Project Design

nSite Central Software Suite

developed by
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Version 1.0

Table of Contents

Introduction....3

Class Hierarchy Chart....4

UML Diagrams....5

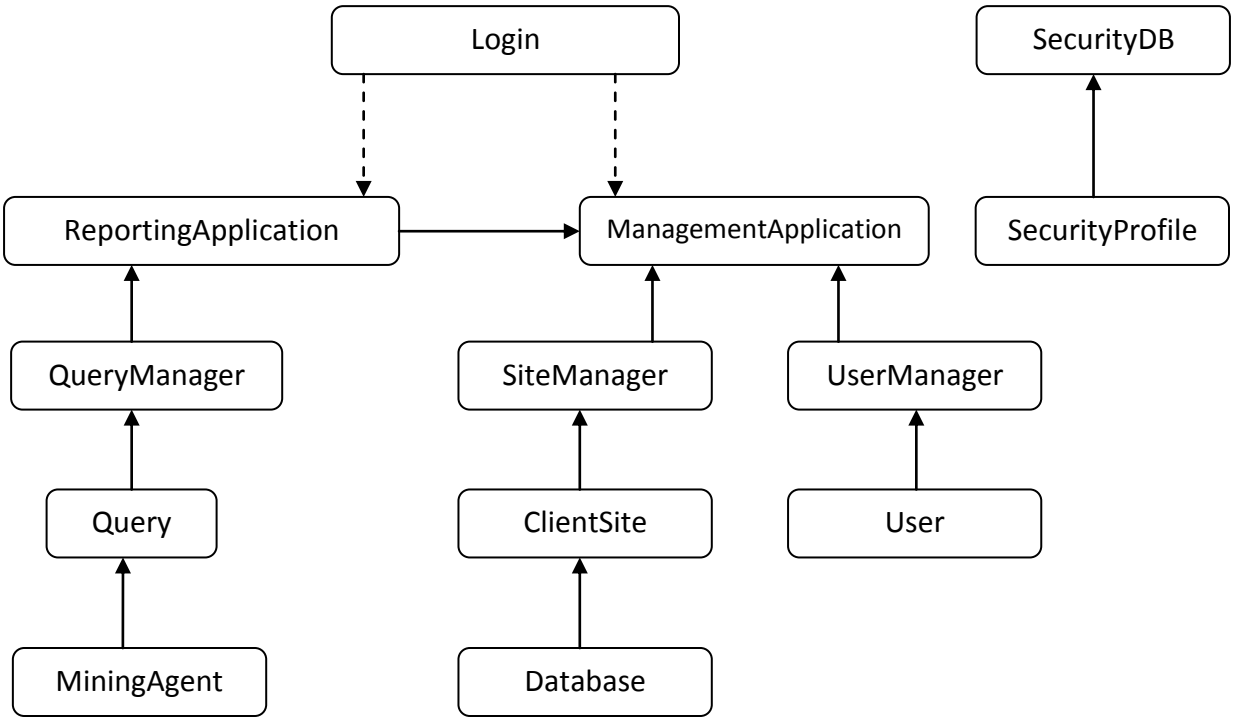
GUI Screenshots....8

Introduction

This document outlines much more specific information than the previous documents in terms of actual implementation details used in the development of nSite Central. This document consists of three main sections: a class hierarchy chart detailing all the classes needed to develop nSite Central and their relationships with each other, UML diagrams of each class, and example screenshots of what the GUI currently looks like.

Class Hierarchy Chart

The following diagram shows all the classes necessary to implement nSite Central and their relationships with each other.



To briefly summarize the relationships between these classes, Login is a standalone class which deals with determining whether a user can access the system. If the user can access the system, then Login determines the application to which the user can connect. ReportingApplication allows regular users to make, subscribe to, and view the results of queries (depending on their permission levels, of course). ManagementApplication encompasses all the functionality of ReportingApplication, but also allows superusers the ability to manage connections to ClientSites and to manage Users. SecurityDB stores all security-related data, such as access level information for all security items, and is accessed by any classes needing to validate information or authenticate certain users or actions, among other things. QueryManager maintains a list of Queries that have been made. Each Query generates a new MiningAgent to fetch the results of the SQL query passed to itself.

UML Diagrams

Each UML diagram listed below contains the name of the class, a brief description of the class, and the data members and functions of the class. These diagrams are subject to change as design details continue to be finalized.

Login
The Login class is responsible for allowing users to login by letting them supply a username and password, authenticating each user by cross-referencing the security database, and determining which application, the Reporting or Management, to instantiate for the user.
accountType **username** **password**
validate() **runApp()**

ReportingApplication
The ReportingApplication class is responsible for displaying the interface for users to make, view, and subscribe to queries.
Privileges
createQueryManager()

ManagementApplication
The ManagementApplication class is responsible for allowing a privileged user to not only access the ReportingApplication with full access, but also for allowing such a user to access the site manager and user manager interfaces.
Privileges
createQueryManager() **createSiteManager()** **createUserManager()**

SiteManager
The SiteManager class is responsible for managing connections to various client sites.
clientSite[]
addClientSite() **deleteClientSite()** **modifyClientSite()**

UserManager
The UserManager class is responsible for managing all users, including administrators.
user[]
addUser() **deleteUser()** **modifyUser()**

QueryManager
The QueryManager class is responsible for managing all queries made by users. If a user wants to view the results of a query, the QueryManager accesses the results of the desired query inside that particular class instance and displays them to the webpage.
queries[] **subscriptionList**
addQuery() **deleteQuery()** **subscribeToQuery()** **unsubscribeToQuery()**

ClientSite
The ClientSite class is responsible for storing all information about a particular client site.
Database
connectToDatabase() **createDabatase()** **deleteDatabase()** **updateDatabase() // this is a default function for making any modifications to the database**

User
The User class is responsible for storing information about a particular user.
securityProfile
addSecurityProfile() **deleteSecurityProfile()**

Query
The Query class is responsible for storing an SQL query made by a user. It passes itself to a mining agent, which returns the results of the SQL query back to the Query after querying all client sites. The query then stores the results of its SQL query. Every Query only contains one SQL query and will create only one mining agent.
SQLquery **queryResults** **miningAgent**
createMiningAgent() **getQuery()** **setQuery()** **getResults()** **setResults()**

MiningAgent
The MiningAgent class is responsible for collecting and returning the results of a particular SQL query.
queryResults **destinationSite // a struct that contains all info necessary to connect to dest site**

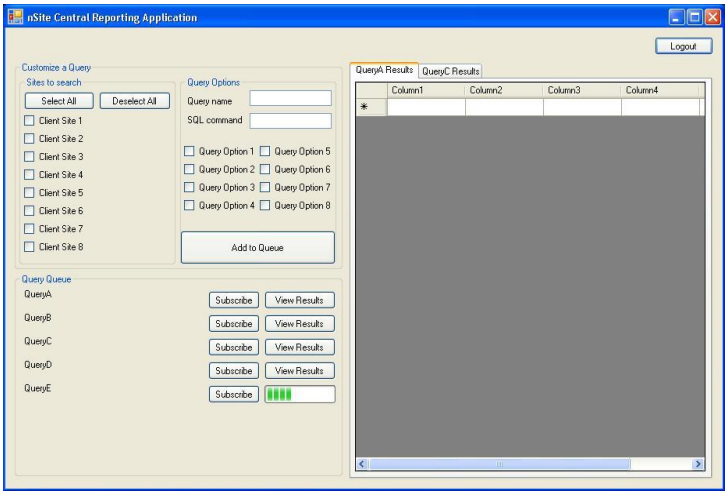
SecurityDB
The SecurityDB class is responsible for authentication.
securityProfiles[]

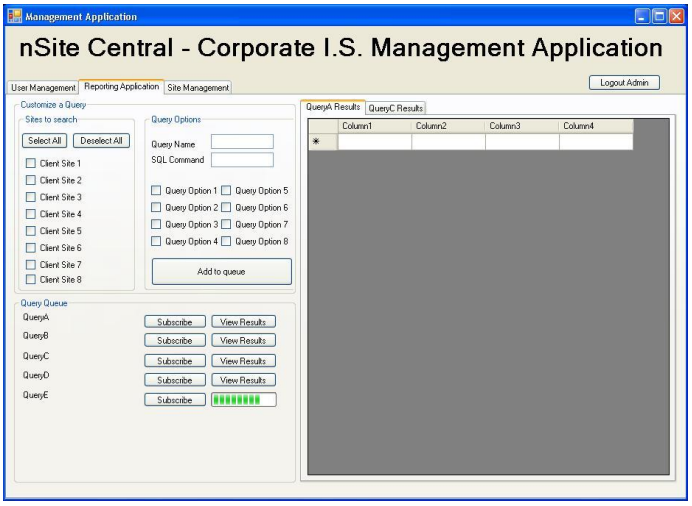
Database
The Database class is responsible for storing information on a client site.
ipAddress **portNumber** **domainName**

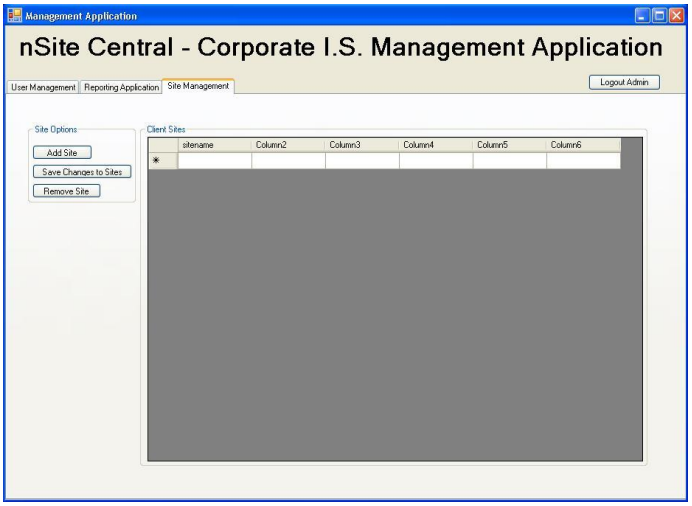
SecurityProfile
The SecurityProfile class is responsible for maintaining a default set of access level permissions for each security item.

GUI Screenshots

The graphical user interface of nSite Central will ultimately be developed using ASP.NET; however, below are several screenshots developed using C# in Microsoft Visual Studio 2005 to gain a better understanding of what the GUI of nSite Central will look like. Note that these are still rough ideas and are subject to change, but many of the ideas in these screenshots will likely be carried over to the final design.




Management Application
nSite Central - Corporate I.S. Management Application
User Management
Reporting Application
Site Management
Logout Admin
Customize a Query
Sites to search
Select All
Deselect All
Client Site 1
Client Site 2
Client Site 3
Client Site 4
Client Site 5
Client Site 6
Client Site 7
Client Site 8
Query Options
Query Name
SQL Command
Query Option 1
Query Option 2
Query Option 3
Query Option 4
Query Option 5
Query Option 6
Query Option 7
Query Option 8
Add to queue
Query Queue
QueryA
QueryB
QueryC
QueryD
QueryE
Subscribe
View Results
QueryA Results
QueryC Results
Column1
Column2
Column3
Column4


Management Application
nSite Central - Corporate I.S. Management Application
User Management
Reporting Application
Site Management
Logout Admin
Site Options
Add Site
Save Changes to Sites
Remove Site
Client Sites
sitename
Column2
Column3
Column4
Column5
Column6


Management Application
nSite Central - Corporate I.S. Management Application
User Management
Reporting Application
Site Management
Logout Admin
ID
firstname
lastname
email
password
securityprofile
status
Search for user:
Advanced Search
User Control Options
Create New User
Save User Changes
Remove User