom of the page.

![Image of the Harlem Resource Guide website](image-url)

**Current User: Teen Services of New York [Sign Out]**

You are on Step 2 of 7 - Program Information

- **Program Name:** Food Program
- **Program Description:**
- Name of Director and his/her title: Mrs. Helen Brown
- E-mail address: hbrown@help.org
- Name(s) of admissions staff: Tim Wallen
Current User: Teen Services of New York [Sign Out]
You are on Step 3 of 7 - Program Address

* Required Information - you will not be able to proceed to the next step until you fill out required information

Street Address (Line 1) 2 Madison Avenue
Street Address (Line 2)
Cross Street
City New York
State
Postal / Zip Code 10010
Telephone Number (1) 212-763-2303

Current User: Teen Services of New York [Sign Out]
You are on Step 4 of 7 - Program Admissions

Admissions hours/days: 14 days
Age group serviced (choose all that apply):
- Adolescents/Teens
- Adults
- Children (4-12)
- Infants/Toddlers
- Senior Citizens

Genders serviced:
- Male
- Female
- Transgender
- Transsexual

Special populations targeted (to make multiple selections within a list, hold down the "CTRL" while selecting the desired item):

- Batterers
- Disability Recipients
- Ex-Offenders
- Gay/Lesbian

Acceptance Criteria:
- Referral
- Walk-In
Current User: Teen Services of New York  [Sign Out]
You are on Step 5 of 7 - Program Appointments

Appointments required:  ☑ Yes  ☐ No
Client has to call directly:  ☑ Yes  ☐ No
Average time before the client is seen:  [Blank]

It is strongly encouraged to input all fields on this screen to make your program information useful.

Note: Your changes will not be saved until you click "Submit" in step 7!

Go Back to Step 4 - Program Admissions
Proceed to Step 6 - Program Services

Back to Main Menu  Clear All

Current User: Teen Services of New York  [Sign Out]
You are on Step 6 of 7 - Program Services

Program Service Category - select all services provided by your Program that apply (to make multiple selections within a list, hold down the "CTRL" while selecting the desired items). Add "Other" Service Category, if not listed, as one of the choices below the appropriate category (i.e. Food, Housing, etc.)

---

**Food**
- Breakfast
- Diabetic Food
- Other: [Healthy Food]

**Housing**
- Battered Women Shelter
- Emergency Shelter
- Family Crisis Shelter
- Other: [Shelter]

**Employment**
- Career Counseling
- Career Development
- Computer Training
- Other: [Writing Courses]

**Drug Rehab/Detox**
- Access to Medical Facility
- Inpatient Detoxification
- Needle Exchange
- Other:

**Violence**
- Abuse Counseling
- After School Program
- Custody Planning
- Other:
Harlem Resource Guide

Current User: Teen Services of New York [Sign Out]

You are on Step 7 of 7 - Program Payments & Comments

Is payment required?  
- Yes  
- No  
- Varies

Types of payments accepted - choose all that apply (to make multiple selections within the list, hold down the "CTRL" while selecting the desired items):
- Insurance
- Medicaid/Medicare
- Public Assistance
- Self Pay
- Other:

How often is payment required - choose all that apply (to make multiple selections within the list, hold down the "CTRL" while selecting the desired items):
- Weekly
- Bi-weekly
- Monthly
- Other:

Do you have any additional information about your program?

Harlem Resource Guide

Main Menu

Your program information was successfully updated.

Organization Information: View / Modify

Program Information:
- Food Program: View / Modify / Delete
- Career Building: View / Modify / Delete

Enter New Program
Delete Program Information

The following warning message will be displayed if the user clicks on “Delete” program link.

* The following Program information will be permanently deleted. Please confirm.

Program Name: Career Building
Program Description: Help find jobs
Name of Director and his/her title: Peter
Name(s) of admissions staff (separated by commas): John, Susan
URL:

Go Back  DELETE

Back to Main Menu
Installation Guide

Development Environment

OS   RedHat Linux 7.1
Web Server   Apache/1.3.23
Database Server MySQL 4.0.6-gamma
Script Engine PHP Version 4.2.1

*Complete PHP compilation and configuration options used in the development server will be included in /Installation/Webcodes/config/dev_server_php_info.html in CD.

Web Codes

• Web Server Configuration

The following web server configuration files can be found in “/Installation/Webcodes” directory tree of the CD:

* Special note in addition to the regular Apache set up

a. Add following line in .htaccess file under web root directory.

    php_value include_path   /path_to_web_root
    php_flag asp_tags   On

    (path_to_web_root: the absolute path to your web root directory )

b. Password protect /_admin directory.
All the Intranet Admin Site files are stored under /_admin. So modify .htaccess file under this directory to enable password protection.
(In addition, you may add IP address restriction so that only access from local IP address will be permitted.)

c. Make invisible /_lib, /_log directory
Protect these directory from viewing. But do not password protect them.

Use following directive in .htaccess file under respective directory.

    <Limit GET POST>
    deny from all
    </Limit>
    <Limit PUT DELETE>
    deny from all
    </Limit>

• Web Application configuration
/ _lib/global.inc contains application level configuration information. You will have to modify following according to your environment.

**APPLICATION__NYAM_DB_CONNECT_STR_READ**: DB connect string for read access

**APPLICATION__NYAM_DB_CONNECT_STR_WRITE**: DB connect string for read/write access

**APPLICATION__WEB_ROOT_DIR**: Physical path to the Web root directory

**APPLICATION__WEBMASTER_MAIL**: Web master email address

/ _lib/inc/Inc_CUESConstants.php contains additional application level configuration information for the search function. The following are the variables that you can modify:

$SYS_AdminName: The System Admin Name

$SYS_AdminPhone: The System Admin's Phone

$SYS_AdminEmail: The System Admin's Email address

- **Web Directory**
  - **templates/**: shared web GUI resources (css, javascript, template files)
  - **images/**: all the images used in the site
  - **_lib/**: shared php library resources (Database related library, various utility function library)
  - **CUES_search/**: search related web pages
  - **orginput/**: organization/program info update related pages
  - **_admin/**: intranet admin site related pages
  - **_log/**: application error logs will be kept under this _log/_error/
  - **config/**: contains complete PHP configuration HTML file for reference

**Database**

This Database section describes the nature of the data stored in the database, as well as a detailed instruction of how to bring the database in operation.

- **DB Structure Logical View**

The data structure of the core search function can be understood by studying the Logical View of the data structure. These can be found in Figures 5c-1, 5c-2, 5c-3. The hierarchy of the data in Figure 5c-a shows how a parent organization can have many Programs. And the details of the data for each programs are described in Figures 5c-2, 5c-3.

Both an organization and a program has contact information store independently since they might be located in a different location. A program contains detailed information such as a list of services under that program for each categories(violence, housing, drug, food, and job). Other offerings that the program provides includes in categories of certification, financial aids, and so on.

It is important to understand these diagrams in order to understand how data is presented and entered in the GUI interface. The details of how these data entities are physically stored are described in the next section.
Figure 5c-1: Organization data logical view

Organization Data Structure

Organization 1

Organization Information
- Organization Name
- Organization Description
- Director Name/Title
- Comments

Site Specific Information
- Contact Info: zip, state, city, mapquestAddr, address1, address2, tel, tel2, fax, email, url
- Bus Directions: Nearest Lines, Nearest Stops
- Subway Directions: Nearest Lines, Nearest Stops
- Accessibility Types on Site: Accessib. Type 1

Programs
- Program 1
Figure 5c-2: Program data logical view

(*)Note: Site specific information is defaulted to the values from its parent organization
Figure 5c-3: Program data logical view continued

Program Data Structure (Cont.)

- Other Program Benefits
  - Certifications
  - Financial Aids
  - Substances Treated
  - Alternative Treatment
  - Staff Types On Site
  - Languages Spoken on Site

- Admissions
  - Admissions Process
    - Admitting Hours
    - Avg. Adm. Waiting Period

- Appointments
  - Appointment Process
    - Appointment Required
    - Direct Call Required
    - Avg. Appt. Waiting Period

- Payments
  - Payment Process
    - Payment Required
    - Frequency of Payment

- Eligibility & Criteria
  - Genders
  - Age Groups
  - Populations

- Accepted Forms of Application
  - Male
  - Age Group 1
  - Population 1

- Feedback
  - Accept 1

- Payment Type
  - Payment Type 1

- Staff Types On Site
  - Staff Type 1

- Languages Spoken on Site
  - Lang. Spoken 1

- Accepted Forms of Application
  - Accept 2
  - Accept 1

- Staff Type 1

- Languages Spoken on Site
  - Lang. Spoken 1

- Application Types
  - Accept 2
  - Accept 1
DB Structure Physical View

For a database administrator, they are more concerned with how the data is structured physically on the database. A good understanding of the physical layout will allow the db admin to setup and maintain the database. This might include future addition/modification on the db to add new data and to make the db more efficient(via db tuning).

The physical arrangement of the db can be best understood by studying the Entity-Relationship diagram on Figure 5c-4. Unlike the logical view in the previous section, this physical view shows exactly how one-to-one, one-to-many and many-to-many relationship are stored physically on the db.

The physically layout is designed to accomplish several major goals:

- Support One-To-Many relationship of One Organization for Many Programs
- Support One-To-Many relationship of One Programs with Many Services, Offerings, Payment Types, Criteria
- Provide a convenient way to store “Semi-static” Data where a list of choices(services, offerings, payment types,…) can be modified and maintained as the system persists
- Maintain a structure that can make conversion of data from the Previous Access DB structure possible
- Normalization of data so content is stored efficiently

There are three classes of data tables classified as Dynamic, Semi-Static and Static which are described below.

**Dynamic data tables:**
Dynamic data are data that is modified on a regular (perhaps daily) basis by the system admin or by the Organization/Program owner as they modify information about their org/program. These tables are stored in the White colored tables in Figure 5c-4. Typically these data are modified via the GUI for org/program screens, or by the Admin screens during user registration which will affect the Users table.

**Semi-Static data tables:**
“Semi-Static” data tables contain data that might be modified by the data admin to change a list of choices available for services, program offerings, and payment type selections. These tables are colored in Green in Figure 5c-4. It is expected that these table are not modified on a daily basis. More likely these data are modified perhaps monthly to modify the list of choices by the system admin. Currently in order to modify these tables, the admin will need to modify the SQL load scripts where the list of choices resides. See section 6 under DB Maintenance-“How to add new choices” to understand the full procedure.

**Static data tables:**
The content of the Static data tables **should not** be modified by anyone, unless there is a major system re-design. These tables are colored Light Blue in Figure 5c-4. The interaction of the web codes(PHP) are dependent on that the content of these tables are intact. Any modification on these static tables **WILL** result in corruption of the entire system. Most of these tables contain fixed names for enumerated types that the web codes(PHP) relies on. The zips table is also static, since it contains zip code information, such as what are the nearest zip codes to a given zip code.
Figure 5c-4 – Entity Relationship Diagram (Data Physical View)
Setting up the Database

This section is written for the DB admin. The purpose is to describe how to setup the database for the CUES research guide. This will involve everything from creating the db tables and loading data into the tables. It is assumed that the reader of this section is familiar with MySql database administration procedures, and standard SQL statements.

Database Configuration

The first thing that needs to be done is to create a new database in MySQL. You'll then need to assign user privileges to that db.

The web system has a ini file that determines the location and username/pw of the database. Make sure the following two strings are set in “global.inc” in the web system which will point to the host, dbName, username, pw of the database you’ve just setup.

/Installation/Webcodes/_lib/global.inc
APPLICATION__NYAM_DB_CONNECT_STR_READ  : DB connect string for read access
APPLICATION__NYAM_DB_CONNECT_STR_WRITE: DB connect string for read/write access
• **Database Scripts**

Once the new db is created. There are 4 stages for populating the content of the database:
1) Script for Tables Creations
2) Script for Loading Static Data
3) Script for Loading Semi-Static Data (Choices)
4) Script for Loading Dynamic Data (Converted from the previous Access DB)

The location of all the SQL Scripts are located in “/Installation/Database/SQLScripts/”

DB Creation Procedure:

**Step 1a) Table Creation**
Run “CUES_TablesCreate_REV1.10.sql”. The first time you run this, you might encounter some errors. This is normal since the scripts tries to delete tables that doesn’t exist yet.

**Step 1b) Re-run Table Creation**
To be safe, rerun “CUES_TablesCreate_REV1.10.sql” a second time, to make sure there are not errors on the second run.

**Step 2) Load Static Data**
Run “CUESLoad_StaticTypes_v1.0.sql”. This will load static type data into DB.
Run “CUESLoad_StaticZipcodes_USA.sql”. This will load static data involving zip codes into DB.

**Step 3) Load Semi-Static Data**
Run “CUESLoad_Choices_v1.1.sql”. This will load in semi-static data with choices.

**Step 4) Load Dynamic Data (from DB conversion)**
Run “CUES_LoadDynDataConv_v1.0.sql”. This will load in dynamic data which were converted from the previous Access DB.

It is recommended that you setup the database in stages as described above. This way any problems along the steps can be caught and corrected. Alternative a complete SQL script is provided that should accomplish the same as above, but all in one step. If you choose to perform the single step approach, run the following SQL script:
“CUES_Complete_v1.0.sql” *(Running this script in one step is not recommended)*
• Other DB related files

There are other database related files that might be of interest for the db admin. They call be found under “/Installation/Database/SupportingFiles”

The following describes what they are:

“DataLayout_CUES_REV1.10.ppt” – PowerPoint file containing the DB Logical views which were outlined in Figure 5c-1, 5c-2, 5c-3.

“CUES_Rev1.10.pdf” – PDF showing the Entity-Relationship diagram(DB Physical View) which were displayed in Figure 5c-4.

“CUES_Rev1.10.ER1” – ERwin design file. You need to get a copy of ERwin 4.0 program from Computer Associates to open this file. This is a design file for designing the DB structure(Entity-Relationship diagram), and for automatic generation of SQL scripts.
System Administration

Administration pages are located on the NYAM Intranet and are only available to people inside the organization (i.e. Resource Guide Administrators).

After log-in to Administration pages, the user will have the following options: view all accounts; view requests for accounts / create passwords for these accounts; search accounts. Accounts can be viewed by user and by organization name. Two major views are available – by Account and by Organization (see top navigation bar).

New Account Requests

Administrators can click on “Account” top navigation bar and “New Request” link on the left bar in order to see requests for accounts coming from the public pages for the Resource Guide. Below is an example of pending account view:
The table shows all information input by the user when creating request. Additionally, request date and unique account ID are automatically inserted by the system. In order to create new user account for a given request, administrator needs to click on Create Account link in the Status column on the far right in the specific row.
After administrator clicks on “Create Account”, the following pop-up screen will appear:

The administrator will have to create a password associated with the user’s account. The following are the guidelines that should be followed when creating a password:

- Passwords should not be easily-guessed;
- Passwords should be at least 6 characters long;
- Should include both letters and digits;
- Should be different from the user’s name or organization (would make it easy to guess);
- Should not have dictionary words (could be cracked by unauthorized individuals).
After clicking on "Finish" button, the Administrator should see the following message:

Create Account Result

Account is successfully created

Close
Active Account List

By clicking on “Account List” on the left bar, the administrator can view all accounts and their statuses. (All are Active in this case.)

<table>
<thead>
<tr>
<th>Account Info</th>
<th>Organization</th>
<th>Registration</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. John Johnson</td>
<td>New York Hospital</td>
<td>u: <a href="mailto:jh@nyp.org">jh@nyp.org</a></td>
<td>Active</td>
</tr>
<tr>
<td>email: <a href="mailto:jh@nyp.org">jh@nyp.org</a></td>
<td>tel: 555-555-5555</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account Info</th>
<th>Organization</th>
<th>Registration</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Cedric Chua</td>
<td>Cedric Organization</td>
<td>u: <a href="mailto:cch@y.com">cch@y.com</a></td>
<td>Active</td>
</tr>
<tr>
<td>email: <a href="mailto:cch@y.com">cch@y.com</a></td>
<td>tel: 555-555-5555</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account Info</th>
<th>Organization</th>
<th>Registration</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. John Smith</td>
<td>Counseling for All</td>
<td>u: <a href="mailto:jsmith@abc.com">jsmith@abc.com</a></td>
<td>Active</td>
</tr>
<tr>
<td>email: <a href="mailto:jsmith@abc.com">jsmith@abc.com</a></td>
<td>tel: 555-555-5555</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account Info</th>
<th>Organization</th>
<th>Registration</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Tanya L</td>
<td>Teen Services of New York</td>
<td>u: <a href="mailto:tanya@n.com">tanya@n.com</a></td>
<td>Active</td>
</tr>
<tr>
<td>email: <a href="mailto:tanya@n.com">tanya@n.com</a></td>
<td>tel: 555-555-5555</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account Info</th>
<th>Organization</th>
<th>Registration</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Goro Kamata</td>
<td>Goro Rehabilitation Center</td>
<td>u: <a href="mailto:goro@k.com">goro@k.com</a></td>
<td>Active</td>
</tr>
<tr>
<td>email: <a href="mailto:goro@k.com">goro@k.com</a></td>
<td>tel: 555-555-5555</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Account Search Utility

This utility will become very helpful when the list of accounts on NYAM Resource Guide will grow substantially. The utility allows searching for specific accounts by entering the following parameters:
Organization View

Provides a view of all accounts and their statuses by Organization. Administrator should be allowed to modify Organization information from this screen by clicking on “Modify” link in the far right column for a specific organization’s record.

Database Maintenance

- How to add new choices

In order to add new Site Attributes, Service Categories, Program Offerings, Target Criteria or Payment Types you must update the Cues Load Choices load script. See the Choices Load Script in the Database section of the Installation Guide. The order in which the entries are made will dictate the order they appear in the list boxes on the web site. Currently, they are alphabetical. If you want an item to appear in a different order, modify the script entries to the order
of your choosing. Also, certain characters are prohibited for the choices. Make sure the choices DO NOT contain the following characters: single quote, double quote, comma, <, > or \ 

For each Site Attribute that you would like the database to contain, you must have a line in the script like this:

   INSERT INTO SiteAttribute Choices(SiteAttributeType_id, SiteAttribute_Name) VALUES (1, 'Site Attribute Name')

For each Service under each Service Category that you would like the database to contain, you must have a line in the script like this:

   INSERT INTO ServiceChoices(ServiceCategory_Id, Service_Name) VALUES (1, 'Violence Service Name')
   INSERT INTO ServiceChoices(ServiceCategory_Id, Service_Name) VALUES (2, 'Housing Service Name')
   INSERT INTO ServiceChoices(ServiceCategory_Id, Service_Name) VALUES (3, 'Drug Service Name')
   INSERT INTO ServiceChoices(ServiceCategory_Id, Service_Name) VALUES (4, 'Food Service Name')
   INSERT INTO ServiceChoices(ServiceCategory_Id, Service_Name) VALUES (5, 'Employment Service Name')

For each Program under each Program Offering Type that you would like the database to contain, you must have a line in the script like this:

   INSERT INTO ProgramOfferingChoices(ProgramOfferingType_Id, ProgramOffering_Name) VALUES (1, 'Certification Program Name')
   INSERT INTO ProgramOfferingChoices(ProgramOfferingType_Id, ProgramOffering_Name) VALUES (2, 'Financial Aid Program Name')
   INSERT INTO ProgramOfferingChoices(ProgramOfferingType_Id, ProgramOffering_Name) VALUES (3, 'Substance Treatment Program Name')
   INSERT INTO ProgramOfferingChoices(ProgramOfferingType_Id, ProgramOffering_Name) VALUES (4, 'Alternate Treatment Program Name')
   INSERT INTO ProgramOfferingChoices(ProgramOfferingType_Id, ProgramOffering_Name) VALUES (5, 'Staff Type Name')
   INSERT INTO ProgramOfferingChoices(ProgramOfferingType_Id, ProgramOffering_Name) VALUES (6, 'Payment Type Name')
   INSERT INTO ProgramOfferingChoices(ProgramOfferingType_Id, ProgramOffering_Name) VALUES (7, 'Staff Language Name')

For each Target Criteria under each Target Criteria Type that you would like the database to contain, you must have a line in the script like this:

   INSERT INTO TargetCriteriaChoices(CriteriaType_Id, TargetCriteria_Name) VALUES (1, 'Gender Criteria Name')
   INSERT INTO TargetCriteriaChoices(CriteriaType_Id, TargetCriteria_Name) VALUES (2, 'Age Criteria Name')
   INSERT INTO TargetCriteriaChoices(CriteriaType_Id, TargetCriteria_Name) VALUES (3, 'Population Criteria Name')

For each Payment Type that you would like the database to contain, you must have a line in the script like this:

   INSERT INTO PaymentTypeChoices(PaymentType_Name) VALUES (1, 'Payment Type Name')

- How to use dataEditor to browse dynamic data
During the development of this system, a tool was developed to allow the developer to quickly browse the data in the physical form for debugging purposes. This web based tool is called “Data Editor” which is located in “/Installation/Webcodes/ _admin/CUES_dataEditor.php”. The tool allows the user to browse and modify the content of the DB directly. Due to the nature of the tool it should only be available to the system admin, within the secured intranet site.

Although this tool was developed by the developer as a debugging tool, it might be useful for the system admin to browse the data in the system directly. It is highly recommended that the user of this tool have a good understanding of the database structure in both the Logical View and Physical View as described in Section 5c – Database. This tool can be very powerful, since it allows the user a direct view to the database. However, since it isn't designed to be used by any user other than the developer, it is not extremely user friendly. It is also not advisable for the sys admin to use this tool to modify the database, since an accident modification can corrupt the database. Buttons labeled “New Entry”, “Update”, “Delete” should not be pressed to avoid modification of the DB(most likely by the time this system is handed over, the developer will disable these features to avoid a potential disaster).

The current Data Editor allows the user to browse the dynamic data of the database. So for example the user can quickly browse a list of organizations, drill down on one of the organization and see all its attributes and its children Programs, and then further drill down on those programs to see the program’s attributes and its children objects such as services, payment types, … and so on.

Figure 6b-1 shows the home page of the data editor, where the user can select an object type to browse. After selecting “Organization” for example, a list of all organizations in the system will be shown in Figure 6b-2. You can then proceed to drill down onto a particular organization by pushing the “Select” button next to the desired organization. Figures 6b-3a through 6b-3c shows some of the data shown after drilling down on a particular organization. Toward the bottom of the screen Figure 6b-3c, it will show a list of children Programs that belong to that Organization. You will be able to drill down further on a selected organization. Details for that program will then be shown, along with lists of children object such as the services that is part of that program, and the program offerings that is a part of that program. There are too many screens to show, so it is up to the user to explore these screens.

An example of a useful thing that the sys admin can do with the Data Editor is to list out all the services that exists in the systems. These are not the semi-static service choices, but they are the dynamic content that org/program owners have entered in the system. This can be accomplished by selecting the “Service” object in the home page. Figure 6b-4 will show up with a full list of these services. The sys admin can copy and paste this table into an Excel for further analysis if necessary.

There can be many enhancements that can be made to this tool, including the ability to view/modify semi-static data content such as choices. However the developers did not have enough time to implement these features. Additional work can be done to make the system more user friendly by improving the navigational aspect of the application. Display of the data can also be improved, such as controlling the # of entry to be shown at a time.

In summary this data editor tool can be potentially very useful to the sys admin, but due to the prototype nature of this application, the user need to use with care, and need to understand the data structure before attempting to use it. There is also a great potential to expand on the usability and function of this application.
Figure 6b-1: Home page of Data Editor

Object Type Selection

Select: Obj Organization
Select: Obj Program
Select: Obj Contact Info
Select: Obj Directory
Select: Obj Payment Type
Select: Obj Program Offering
Select: Obj Service
Select: Obj Site
Select: Obj Site Attribute
Select: Obj Target Criterion
Select: Obj Zip

Figure 6b-2 – List of organization in system, after selecting “Organization”

Object Listing

Organization List
(Object Count = 13)

<table>
<thead>
<tr>
<th>Select</th>
<th>Organization_Id</th>
<th>Organization_Name</th>
<th>Status</th>
<th>Comment</th>
<th>Director</th>
<th>OrganizationDoc</th>
<th>Site_Id</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select</td>
<td>1</td>
<td>Harlem Hospital Center</td>
<td>1</td>
<td>None</td>
<td>Dr Jose</td>
<td>This hospital services the harlem area</td>
<td>3</td>
</tr>
<tr>
<td>Select</td>
<td>2</td>
<td>Test Organization Name</td>
<td>1</td>
<td>Text Comment</td>
<td>Test Director</td>
<td>Test OrganizationDoc</td>
<td>9</td>
</tr>
<tr>
<td>Select</td>
<td>3</td>
<td>Test Organization Name</td>
<td>1</td>
<td>Text Comment</td>
<td>Test Director</td>
<td>Test OrganizationDoc</td>
<td>15</td>
</tr>
<tr>
<td>Select</td>
<td>5</td>
<td>Test Organization Name</td>
<td>1</td>
<td>Text Comment</td>
<td>Test Director</td>
<td>Test OrganizationDoc</td>
<td>27</td>
</tr>
<tr>
<td>Select</td>
<td>6</td>
<td>Test(C) Organization Name</td>
<td>1</td>
<td>Text(C) Comment</td>
<td>Test(C) Director</td>
<td>Test(C) OrganizationDoc</td>
<td>31</td>
</tr>
<tr>
<td>Select</td>
<td>7</td>
<td>Test(C) Organization Name</td>
<td>1</td>
<td>Text(C) Comment</td>
<td>Test(C) Director</td>
<td>Test(C) OrganizationDoc</td>
<td>36</td>
</tr>
</tbody>
</table>
Figure 6b-3a thru 6b-3c: Shows some of the screen shots after clicking on the detail of an organization.

**Figure 6b-3a**

**Object Detail**

**Organization**

<table>
<thead>
<tr>
<th>TagName</th>
<th>Value</th>
<th>DataTypes</th>
<th>AttrType</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization_Id</td>
<td>1</td>
<td>DT_NUMBER</td>
<td>AT_AUTOKEY</td>
</tr>
<tr>
<td>Organization_Name</td>
<td>Harlem Hospital Center</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>Status</td>
<td>1</td>
<td>DT_NUMBER</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>Comment</td>
<td>None</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>Director</td>
<td>Dr. Jones</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>OrganizationLoc</td>
<td>This hospital services the Harlem area</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>Site_Id</td>
<td>3</td>
<td>DT_NUMBER</td>
<td>AT_STANDARD</td>
</tr>
</tbody>
</table>

**Figure 6b-3b**

**ContactInfo**

<table>
<thead>
<tr>
<th>TagName</th>
<th>Value</th>
<th>DataTypes</th>
<th>AttrType</th>
</tr>
</thead>
<tbody>
<tr>
<td>contact_Id</td>
<td>3</td>
<td>DT_NUMBER</td>
<td>AT_AUTOKEY</td>
</tr>
<tr>
<td>zip</td>
<td>10037</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>state</td>
<td>NY</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>city</td>
<td>New York</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>address1</td>
<td>580 Lenox Avenue</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>address2</td>
<td></td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>country</td>
<td>US</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>tel</td>
<td>(212) 939-1000</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>tel2</td>
<td></td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>fax</td>
<td>(212) 939-2222</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>mail</td>
<td><a href="mailto:Dummy@email.com">Dummy@email.com</a></td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>registered_date</td>
<td>2001-01-01 00:00:00</td>
<td>DT_DATETIME</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>status</td>
<td>1</td>
<td>DT_NUMBER</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>category1</td>
<td>1</td>
<td>DT_NUMBER</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>category2</td>
<td>1</td>
<td>DT_NUMBER</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>category3</td>
<td>1</td>
<td>DT_NUMBER</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>url</td>
<td><a href="http://www.a.org/2.html">http://www.a.org/2.html</a></td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>street</td>
<td>None</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
<tr>
<td>map_pointAddress</td>
<td>580 Lenox Avenue</td>
<td>DT_STRING</td>
<td>AT_STANDARD</td>
</tr>
</tbody>
</table>
Figure 6b-3c – List of Programs to select from, after selecting a particular Organization

<table>
<thead>
<tr>
<th>Program_Name</th>
<th>Program_Details</th>
<th>Director</th>
<th>Admissions_Staff</th>
<th>Average_Length</th>
<th>Frequency_Of_Program</th>
<th>Admitting_Hours</th>
<th>Operating_Hours</th>
<th>Client_Capacity</th>
<th>Admission_Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renaissance Health Care Network Diagnostic &amp; Treatment Center</td>
<td>Dr. Smith</td>
<td>Ms. Gallagher, M.D.</td>
<td>2-5 months</td>
<td>weekly</td>
<td>2:00pm-6:00pm</td>
<td>Monday-Friday</td>
<td>Call for appointment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select 2

Select 1

Select 1

Figure 6b-4 – Service Selection screen after Selecting “Service” object from Home page

Object Listing

Service List

<table>
<thead>
<tr>
<th>Program_Name</th>
<th>ServiceCategory_Id</th>
<th>Service_Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1Service_Name</td>
<td>1</td>
<td>Test 1Service_Name</td>
</tr>
<tr>
<td>Test 2Service_Name</td>
<td>1</td>
<td>Test 2Service_Name</td>
</tr>
<tr>
<td>Test 3Service_Name</td>
<td>1</td>
<td>Test 3Service_Name</td>
</tr>
<tr>
<td>Test 4Service_Name</td>
<td>1</td>
<td>Test 4Service_Name</td>
</tr>
<tr>
<td>Test 5Service_Name</td>
<td>1</td>
<td>Test 5Service_Name</td>
</tr>
<tr>
<td>Test 6Service_Name</td>
<td>1</td>
<td>Test 6Service_Name</td>
</tr>
<tr>
<td>Test 7Service_Name</td>
<td>1</td>
<td>Test 7Service_Name</td>
</tr>
</tbody>
</table>

New Entry
Known Issues / Restrictions

This section documents known major issues and restrictions with the system. Please note that this section only documents critical issues with this system.

Restricted Characters/Tags of System

Certain characters entered in the system can cause detrimental effect/errors to the system. These are single quote (‘), double quote (“), back slash (\). If any of these characters are entered in the system via the GUI, they will be stripped. If these characters are loaded into the database via SQL scripts, the effect is unknown, depending on which table contains these restricted characters.

HTML tags entered into the system will also cause detrimental effect on the display of the data.

This deficiency although known to the developers, there was not enough time to address them fully.

Max Length of text fields

Most text fields in the database are limited to 254 characters. To avoid error in inserting into the database, any text entry that exceeds 254 characters will be trimmed to this limit.

Excessively long words

If a text string is entered with an extremely long word (where words are separated by spaces), the display of these words can cause a very poor layout (by stretching the cell that is displaying the word) of the organization and program detail screens. This is because these long words are not properly wrapped in the displayed tables. It is up to the user to preview these screens, and break up long words with spaces to avoid this problem. A long paragraph with many short words will not cause this problem. A long word is roughly a word containing 30+ characters continuously w/o spaces.

Data Conversion

Although the design of the current DB is intended to allow conversion of the data from the previous Access DB possible, there was a significant modification made to the original DB structure. This was necessary to accommodate the needs of the users. Because of this, the old data cannot be mapped directly to the new db structure. A best attempt was made to convert as much data as possible, while some data might be lost either it is no longer relevant, or the conversion of those data is too difficult. Some assumptions are also made during data conversion process, where there are new fields in the new system that did not exist in the previous db.

As of this document is written, the following data are converted to the new system:

1) Basic information of the organizations (Org Name, street address, phone/fax numbers, bus directions, subway directions)
2) Basic information of the programs (Prog Name, street address, phone/fax numbers, bus directions, subway directions). Note that the address, phone numbers and directions are assumed to be same as its parent organization, since the previous db never had provisions to store these info on the program basis (they were stored on the org level)
3) Some of the detailed Program information including: director, admin staff, admitting hours, operating hours, comments, payment_required, client_capacity, length of program, avg wait period for admissions, avg wait period for appointment, frequency of payment
4) Organization/Program hierarchy are maintained. (i.e. which Program(s) belong to which Organization)
By the time the system is delivered the following data is also planned to be converted (if time permits, there is no guarantee that how much of the followings will be completed in time):

1) URL and Email of Programs
2) Types of Payment of a Program
3) Primary service lists of a Program. The category (food, violence, employment, drug, housing) of these services will be assumed to same as the category type of the program in the old db
4) Program Offering Lists of a Program. The categories include Certification, Financial Aids, Substance Treated, Alternative Treatment, Staff Type, Staff Languages

The following is a list of data that are very difficult to convert. These most likely won’t be converted by the time the system is handed off. Attempt to convert these data might require a great amount of manual work:

1) Target Criteria lists of a program in categories of Gender, AgeGroup, Population and Accepted Method of application.
2) Exclusion criteria will not be converted, but this is because it is no longer relevant to this system.

There are many items that are proposed to improve the function and look/feel of the system. But they are beyond the scope of this section.
Recommendations

Communication

To enhance communication for Organization Program owners, the system could be enhanced by:

- Adding a discussion forum (see below)
- Setting up mailing list notification groups to email information regarding important events, newsletters, etc. to the user community.

Discussion Forum FAQ

Q: What is an Online Community?
A: Online communities are typically comprised of: 1. content – articles information and news about a topic of interest to a group of people; 2. forums or newsgroups and email so the community members can communicate in a delayed fashion; and, 3. chat and instant messaging so members can communicate more immediately.

Q: Why should an organization create an online community?
A: Online communities
• add a sense of belonging to a web site, which can encourage repeat visits and more interest in the site as a whole.
• provide “richer, more varied content, as you don’t have just one moderator creating content for the site, but rather many people joining in with their opinions and feelings.
• allow you to gain more instantaneous feedback so that you can better respond to your users needs.
• create personal relationships with the members. This can help get information rapidly disseminated, as well as increase use through word of mouth.

Q: What does it take to make an online community work?
A: At minimum, you must have the following two things:
• Resources that are devoted to the project. Building and maintaining successful communities takes a lot of work. The communities must be administered, monitored, updated, moderated, cultivated, purged, etc.
• An audience with a big enough passion for the topic to sustain a community. Are there enough people that want to get together to discuss the issues?

Q: Can you outline any tips for building an online community?
A: Here are five tips:
• “test the water” – before investing time and money to create your own community, set up a discussion within an existing large, successful forum. Excite’s People and Chat channel, for example, lets you open a folder or a message area that you can link to from your site. It also lets you track usage so that you can gauge your audience’s interest and participation.

• “make it a party” – welcome new members when they register or post messages for the first time and establish areas that contain useful information to new members. The object is to make members feel included and encouraged to participate.

• “have 'em waiting at the door” – send invitation to members of your potential audience before you launch the service. Build enthusiasm and expectation.

• “use your entire site to seed discussions“ – make sure links to the forum are prominent and plentiful throughout your site.

• “recruit help” – you will need a moderator to read new postings, remove junk postings, organize discussions, set the tone, enforce rules and encourage conversation.

Q: What is a discussion forum?
A: A discussion forum or web conference can be used to describe a wide array of services – from chat rooms to teleconferences to real time video conferencing. For our purposes, a “forum” will mean a discussion forum, a “text-based, asynchronous group discussion.”

Q: What makes a forum successful?
A: There are four elements to a successful forum:

• Clear Purpose – Unless your forums fulfill a clearly identifiable purpose, they are likely to languish. It's absolutely critical to define a specific purpose that distinguishes your conferences from all the others out there. You are most likely to succeed if your forums address the immediate, real-world needs of your constituency.

• Experienced Hosts – A forum host, or moderator, is someone who takes primary responsibility for the care and feeding of an online conference. The host sets the tone, establishes ground rules, initiates topics of discussion, encourages participation, and generally tries to ensure that the conference serves the purpose for which it is intended. This role is especially important in the early stages of conference building, as it takes a considerable amount of planning and effort to get a forum off the ground. Once a critical mass of participants has joined, the host can usually relax a bit and let the discussion roll along on its own steam, but it still helps to have someone keeping a watchful eye over the proceedings.

• Interested Participants (that have the equipment, training, time and motivation)

• Good Software

Q: What types of software are available?
A: There are five general types of conferencing software that are available: centralized forums, groupware, bulleted board systems, usenet and mailing lists.

• Centralized forum software originated on mainframes in the early to mid-1970's. It is designed specifically for group discussion, and treats messages as part of an ongoing conversation with some inherent structure. Discussions are stored on one central computer, and each new message is assigned a place in the discussion structure immediately upon being posted. Over the years this line of software has evolved sophisticated features for managing and participating in conversations.
Groupware, or workgroup collaboration software, is an offshoot of centralized forum software. But whereas forum software is focused primarily on group discussion, groupware products support a wide variety of other activities, such as scheduling and document sharing. They are marketed mainly to corporate customers for internal use by workgroups, where conversation is generally deemed less important than an efficient workflow.

Bulletin Board Systems (BBS) were pioneered by microcomputer hobbyists in the late 1970's. They were designed mainly for swapping files, but also featured areas where users could post notices. Each message was treated as an independent entity with no relationship to any other message, and all were posted on one big "bulletin board" with no organization. Later, features began to appear for categorizing messages, responding to specific messages, and carrying on threaded discussions. But in general, BBS software is not as well adapted to conversation as the centralized forum software is.

Usenet arose in the early 1980's. Like BBS software, Usenet was designed to handle individual messages, although it provides separate newsgroups to sort messages by broad subject areas, and facilities for responding to specific messages. Usenet has two main distinguishing characteristics: first, it uses standardized protocols to format and transmit messages, and second, messages are passed from one news server to another and thus replicated at many places around the world, rather than being stored at one central location.

Some argue that with Web browsers supporting the Usenet standard, there is no need for any other conferencing software on the Web. Just set up a news server using free, standard software, create some local newsgroups on it, have your users access your server with their favorite news-capable Web browser (or any other newsreader, for that matter) and voila! a conferencing site.

E-mail is the least structured form of conferencing -- so much so that it's a stretch to call it conferencing at all. However, it has certain advantages. It reaches more people than any other avenue. Also, e-mail messages simply show up in your mailbox; you don't have to go looking for them. On the other hand, e-mail is not organized by topic, and threading is difficult or impossible. For this reason, mailing lists are not as good at supporting multiple simultaneous discussions as are true conferencing systems.

Q: When choosing software, what things should be considered?
A: There are a number of things to consider, including:
- Price – pricing ranges from free to thousands of dollars, but the more expensive software isn’t necessarily any better than the freeware.
- Operating System Support – most products are designed for Unix or Windows, but not both. Your environment will limit your choices.
- Administrative Capabilities – depending on how sophisticated you need to make the forum’s administration (remote, delegated, etc.) different products will be more suited to your needs.
- Customizability – different products allow varying degrees of customization. Freeware typically comes with full source code, allowing you to create anything you want.

Q: What features does “good” conferencing software have?
A: Conferencing software should have:
- Separate conferences for broad subject areas
- Threaded discussions within conferences
- Informative topic list
- Respect for topic integrity - ability to start at the beginning of a topic and read all the way through
• Support for both frequent readers and casual browsers - the ability to easily skip forwards and backwards, scroll and sort topics
• Search and filter tools
• Access control – public and private (limited access) topics
• Host tools – easy tools for managing topics
• Speed

Q: What is the difference between threaded and linear program types?
A: Message threading stores messages in a hierarchical or tree structure, versus a linear order. Here is some commentary regarding the 2 types of structures:
• Although a hierarchical tree is a good way to organize static information, it does not work as well for conversation. It is easy to get lost in the tree, and it's often hard to figure out where to attach a response. Discussions tend to fragment and dissipate. I prefer a linear structure, in which each topic has a simple chain of consecutive responses attached to it. This form is easily understood by most people because it closely resembles "real life" conversation. On the Web there is an additional reason to use this structure: displaying a discussion as a continuous stream of text keeps interactions to a minimum. Since you don't have to click a button on every response, there are fewer delays while reading messages. 

• When we started our software search we thought we wanted a forum that offered message threading—this is a type of organization that stores messages in a hierarchical rather than a linear order. Unfortunately what we found when we got deeper into our research is that no program offering message threading implements it well. Navigating up or down or across the "branches" of the message hierarchy "tree" requires server access, which means you rarely get to read two messages in a row before you have to request the next message from the server and then wait for the server to download it to your computer. Message threading slowed down the process of following a complete discussion so much that we ended up turning it off when we ran a demo of a program that offered threading as an option. A program that dribbles out messages one at a time and requires users to keep asking for the next one is going to be so slow as to drive people away in frustration. Most programs force users to access the server too often, slowing down the process of reading discussions to an unacceptable crawl and making the process of referring back to earlier messages in a discussion much too onerous. 

• Most threaded boards sort by the time of the top level posting and new posts move discussions further down the first (main) message page. Moving even active discussions down the page and eventually onto other pages. The popularity of such programs could be increased simply by changing the sorting order. Most linear programs sort message by time of last post. A reply in a discussion moves the discussion to the top of the page. This is one feature more threaded programs should incorporate based on the responses from this survey.

• Another oft cited disadvantage of linear forums was not about the handling of messages (it's not really threading) but breaking messages into too many categories. Some administrators categorize too much, as if filing message neatly away in a filing cabinet, and interfere with the flow of discussion.

• It is important to note that the linear programs were PHP based whereas the threaded ones were mostly perl programs. The sole exception was one site that uses Phorum, a threaded PHP program. The gamut of threaded programs ran from WWWboard to Phorum and none of them are a match feature wise to most of the PHP linear (or linear based hybrid) programs. The linear PHP programs have a more developed feature set overall, from various registration methods to showing the birthdays of forum members. Some of the reasons cited for preferring linear programs were based on the capabilities of PHP programs.
• Those who prefer threaded boards like discussions being able to branch off without interfering with the original topic and they like the clear parent-child relationship between posts. Proponents of linear forums like not having to open all messages and the other features of linear programs (see PHP vs. perl above).

• We haven't been able to figure out why so many developers are married to the threaded rather than the linear model of interaction, when threaded messaging is so clearly unsuited to the Web, makes programs run slowly, and renders discussions unnecessarily difficult to read. Bill Machrone’s PC Week column, Before the Discussions: Big Decisions, addresses the pros and cons of using a threaded versus a linear interface along with a few other considerations. We have yet to see any program with well-implemented threading. Listen closely: good message management obviates the need for a threaded message base.

Q: What things should I look for when comparing vendors?
A: When choosing a vendor, carefully consider the following:
• Is the vendor’s web site well maintained and easy to use?
• Does the vendor offer easily accessible, free demos of the software?
• Does the vendor have a forum that uses its software?
• Does the vendor provide links to customers’ sites that use its software?
• Do you like the look and feel of the program? Is it intuitive and easy to use?
• Is there plentiful documentation and available support?
• Is the required technical environment compatible with yours?
• Can you do your work via a browser or do you need to telnet or FTP to your site?
• Does their program require a daemon running in the background 24 hours a day? A program that requires a daemon will be much more expensive and difficult to both run and maintain than a program that doesn't.

Q: What vendors are worth investigating further?
A: According to forumhosts.com, “There is no web conferencing program available at any price that we consider excellent, or even particularly good. If we were putting a new, small, special-interest forum online today*, we would thoroughly investigate Discus, vBulletin, and phpBB. But if your forum will be “mission critical” in any way and you own your server (and you have very deep pockets), you should consider WebBoard, Web Crossing, or any of the other (linear) web conferencing programs available from larger commercial software companies.”

* This reference was published in December 2001, however the leading programs appear to still be relevant today.

Q: How do these programs compare?
A: See Chart below:
Q: Where can I find links to other vendor sites?
A: David R. Wooley’s “Forum Software for the Web” site is a tremendous resource:  
http://thinkofit.com/webconf/forumsoft.htm

Discussion Forum FAQ Reference List:

A  “Why Create an Online Community”

B  “Will community work for you?”

C  “10 Tips for building online communities”

D  “Making Online Forums Work for Community Networks”
http://thinkofit.com/webconf/afcnart.htm

E  “Choosing Web Conferencing Software”
http://thinkofit.com/webconf/wcchoice.htm

F  “Choosing Web Conferencing Software”
http://www.forumhosts.com/fortip.htm

G  “Survey on Forum Program Types”
http://techcellence.net/pn/forums-survey.htm

H  “Web Conferencing Software Reviews”
http://www.forumhosts.com/reviews.htm
**System Maintenance Tool Enhancements**

- Develop a GUI to add/remove/modify choices
- Develop a reporting tool to summarize database content
- Add an audit trail for organization / program history

**Search System Enhancements**

- Add more detail, like the ability to click on a service and get a description of what it is, along with a list of other programs that offer the same or a similar service.
- Add an advance search engine that allows searching across more criteria and against free text.
- A system that would make recommendations, e.g., “based on the program you selected, you might also be interested in…”
Upon successful login:

First Time User:
- View Organization Information
  - (org_input.phtml)

Step 1 – Modify Organization Information
- Enter new / modify existing program
  - (org_input.phtml)

Step 2 – Program Information
- (prog_input_proginfo.phtml)

Step 3 – Program Address
- (prog_input_address.phtml)

Step 4 – Program Admissions
- (prog_input_addmission.phtml)

Step 5 – Appointments
- (prog_input_appointment.phtml)

Step 6 – Services
- (prog_input_service.phtml)

Step 7 – Payments & Comments
- (prog_input_payment.phtml)

New User Registration
- (registration.phtml)

Login
- (login.phtml)

Main Menu
- (main.phtml)

View Program Information
- (prog_input_program.phtml)

Delete Program
- (prog_delete.phtml)
Resource Guide High Level Site Map

Public Access

Guide Home (guidehome.html)

Search Results

New/Modified Search

Login

Organization / Program Input Pages

Authorized Provider Access

General Search

No Results Returned

(View Program Information)

(View Organization Information)

(MainSearch_1.php)

(SrchError_3.php)

(SrchResult_2.php)
Resource Guide Administrator’s Site Map

Main Administration Page

Account
- New Account Requests
  - Create Account
- Account Search Utility
- Account List

Organization
- View all organizations and their accounts with statuses
  - Modify Organization Information
- Organization Search

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