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Incident Cue System

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INCIDENT CUE SYSTEM

A graduate project submitted to Dakota State University in partial fulfillment of the requirements for the degree of

Master of Science

in

Information Systems

May, 2012

By

Divya Jyothi Kundam

Project Committee:

Dr. William Figg

Dr. Ronghua Shan

Dr. Stephen Krebsbach



PROJECT APPROVAL FORM

We certify that we have read this project and that, in our opinion, it is satisfactory in scope and quality as a project for the degree of Master of Science in Information Systems.

Student Name: Divya Jyothi Kundam

Master's Project Title: Incident Cue System

Faculty supervisor: [Signature] Date: 5/4/2012

Committee member: [Signature] Date: 5/4/2012

Committee member: [Signature] Date: 5/4/12

Acknowledgment

I would like to take this opportunity to thank my project supervisor, Dr. William Figg for providing me excellent guidance to complete my MSIS final project. I would also like to thank my committee members Dr. Ronghua Shan and Dr. Stephen Krebsbach for their help. All the courses that I have completed at Dakota State University have helped me complete my project successfully.

I would also like to thank my family and friends for their support and suggestions in every phase of life which helped me in being what I am today.

Abstract

Incident Cue System is multi platform based application. It includes three types of applications. First, one is the Web application which is maintained by administrator and second one is a windows based application which reminds the different message by giving alert and final is a web service which acts as a bridge between windows application and centralized server. The web services are hosted by particular areas like e-learning, weather forecast etc. When user minimize, this tool disappears from the screen and the user can see a small icon in the system tray, which can be used to re-activate the tool. Even when the tool is hidden, it works silently in the background. At some regular intervals of time, it communicates with web services to find if there is any new alert created. If it finds a new alert, the tool downloads the alerts and pops up a message displaying the alert. For example, when a new article is submitted in or when an answer is posted for the user's question, Incident Cue System tool will immediately popup alerting the user to visit the page. For applications like e learning, marketing and Query processing, even a web application can be developed for entry and editing and that can be tracked by windows, and other application users through web services. Every bank today sends alerts to their users when an amount is credited, withdrawn or a cheque is presented. Similarly, the alerts are generated for this application. Take an important area and design the application. Extend the application to register for alerts based on user choice. This is one of the modern requirements for every desktop application today.

Declaration

I hereby certify that this project constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions or writings of another.

I declare that the project describes original work that has not previously been presented for the award of any other degree of any institution.

Signed,

Divya Jyothi Kundam

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1. INTRODUCTION

Learning is a never-ending process and it can happen at any step of life. With advanced technology and wide use of internet, learning had become easy and simpler. There are many forums now a day that our queries related to anything is answered. However, one will has to keep logged into that forum and check again and again if his questions are answered. This is just an example of some every day situation people come across. This project helps in simplifying these kinds of issues. This is a window as well as web based application, it interacts with internet-based applications to give the required results. When the tool is minimized, it does not stay on the task bar which is quite disturbing when a person is working on many applications and has them open. The tool appears as a small icon in system tray and it works in the background. If there are any new alerts that need to be conveyed to the user, a message is popped up; it constantly interacts with web services to find if there are any alerts or updates.

1.1 Existing System and its disadvantages

In the present situation, Incident Cue System cannot upload and download the latest updates. There is no use of web services and there is a risk of mismanagement of data during the project development phase. There is less security and no proper coordination between different Applications and Users. This application is not very user friendly.

1.2 Proposed System and its advantages

The new system is proposed to make sure the cons of the existing system are taken care of.

The system uploads the latest updates and allows the user to download the alerts by clicking on the URL. The application is made user friendly with the help of various controls. The risk of mismanagement of data is drastically reduced at any level while the project is in the development phase. It provides high level of security with different level of authentication.

2. SYSTEM REQUIREMENTS

2.1 Performance Requirements

Standard Compliance

The standards address the various documents to be generated throughout the lifecycle of development. The system also proposes to decomposition of the application to various units. Processes will develop a functional design document (FDD) bases on this document. The FDD addresses the database schema to be used in the application, design of each of the modules in terms of components and APIs. This document will serve as a base for the further development.

Reliability

The system is more reliable on windows platform than any other platforms.

Availability

We have published the application in SQL server; it will give better availably of the system for multiple users in the Internet.

Security:

In general, security is important for Internet applications in case of database and application security is provided in terms of HTTPS (Secured Hyper Text Transfer Protocol).

Portability:

This system is portable in all windows platform, which supports SQL server.

2.2 Hardware Requirements

- PIV 2.8 GHz Processor and Above
- RAM 512MB and Above
- HDD 20 GB Hard Disk Space and Above

2.3 Software Requirements

- WINDOWS OS (XP / 2000 / 200 Server / 2003 Server)
- Visual Studio .Net 2005 Enterprise Edition
- Internet Information Server 5.0 (IIS)
- Visual Studio .Net Framework (Minimal for Deployment)
- SQL Server 2000 Enterprise Edition or more

3. SYSTEM ANALYSIS AND DESIGN

3.1 Introduction

The first activity is to study the existing system and other is to understand the domain of the new system. Both activities are extremely important as the first activity serves as a base for proper design of the proposed system. It is difficult to understand the properties of a new system and it requires creative thinking.

The UML supports the development of state models. The Unified Modeling Language is a standard language for writing software blueprints. The UML may be used to visualize specify, construct, and document the artifacts of software-intensive system.

The UML is only a language and so is just one part of a software development method. The UML is process independent although optimally it should be used in a process that is use case driven, architecture-centric, iterative, and incremental.

3.2 Building Blocks of the UML

- The unified modeling language allows the software engineer to express an analysis model using the modeling notation that is governed by a set of syntactic semantic and pragmatic rules.
- A UML system is represented using five different views that describe the system from distinctly different perspective. Each view is defined by a set of diagram, which is as follows.

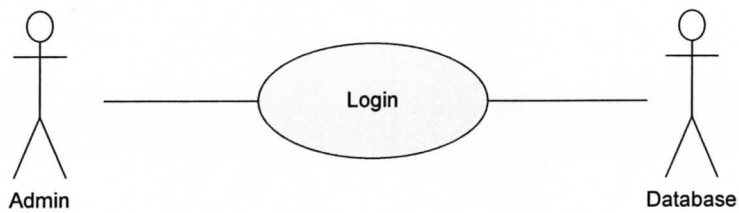
- User Model View
 1. This view represents the system from the users' perspective.
 2. The analysis representation describes a usage scenario from the end-users perspective.
- Structural model view
 1. In this model the data and functionality are arrived from inside the system.
 2. This model view models the static structures.
- Behavioral Model View
 1. It represents the dynamic of behavioral as parts of the system, depicting the interactions of collection between various structural elements described in the user model and structural model view.
- Implementation Model View
 1. In this the structural and behavioral as parts of the system are represented as they are to be built.
- Environmental Model View
 1. In this the structural and behavioral aspects of the environment in which the system is to be implemented are represented.
 2. UML is specifically constructed through two different domains they are
 3. UML Analysis modeling, this focuses on the user model and structural model views of the system.
 4. UML design modeling, which focuses on the behavioral modeling, implementation modeling and environmental model views. (Bernhard Bauer)

Use case Diagrams represent the functionality of the system from a user's point of view. Use cases are used during requirements elicitation and analysis to represent the functionality of the system. Use cases focus on the behavior of the system from external point of view.

Actors are external entities that interact with the system. Examples of actors include users like administrator, bank customer ...etc., or another system like central database.

UML Diagrams

Use Case for Login Process



Use Case for Complete Interface

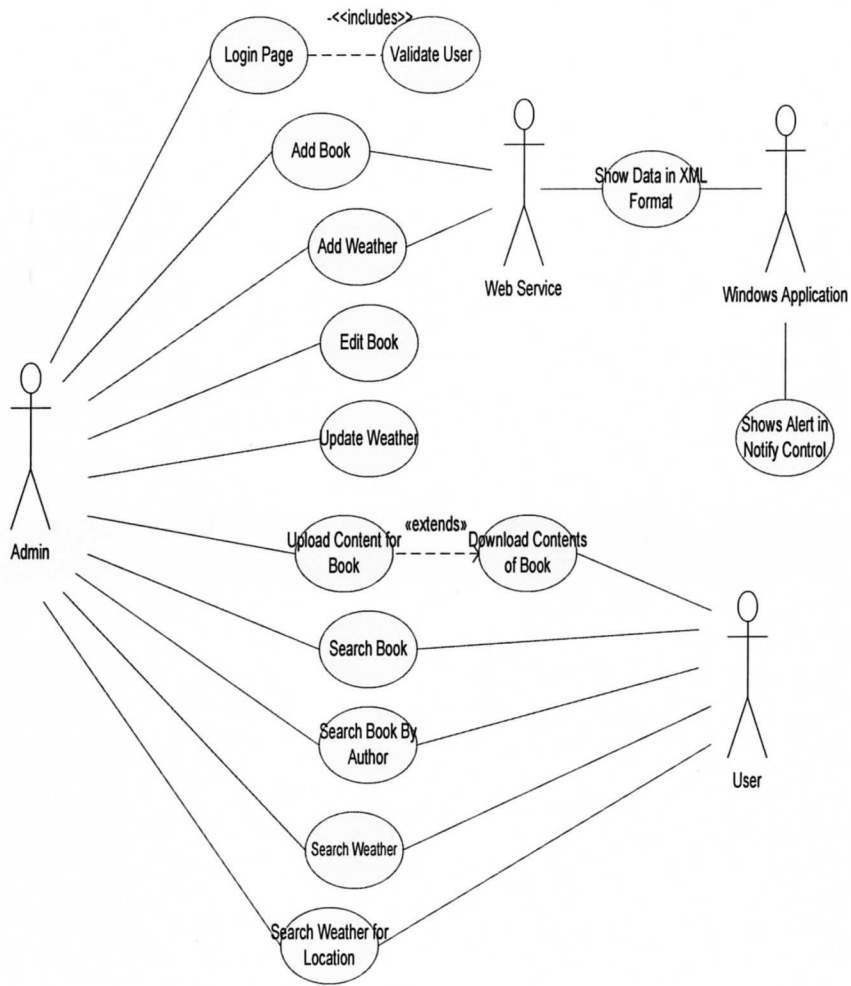


Figure 1: Use Case for Complete Interface

Use Case for E-Learning

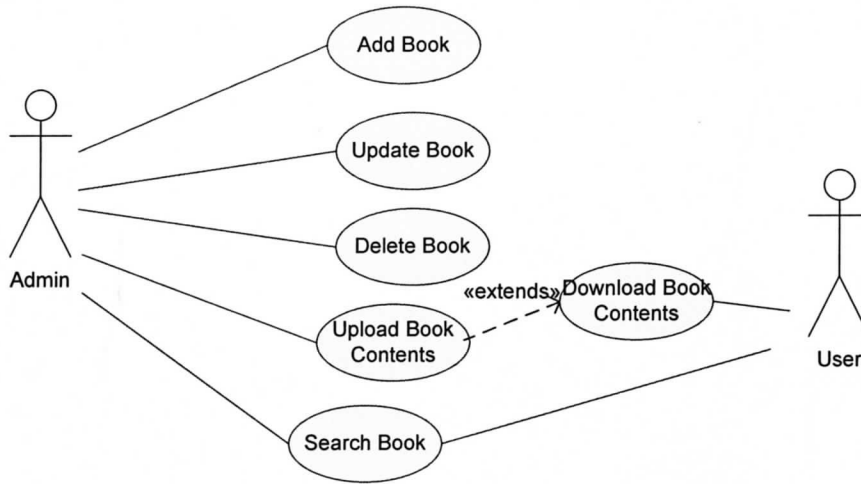


Figure 2: Use Case for E-Learning

Use Case for Weather Forecast

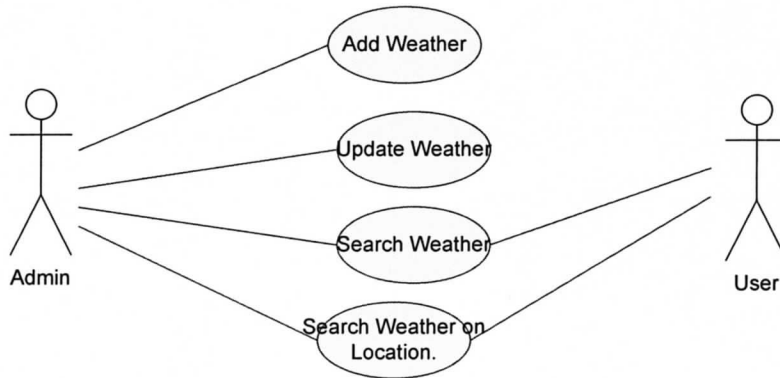


Figure 3: Use Case for Weather Forecast

<i>Use case name</i>	Login
<i>Participating actors</i>	Admin
<i>Flow of events</i>	The Actor will give the user name and password to the system. The system will verify the authentication.
<i>Entry Condition</i>	The actor will enter the system by using username and password
<i>Exit condition</i>	If un authenticated should be exited
<i>Quality Requirements</i>	Password must satisfy the complexity requirements.

Table 1: Login Use Case Description

<i>Use case name</i>	Admin Processes
<i>Participating actors</i>	Admin
<i>Flow of events</i>	The User will submit all the details and place in the application.
<i>Entry Condition</i>	Must satisfy all the norms given by the Web Alerts interface site.
<i>Exit condition</i>	Successful or Un successful completion of creation of account.
<i>Quality Requirements</i>	All fields are mandatory.

Table 2: Admin Process Use Case Description

<i>Use case name</i>	User
<i>Participating actors</i>	User
<i>Flow of events</i>	The User will note have any registration he can directly search and download the data from the website.
<i>Entry Condition</i>	Must satisfy all the norms given by the Web Alerts interface site.
<i>Exit condition</i>	Successful or Un successful completion of creation of account.
<i>Quality Requirements</i>	All fields are mandatory.

Table 3: User Use Case Description

Sequence Diagrams

Sequence Diagrams Represent the objects participating in the interaction horizontally and time vertically.

Admin Login Sequence Diagram: Admin logs into the system using log in credentials and ValidateUser() function validates the information entered is in the required format.

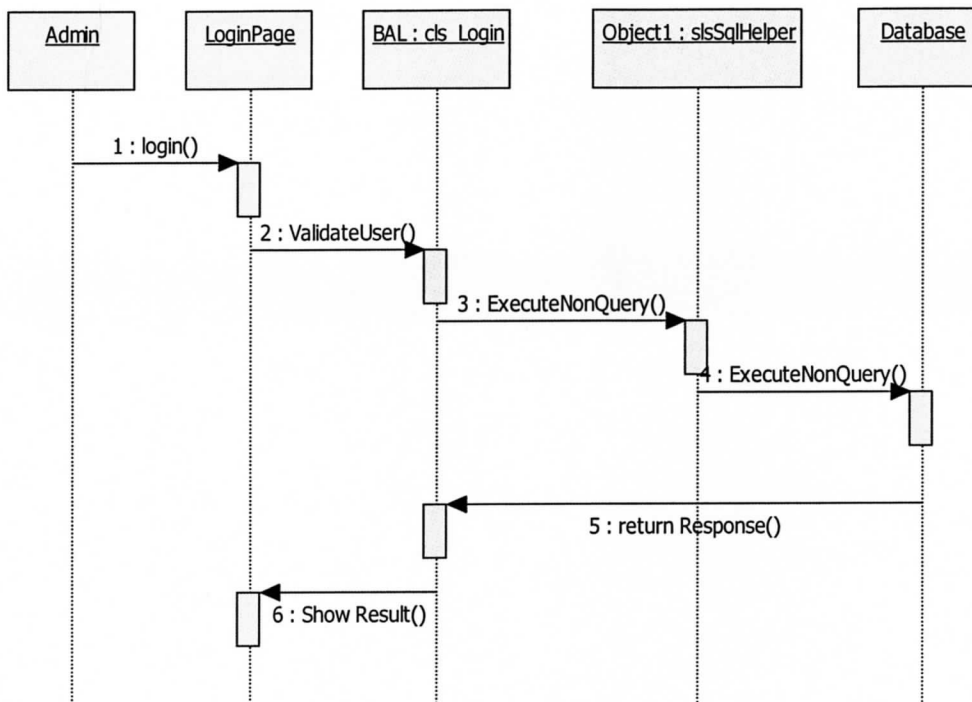


Figure 4: Admin Login Sequence Diagram

Admin Login Screen

The screenshot shows a web browser window titled "Untitled Page - Microsoft Internet Explorer". The address bar displays the URL: `http://localhost:1405/IncidentCueSystem_WebSite/login.aspx?ReturnUrl=%2FIncidentCueSystem_WebSite%2FELearning%2FDefault.aspx`. The page content includes a main header "Incident Cue System" and a sub-header "Weather Forecast and E - Learning". A navigation menu contains links for HOME, E - LEARNING, WEATHER, SEARCH BOOK, SEARCH WEATHER, ABOUT SYSTEM, and CONTACT. The central area features a "Login" form with fields for "User Id" (containing "1001") and "Password" (masked with dots), and a "Log In" button. Below the form are links for "Forgot your password?" and "Login Help". A "Some Links" sidebar on the right lists: Home, Search Book, Search Weather, Articles, About System, and Contact. The status bar at the bottom shows "Done" and "Local intranet".

Microsoft Internet Explorer
File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Print Mail K

Address http://localhost:1405/IncidentCueSystem_WebSite/login.aspx?ReturnUrl=%2FIncidentCueSystem_WebSite%2FELearning%2FDefault.aspx Go Links

Incident Cue System

Weather Forecast and E - Learning

HOME E - LEARNING WEATHER SEARCH BOOK SEARCH WEATHER ABOUT SYSTEM CONTACT

Login

User Id :

Password :

[Forgot your password?](#)

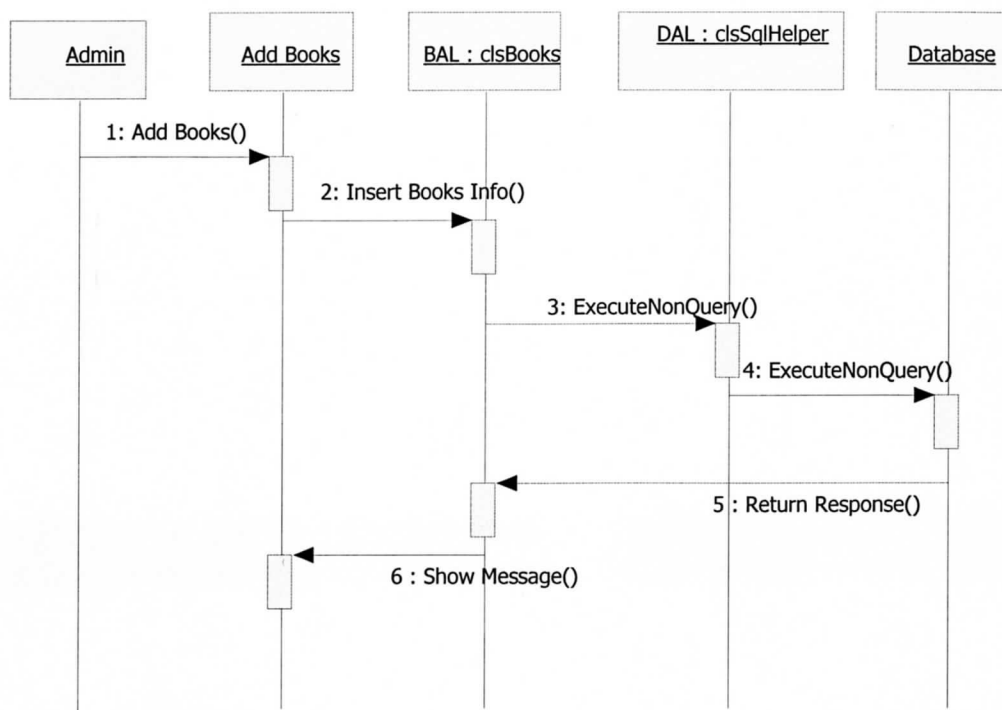
[Login Help](#)

Some Links

- Home
- Search Book
- Search Weather
- Articles
- About System
- Contact

Done Local intranet

Admin Sequence Diagram For Adding New books Details

**Figure 5: Sequence Diagram for Adding Books Details**

Add New Book Details Screen:

E-Learning Admin is responsible to add, edit or delete any book information.

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://localhost:1405/IncidentCueSystem_WebSite/ELearning/frmAddBook.aspx

Incident Cue System

e-learning

HOME ADD BOOKS UPDATE BOOKS VIEW BOOKS SEARCH BOOKS CHANGE PWD SIGNOUT

Enter Book Details

Book ID 63

Book Name

Author Name

Volume

Edition

Publisher

Price (Rs/-)

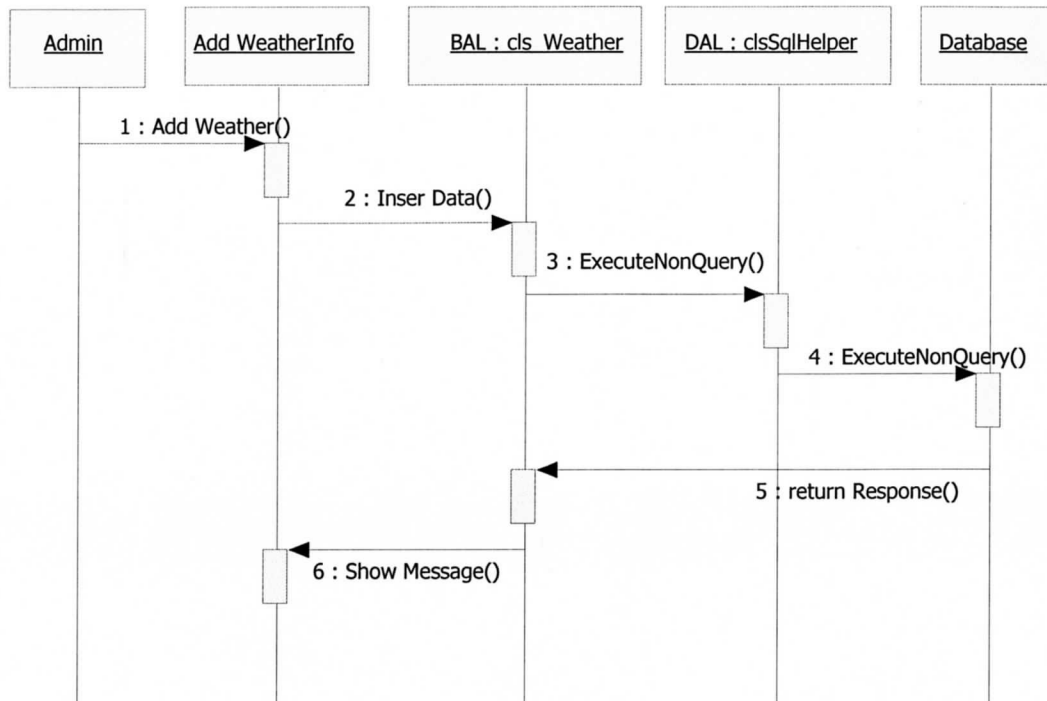
Contents

(* are mandatory)

[Click Here](#) to View Book Details

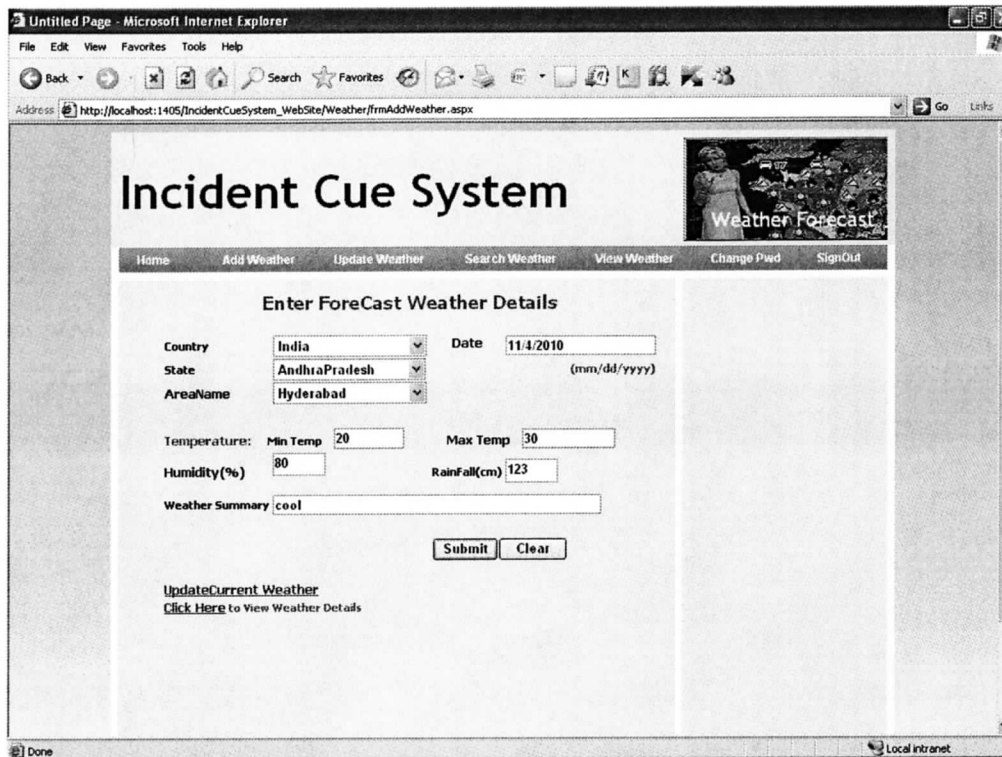
Done Local Intranet

Figure 6: Add New Book Details Screen

Admin Sequence Diagram for Adding Weather info Details**Figure 7: Sequence Diagram for Adding Weather info**

Add Weather Forecast information Screen

From the below screenshot page, Admin enters the Weather forecast information time to time into the database.

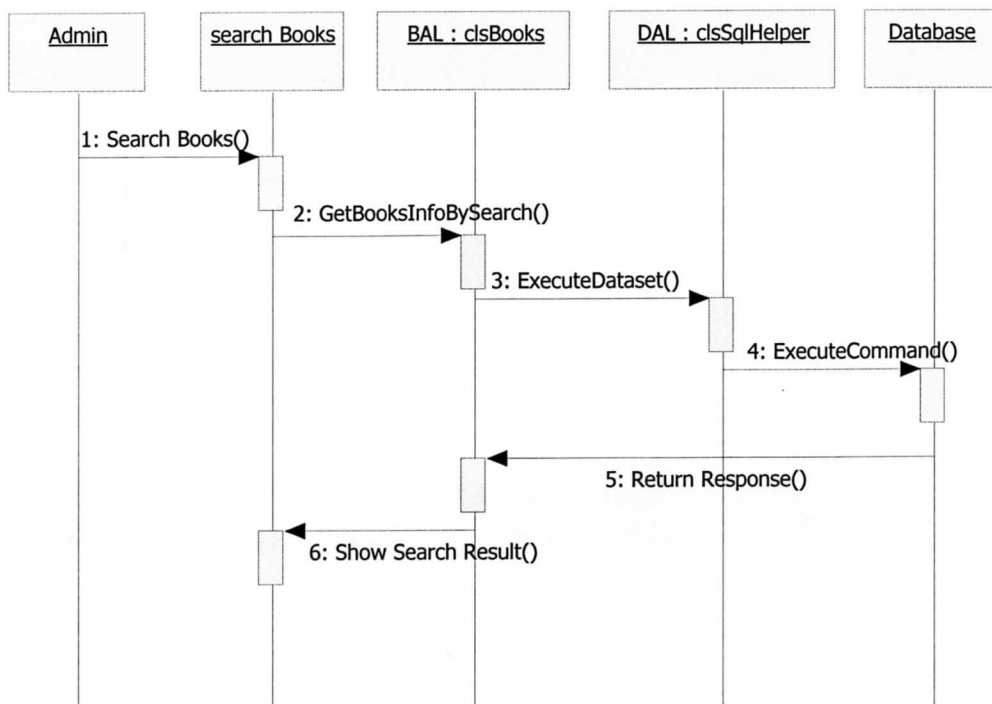


The screenshot shows a web browser window titled "Untitled Page - Microsoft Internet Explorer" with the address bar displaying "http://localhost:1405/IncidentCueSystem_WebSite/Weather/fmAddWeather.aspx". The page content includes a navigation menu with links for Home, Add Weather, Update Weather, Search Weather, View Weather, Change Pwd, and SignOut. The main section is titled "Enter ForeCast Weather Details" and contains the following form fields:

Country	India	Date	11/4/2010
State	AndhraPradesh		(mm/dd/yyyy)
AreaName	Hyderabad		
Temperature: Min Temp	20	Max Temp	30
Humidity(%)	80	RainFall(cm)	123
Weather Summary	cool		

Below the form are "Submit" and "Clear" buttons. At the bottom, there is a link for "UpdateCurrent Weather" and a note "Click Here to View Weather Details".

Figure 8: Add Weather Forecast information Screen

Sequence Diagram for Search a book**Figure 9: Sequence Diagram for book search**

Book Search Screen:

From the following page User can search for any required book with the help of Author name

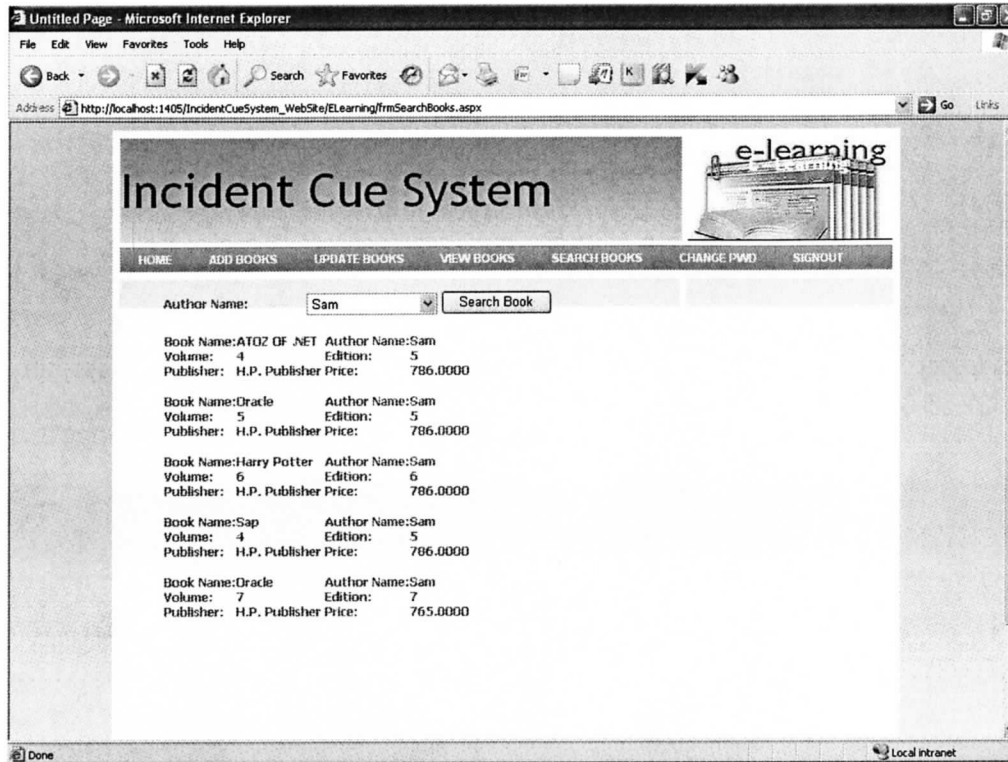


Figure 10: Book Search Screen

Sequence Diagram for Search Weather Information

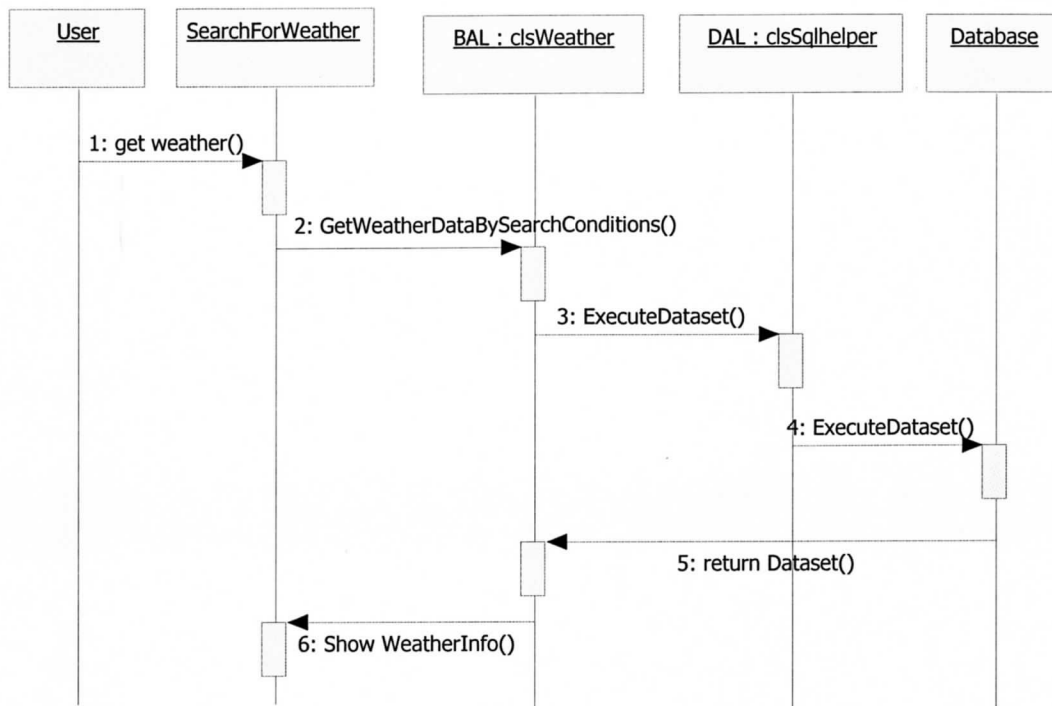


Figure 11: Sequence Diagram for Search Weather Information

Weather Information Search Screen

From the following screen user can search for weather condition of various places, either country wise or state wise

Incident Cue System

Home Add Weather Update Weather Search Weather View Weather Change Paid SignOut

Weather Details

Country Wise Area's Weather
 State Wise Area's Weather
 All Area's Weather

Show Details

Select Country Name: Sri Lanka

AreaID	AreaName	MinTemp	MaxTemp	Summary
1400	St1Area1	10.00	30.00	clear sky
1500	St2Area2	34.00	34.00	Weather is very Bad with Black Sky
1600	St3Area3	10.00	30.00	partly cloudy

Figure 12: Weather Information Search Screen

Activity Diagram

Login Activity Diagram:

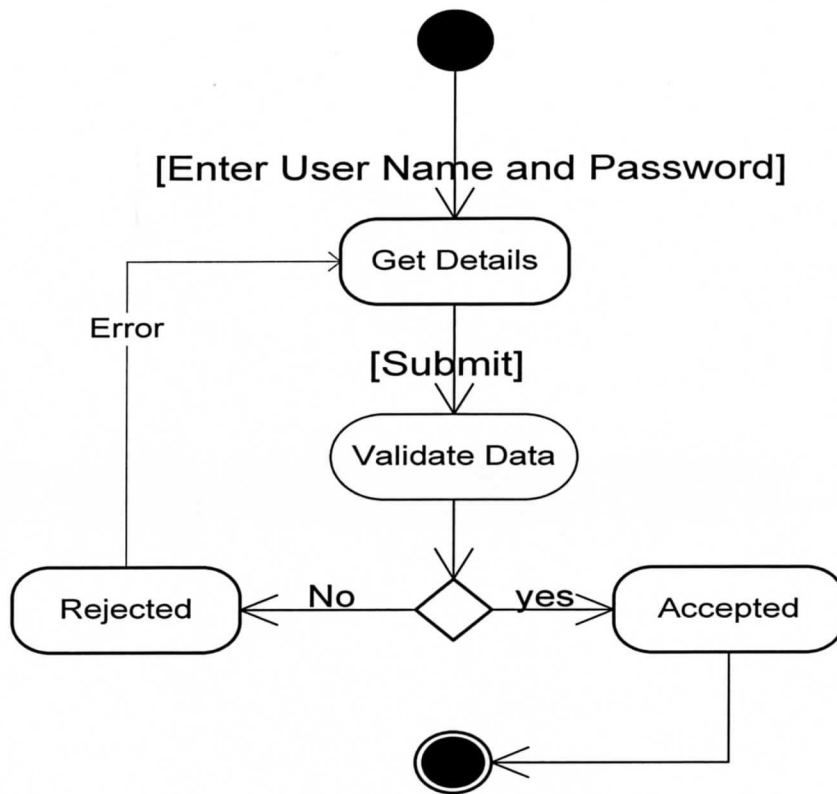


Figure 13: Login Activity Diagram

Admin Activity Diagram:

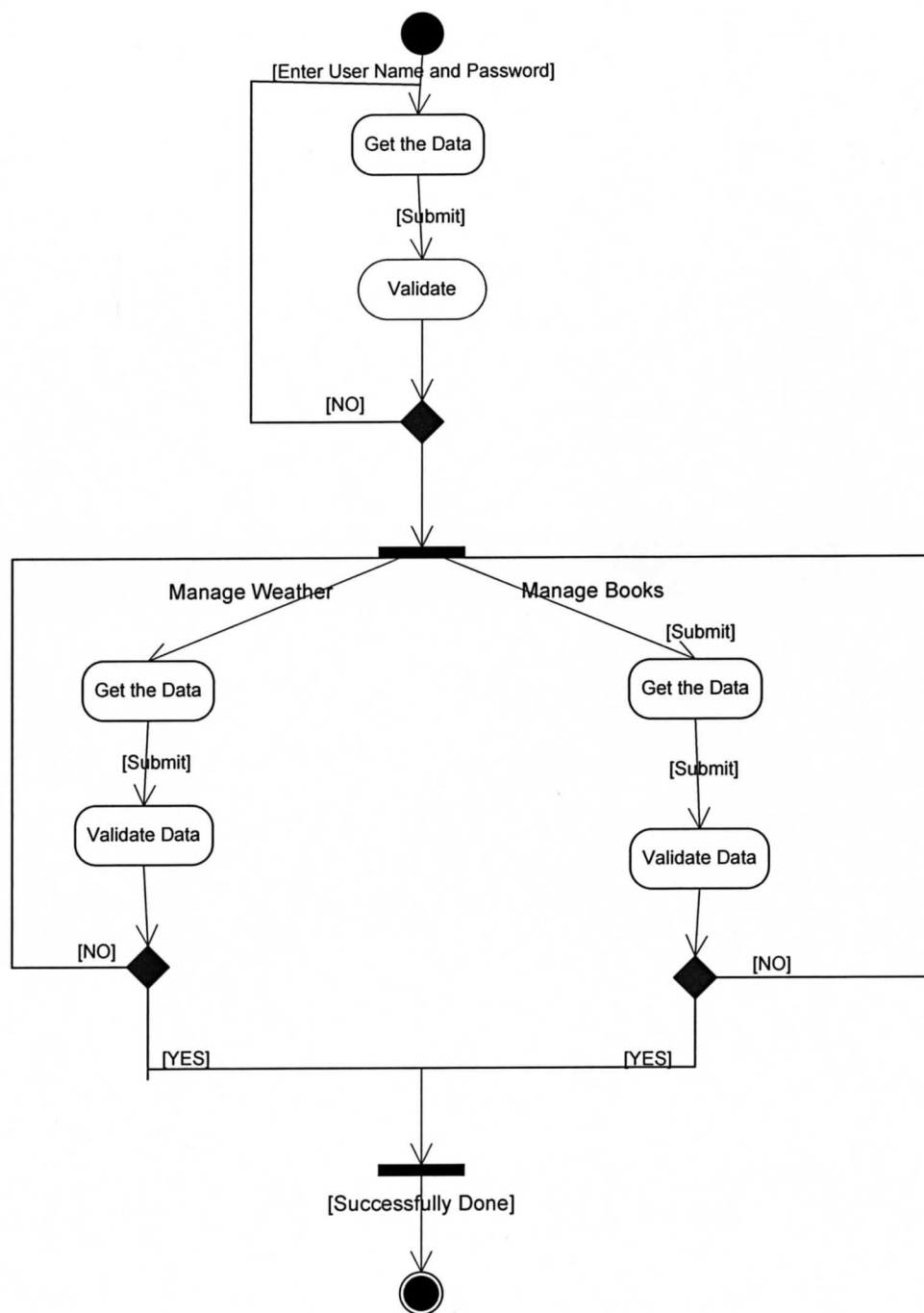


Figure 14: Admin Activity Diagram

User Activity Diagram:

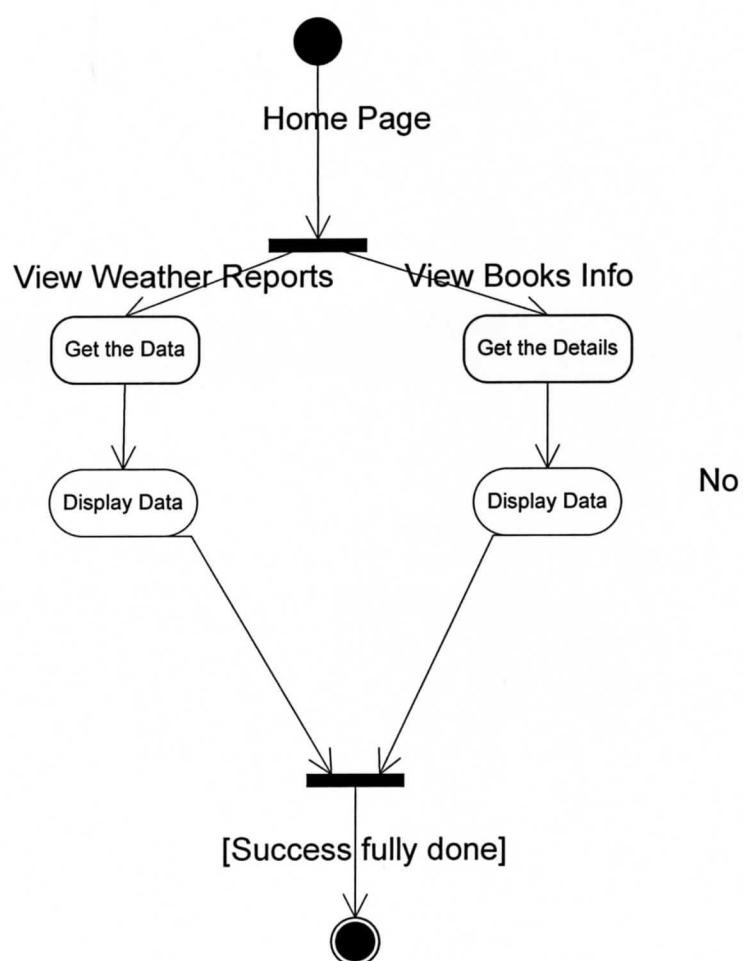


Figure 15: User Activity Diagram

Collaboration Diagrams

Administration Login Collaboration Diagram

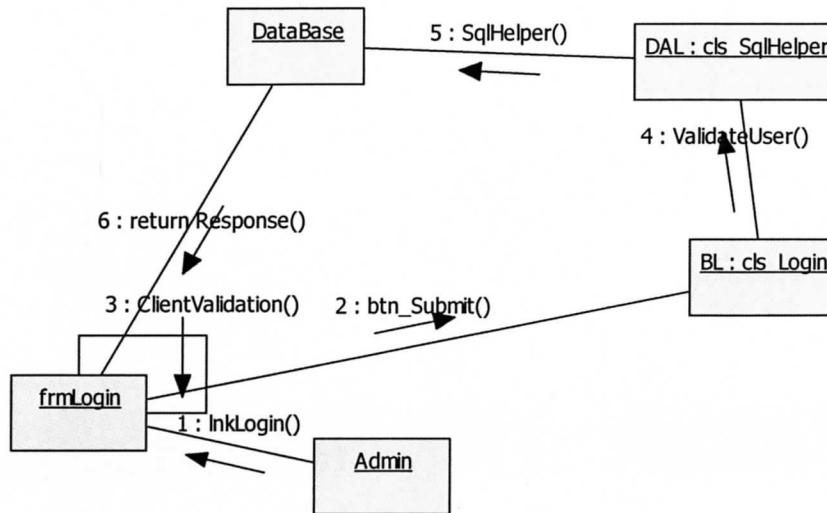


Figure 16: Administration Login Collaboration Diagram

User Login Collaboration Diagram

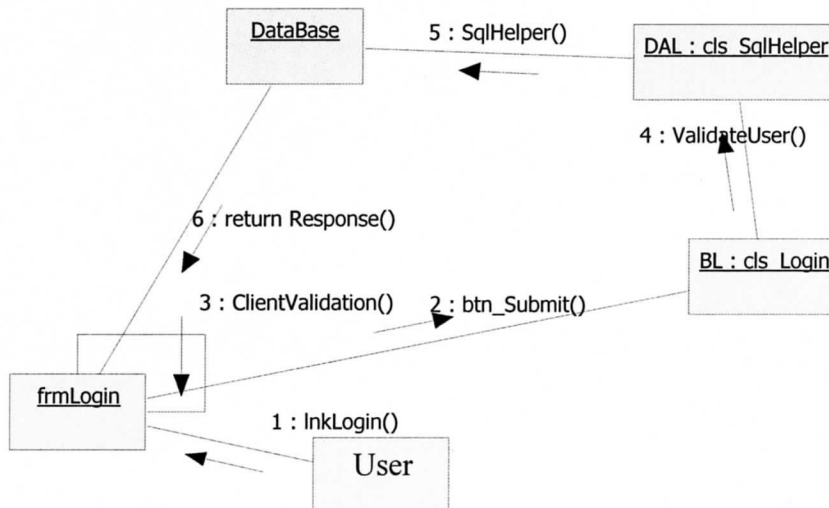


Figure 17: User Login Collaboration Diagram

Collaboration Diagram for Adding Weather Report by admin

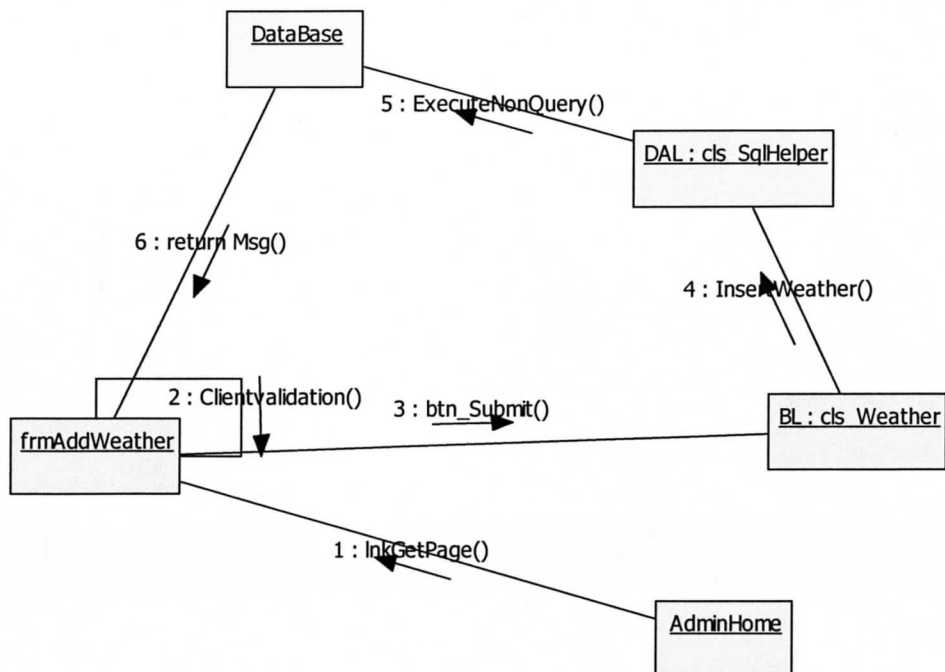


Figure 18: Collaboration Diagram for Adding Weather Report

Collaboration Diagram for Adding Books Info by admin

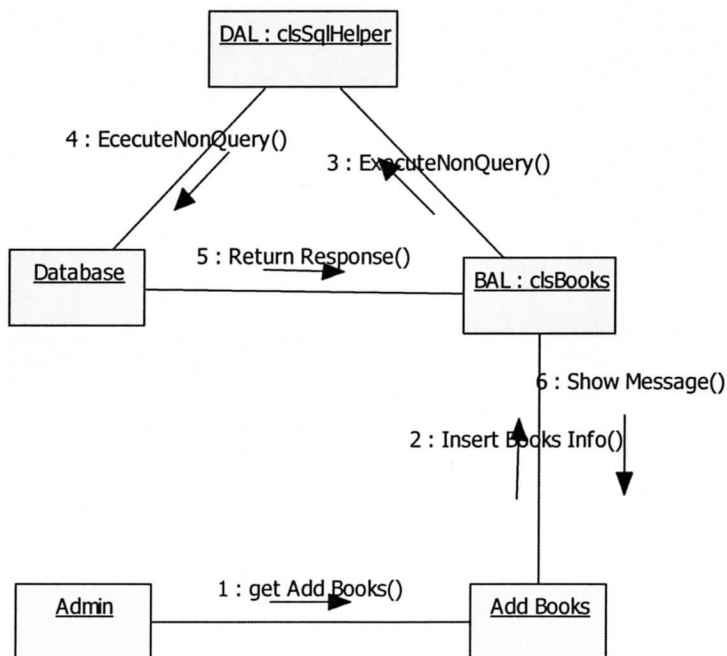


Figure 19: Collaboration Diagram for Adding Books Info

Collaboration Diagram for Search Weather

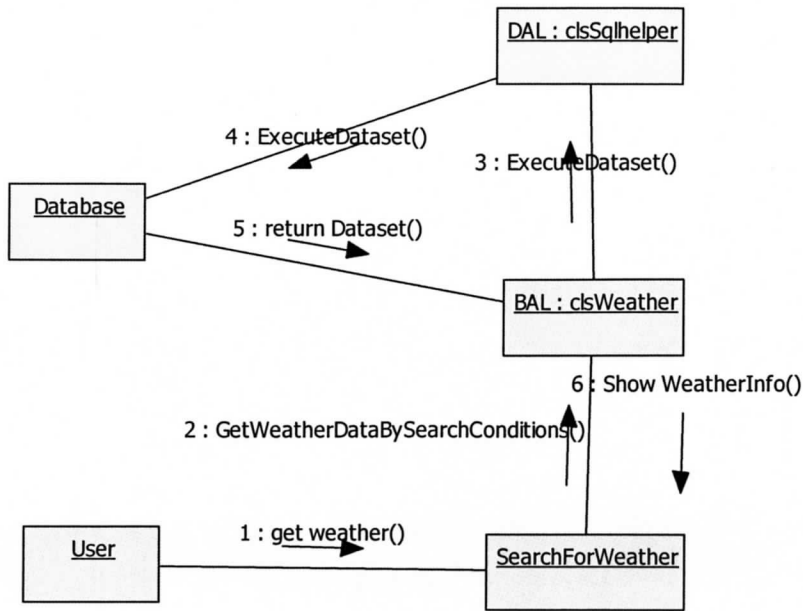


Figure 20: Collaboration Diagram for Weather Info Search

Collaboration Diagram for Search Book

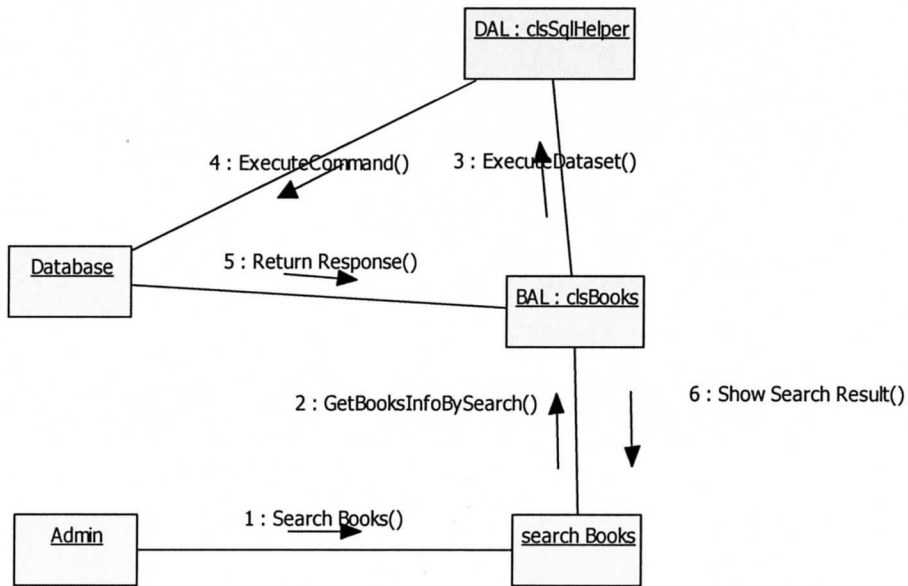


Figure 21: Collaboration Diagram for Book Search

ER Diagram:

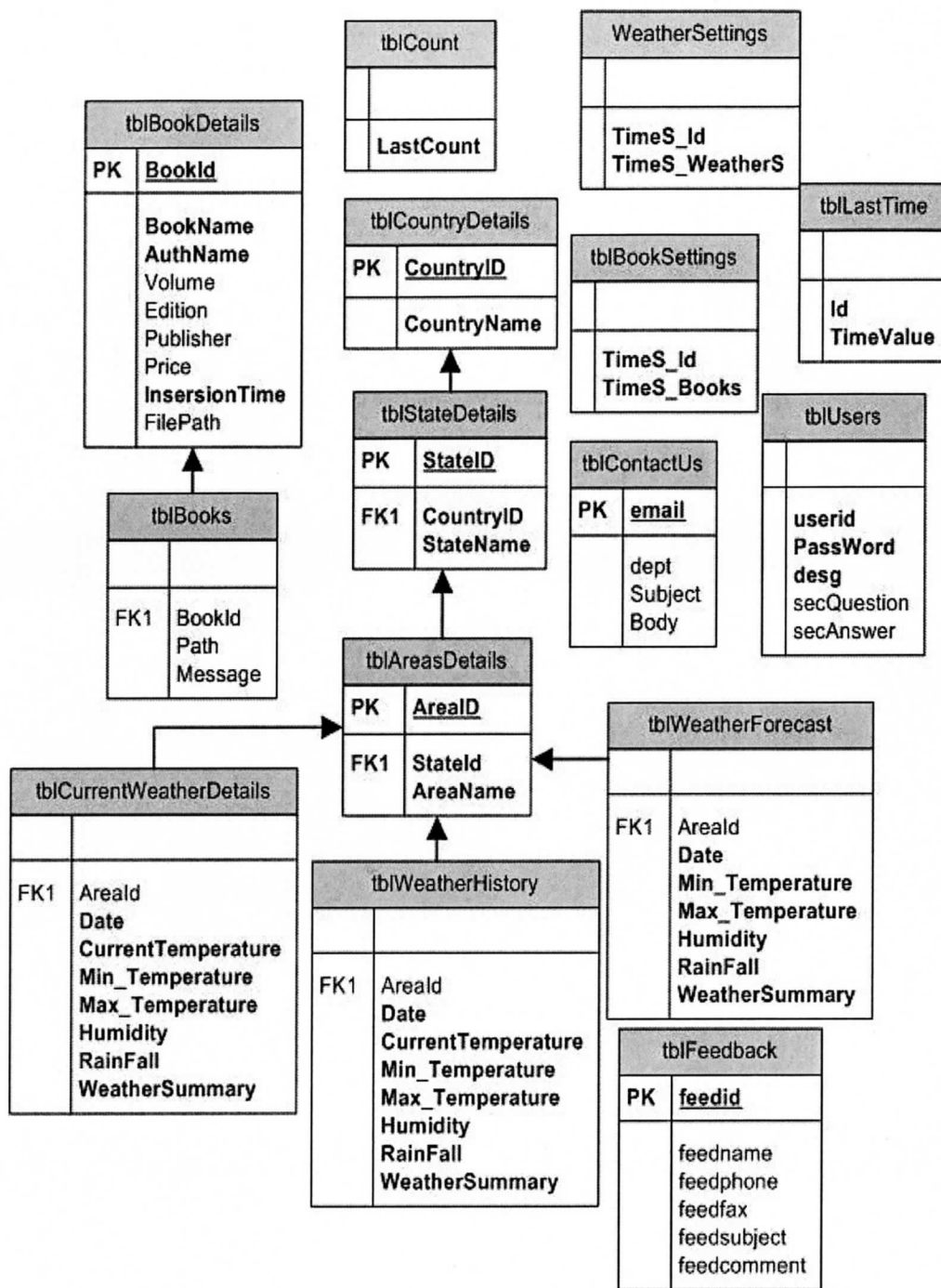


Figure 22: ER Diagram

Data Flow Diagram

Login DFD Diagram:

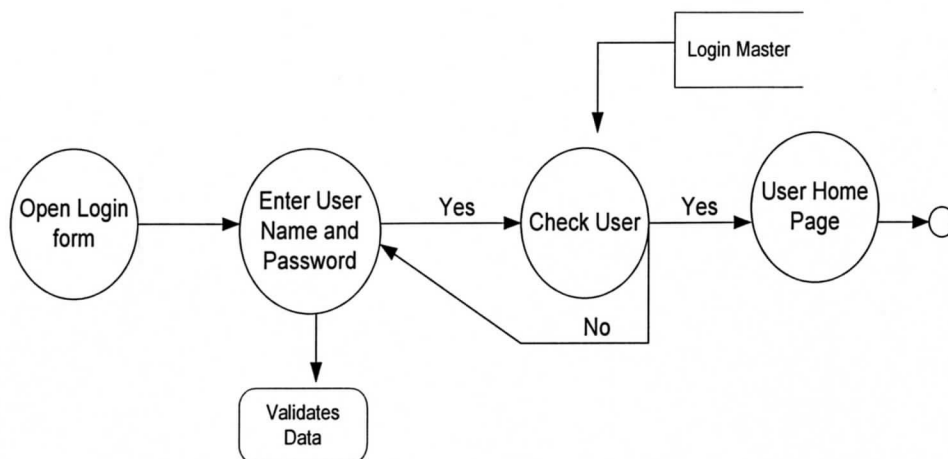


Figure 23: Login DFD Diagram

Admin Details Data Flow:

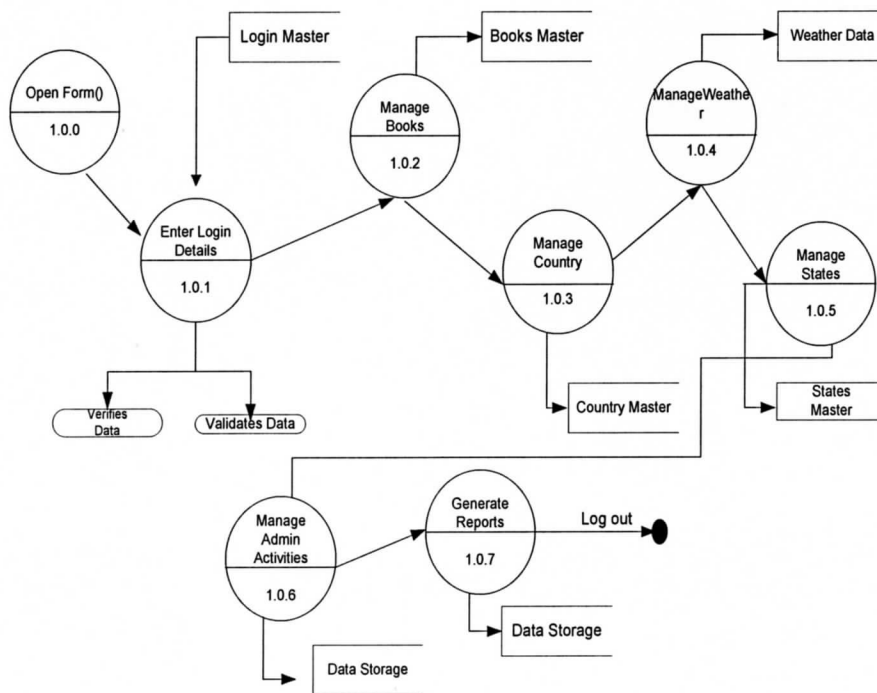


Figure 24: Admin Details Data Flow

The flow of the data is:

- A Data Flow has only one direction of flow between symbols. It may flow in both directions between a process and a data store to show a read before an update. The later is usually indicated however by two separate arrows since these happen at different type.
- A join in DFD means that exactly the same data comes from any of two or more different processes data store or sink to a common location.
- A data flow cannot go directly back to the same process it leads. There must be at least one other process that handles the data flow produce some other data flow returns the original data into the beginning process.
- A Data flow to a data store means update (delete or change).
- A data Flow from a data store means retrieve or use.

3.3 Spiral Model

This project uses Spiral Model of development since it is most beneficial for projects which do not have specified requirements. Since the project is based on an idea, there is a great possibility for the requirements to change, and when additional requirements are added, already implemented modules will not be affected. Each phase has to be re-implemented with the modifications and therefore the modules are not disturbed.

Spiral model is classified into four phases:

- First phase of this model is Requirements gathering. In this phase objectives of the project are determined and all the requirements of the project are gathered.
- In second phase of this model, risks of implementing the project with the requirements are identified and resolved.

- In phase three, i.e., the Implementation phase, designing of the project using technology required, coding, integration and testing the project is also done in this phase.
- In the last phase, the next iteration is planned with any new features.

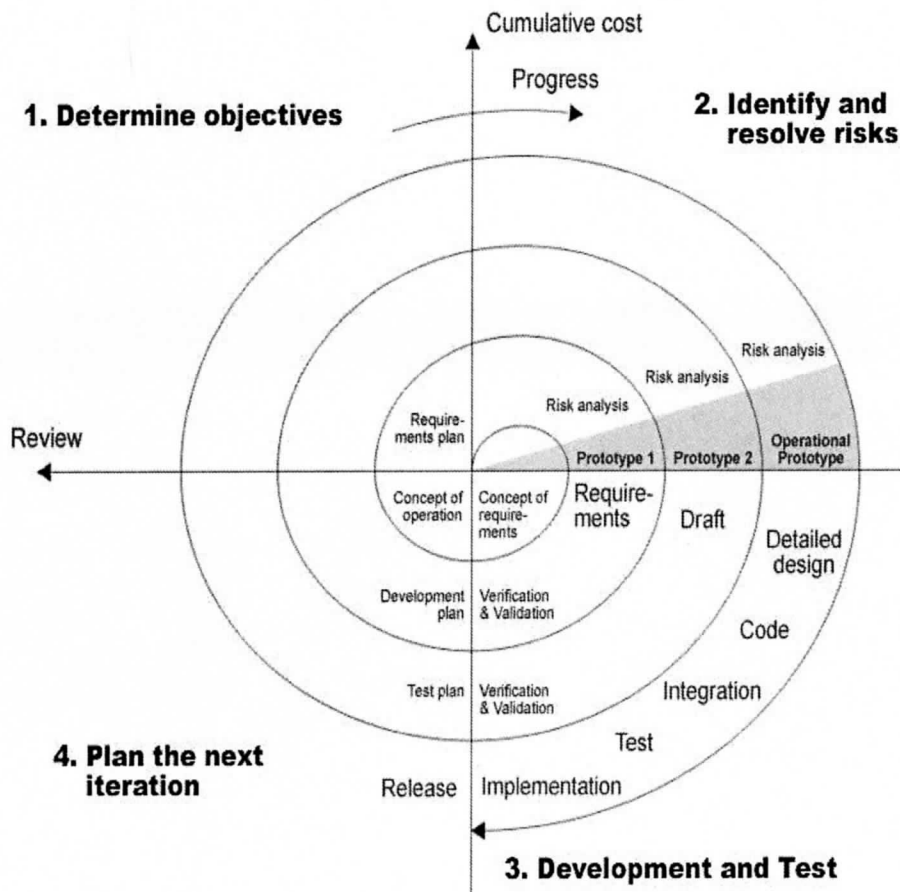


Figure 20: Spiral Diagram (Boehm, 1988)

4. DATA DICTIONARY

After carefully understanding the requirements of the client the entire data storage requirements are divided into tables. The below tables are normalized to avoid any anomalies during the course of data entry.

tblUsers				
Column Name	Data Type	Length	Allow Nulls	
userid	int	4		
PassWord	varchar	50		
desg	varchar	50		
secQuestion	varchar	100	✓	
secAnswer	varchar	150	✓	

tblBookSettings				
Column Name	Data Type	Length	Allow Nulls	
TimeS_Id	int	4		
TimeS_Books	int	4		

tblCount				
Column Name	Data Type	Length	Allow Nulls	
LastCount	int	4		

tblContactUs				
Column Name	Data Type	Length	Allow Nulls	
dept	varchar	50	✓	
email	varchar	100		
Subject	varchar	100	✓	
Body	varchar	300	✓	

tblBookDetails				
Column Name	Data Type	Length	Allow Nulls	
BookId	int	4		
BookName	varchar	50		
AuthName	varchar	50		
Volume	varchar	5	✓	
Edition	int	4	✓	
Publisher	varchar	50	✓	
Price	money	8	✓	
InserionTime	datetime	8		
FilePath	nchar	60	✓	

tblBooks				
Column Name	Data Type	Length	Allow Nulls	
BookId	int	4	✓	
Path	varchar	50	✓	
Message	varchar	500	✓	

tblWeatherHistory				
Column Name	Data Type	Length	Allow Nulls	
AreaId	int	4	✓	
[Date]	datetime	8		
CurrentTemperature	decimal	5		
Min_Temperature	decimal	5		
Max_Temperature	decimal	5		
Humidity	decimal	5		
RainFall	decimal	5		
WeatherSummary	varchar	50		

tblWeatherSettings				
Column Name	Data Type	Length	Allow Nulls	
TimeS_Id	int	4		
TimeS_WeatherS	int	4		

tblLastTime				
Column Name	Data Type	Length	Allow Nulls	
Id	smallint	2		
TimeValue	datetime	8		

tblCountryDetails				
Column Name	Data Type	Length	Allow Nulls	
CountryID	int	4		
CountryName	varchar	100		

tblAreasDetails				
Column Name	Data Type	Length	Allow Nulls	
AreaID	int	4		
StateId	int	4		
AreaName	varchar	50		

tblStateDetails				
Column Name	Data Type	Length	Allow Nulls	
StateID	int	4		
CountryID	int	4		
StateName	varchar	100		

tblFeedback				
Column Name	Data Type	Length	Allow Nulls	
Feedid	int	4		
feedname	varchar	50	✓	
feedphone	varchar	10	✓	
feedfax	varchar	10	✓	
feedsubject	varchar	150	✓	
feedcomment	varchar	200	✓	

tblCurrentWeatherDetails				
Column Name	Data Type	Length	Allow Nulls	
AreaId	int	4	✓	
[Date]	datetime	8		
CurrentTemperature	decimal	5		
Min_Temperature	decimal	5		
Max_Temperature	decimal	5		
Humidity	decimal	5		
RainFall	decimal	5		
WeatherSummary	varchar	50		

tblWeatherForecast				
Column Name	Data Type	Length	Allow Nulls	
AreaId	int	4	✓	
[Date]	datetime	8		
Min_Temperature	decimal	5		
Max_Temperature	decimal	5		
Humidity	decimal	5		
RainFall	decimal	5		
WeatherSummary	varchar	50		

Table 4: Data Dictionary

5. IMPLEMENTATION

5.1 Modules in the System

The system after careful analysis has been identified to be presented with the following modules:

The modules involved are:

- Administration
- Weather Reports
- Weather Forecast
- E-Learning
- Web Service(Communication)
- Alert generation (Windows Application).
- Search
- Authentication

Administration:

Add the different areas weather information. For a weather forecast, fields are minimum temperature, maximum temperature, weather summary.

Admin enters the different kinds of books information in the website.

Admin can add new book information in database; he can update a book, and delete a book.

Admin can search for the existing data.

Weather Forecast:

A weather forecast is a prediction on what the weather will be like in the future. One can predict the weather by taking measurements such as air pressure and cloud cover. A forecast gets less trustworthy as the time it forecasts gets further away. In this module administrator, type of user stores the weather forecast details in centralized database. This module includes displaying the list of locations weather forecast details. General users can search particular location weather forecast by giving the location name in this module.

Weather Reports:

This Module includes displaying the list of locations weather reports. User can search particular location weather report by giving the location name in this Module.

E Learning:

E Learning is the fastest and most used way of learning in today's environment. Since it is easily accessible via internet and intranet, it is widely used. There is a great variety of study material available on the internet; user gets an opportunity to study different books or materials online. Internet also provides online video tutorial which makes it easier for learning, and major advantage is anybody from any corner of the world has the ability to access the material.

- Administrator type of users can enter the book details in central database. That can be viewed by the visitors of the web site.
- E Learning includes like search the books, Details of the Books and downloading the books etc.

Alert Generation:

This module generates Alerts and User has the option of viewing it at any chosen time interval. When the windows application is installed alerts are generated automatically on user's machine. User has an option to change the frequency of the alerts displayed. User can also see the message along with the alert displayed.

Search:

Any type of users can search the data. Users can search books and weather forecast details based on different search criteria. By selecting various places and areas users can get the details of weather forecast. This Module includes Different kinds of Search like User can search their required book etc., by giving the required fields.

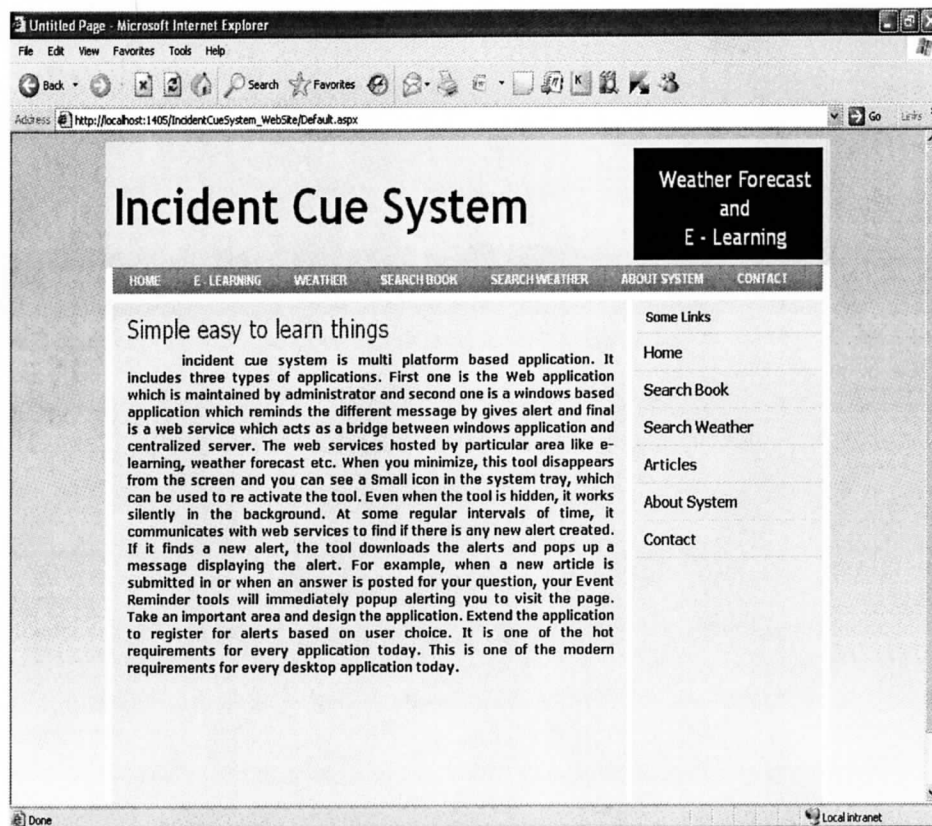
Authentication:

This module provides security to the application. Every user should enter correct user name and password to proceed. This request will go to database and check if the user exists. If user enters wrong user name and password then the system prompts an error message "Incorrect Username or Password"

5.2 Screen Shots

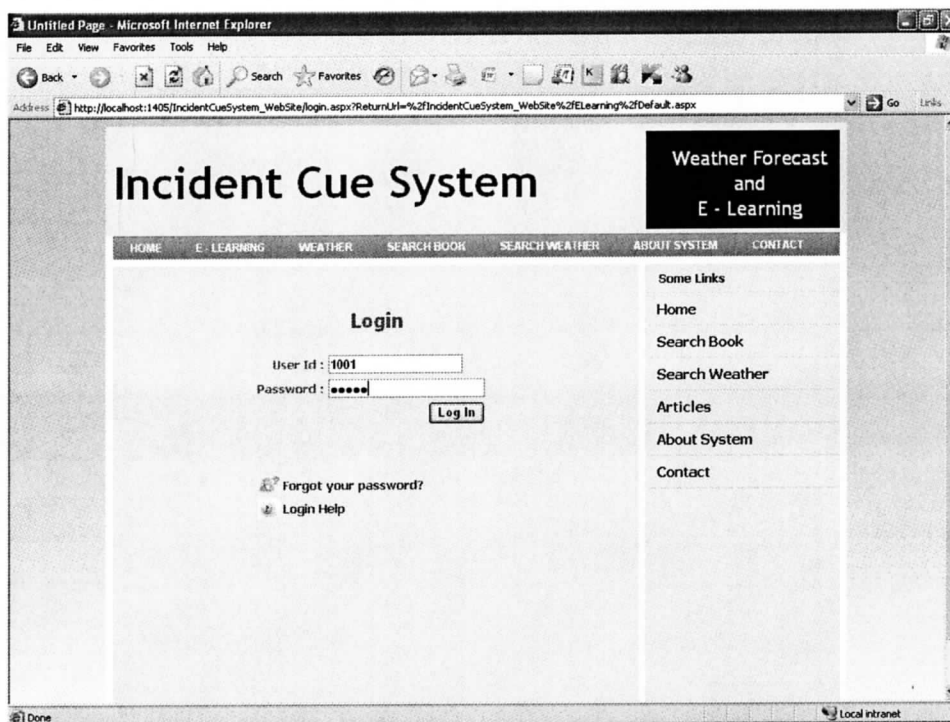
Incident Cue System Web

The screen below is the webpage of the project. This page is accessible for Admin to enter and store the data in the database and for users to search and view the required information.

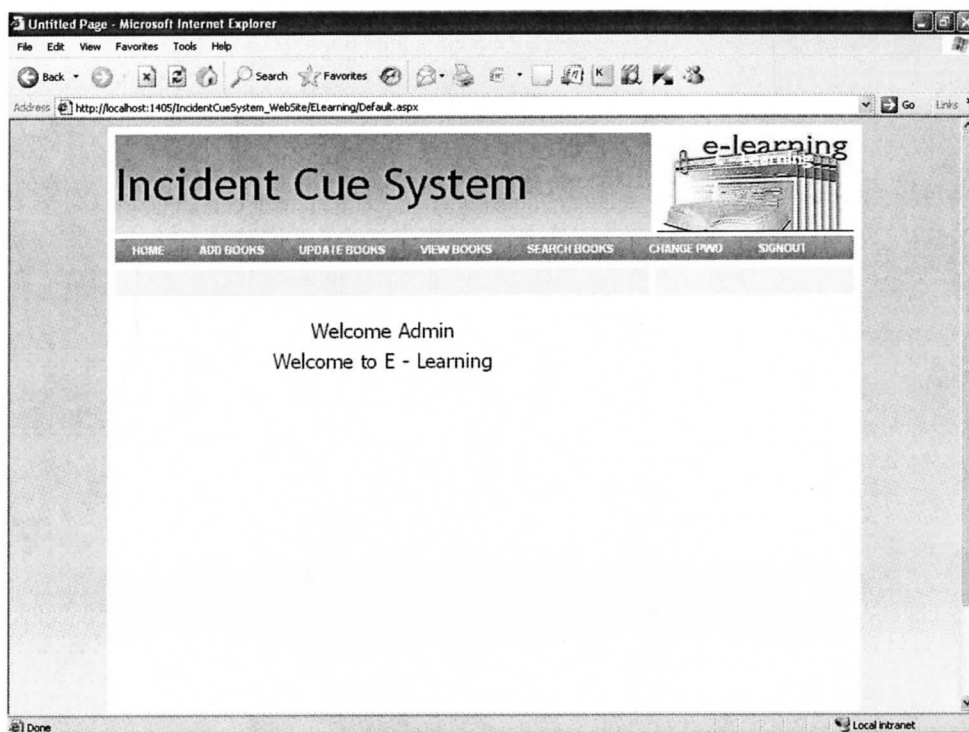


Incident Cue System Login Page

The screen below is the System Login screen which is accessible only to the Admin. Weather Forecast administrator or E-Learning administrator responsible to add, update or delete any data from the system use this login page to enter into the system.

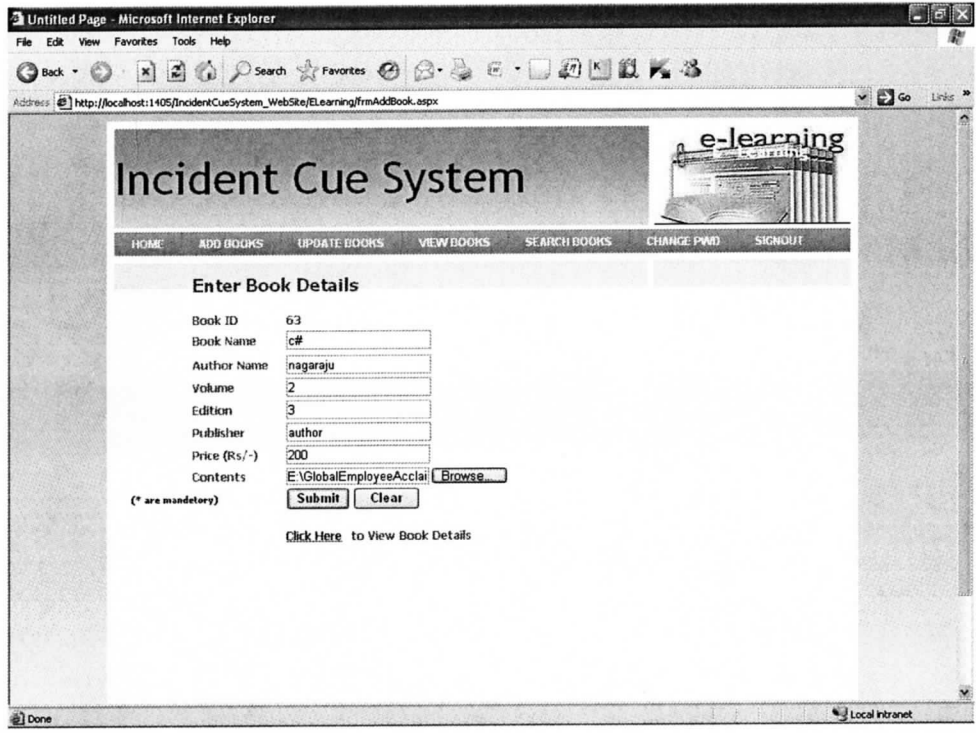


Welcome Page



Book Details Page:

The following screen is where the Admin adds any new book into system database. All the books added are stored in the database and whenever a user is in need of a particular book, he can easily search from the available books.



List of Books

The screen below gives the list of books available in the database when View Books button is clicked

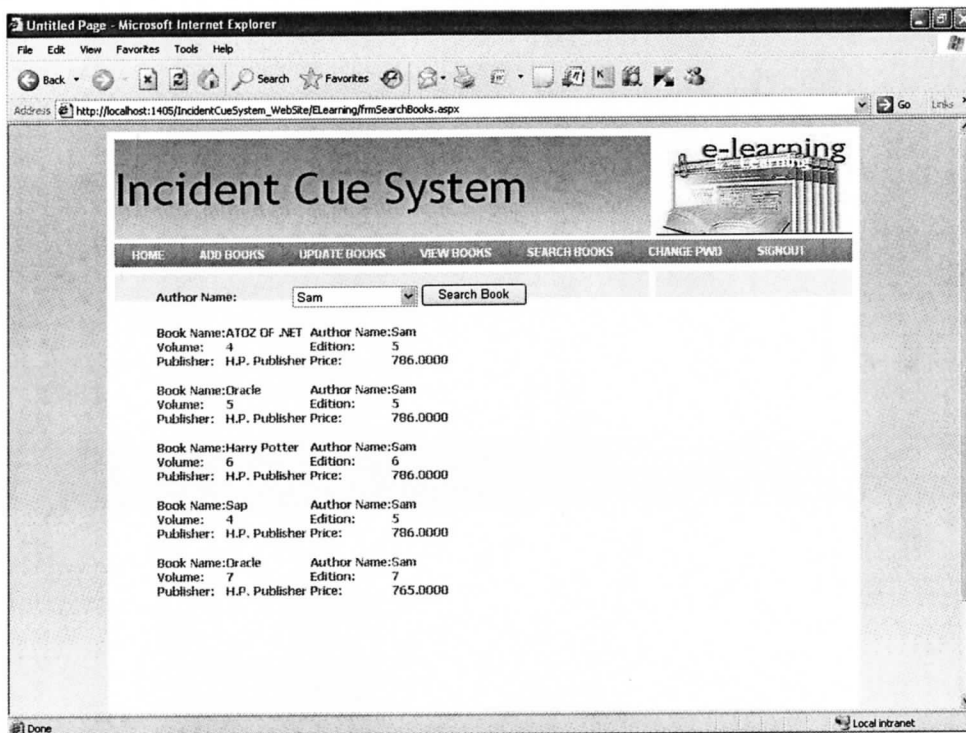
The screenshot shows a Microsoft Internet Explorer window displaying a web page titled 'Incident Cue System'. The page features a navigation menu with options: HOME, ADD BOOKS, UPDATE BOOKS, VIEW BOOKS, SEARCH BOOKS, CHANGE PWD, and SIGNOUT. The main content area lists several books with their details:

Book Title	Author Name	Volume	Edition	Publisher	Price	Contents
C#.Net	Nagaji	II	1	MsPress	500.0000	View Contents
ASP.Net HungryOnes	Rajesh Tiwari	II	1	MsPress	500.0000	View Contents
java	sriam	3	1	sunmicrosystem	1200.0000	View Contents
war and peace	leo tolstoy	3	2	beckman	394.0000	View Contents
oracle	raghava	3	5	Nanda	345.0000	View Contents
Ravi						

The browser's address bar shows the URL: `http://localhost:1405/IncidentCueSystem_WebSite/ELearning/fmViewBooks.aspx`. The status bar at the bottom indicates 'Done' and 'Local intranet'.

Search Books:

The screen below appears when Search Books button is clicked and user can search for any particular book



Microsoft Internet Explorer window showing the 'Incident Cue System' search results page. The address bar shows the URL: http://localhost:1405/IncidentCueSystem_WebSite/ELearning/fmSearchBooks.aspx.

The page features a navigation menu with the following items: HOME, ADD BOOKS, UPDATE BOOKS, VIEW BOOKS, SEARCH BOOKS, CHANGE PWD, and SIGNOUT.

The search results are displayed as follows:

Author Name:	Search Book
Book Name:ATOZ OF .NET Volume: 4 Publisher: H.P. Publisher Price: 786.0000	Author Name:Sam Edition: 5 Publisher: H.P. Publisher Price: 786.0000
Book Name:Dracle Volume: 5 Publisher: H.P. Publisher Price: 786.0000	Author Name:Sam Edition: 5 Publisher: H.P. Publisher Price: 786.0000
Book Name:Harry Potter Volume: 6 Publisher: H.P. Publisher Price: 786.0000	Author Name:Sam Edition: 6 Publisher: H.P. Publisher Price: 786.0000
Book Name:Sap Volume: 4 Publisher: H.P. Publisher Price: 786.0000	Author Name:Sam Edition: 5 Publisher: H.P. Publisher Price: 786.0000
Book Name:Dracle Volume: 7 Publisher: H.P. Publisher Price: 765.0000	Author Name:Sam Edition: 7 Publisher: H.P. Publisher Price: 765.0000

Password Change Screen:

Admin can change the password of his account by clicking on CHANGE PWD button.

The screenshot shows a Microsoft Internet Explorer browser window displaying the 'Incident Cue System' password change page. The browser's address bar shows the URL: `http://localhost:1405/IncidentCueSystem_WebSite/ELearning/fmChangePassword.aspx`. The page features a navigation menu with links: HOME, ADD BOOKS, UPDATE BOOKS, VIEW BOOKS, SEARCH BOOKS, CHANGE PWD, and SIGNOUT. The main content area is titled 'Change your password here' and contains two input fields: 'Enter your new password:' and 'Confirm password:'. Both fields are masked with dots. A 'Save' button is positioned below the second field. The browser's status bar at the bottom indicates 'Done' and 'Local intranet'.

Incident Cue System

e-learning

HOME ADD BOOKS UPDATE BOOKS VIEW BOOKS SEARCH BOOKS CHANGE PWD SIGNOUT

Change your password here

Enter your new password:

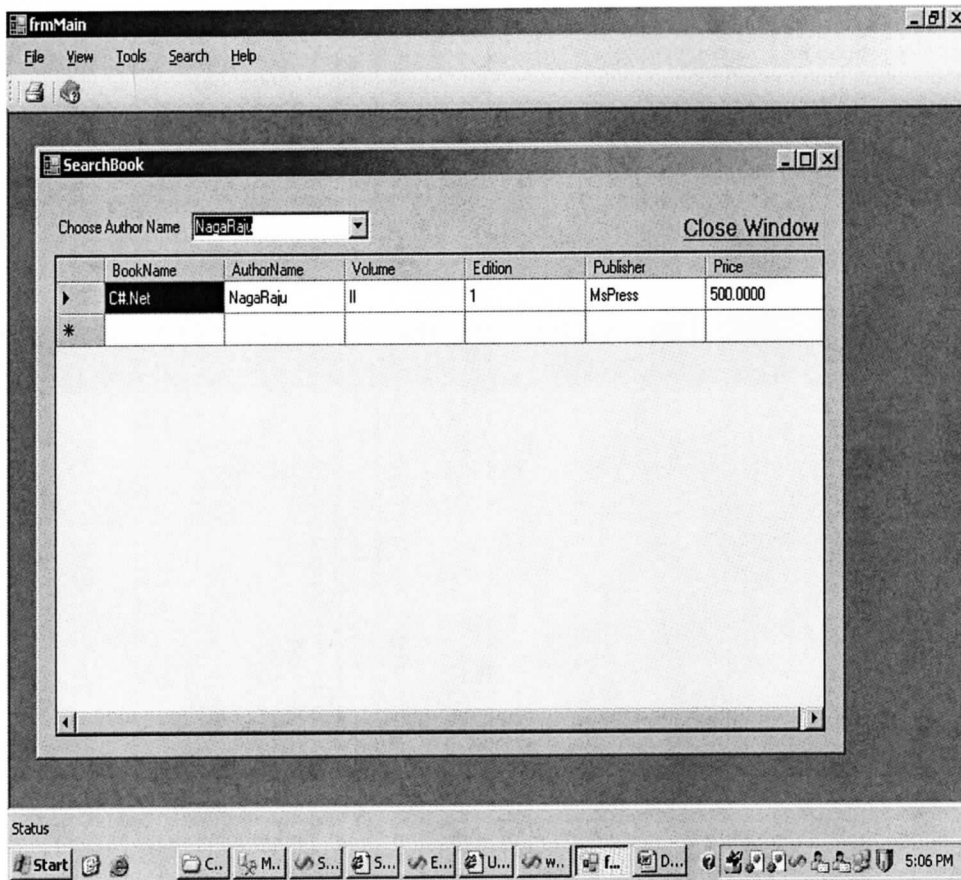
Confirm password:

Save

Done Local intranet

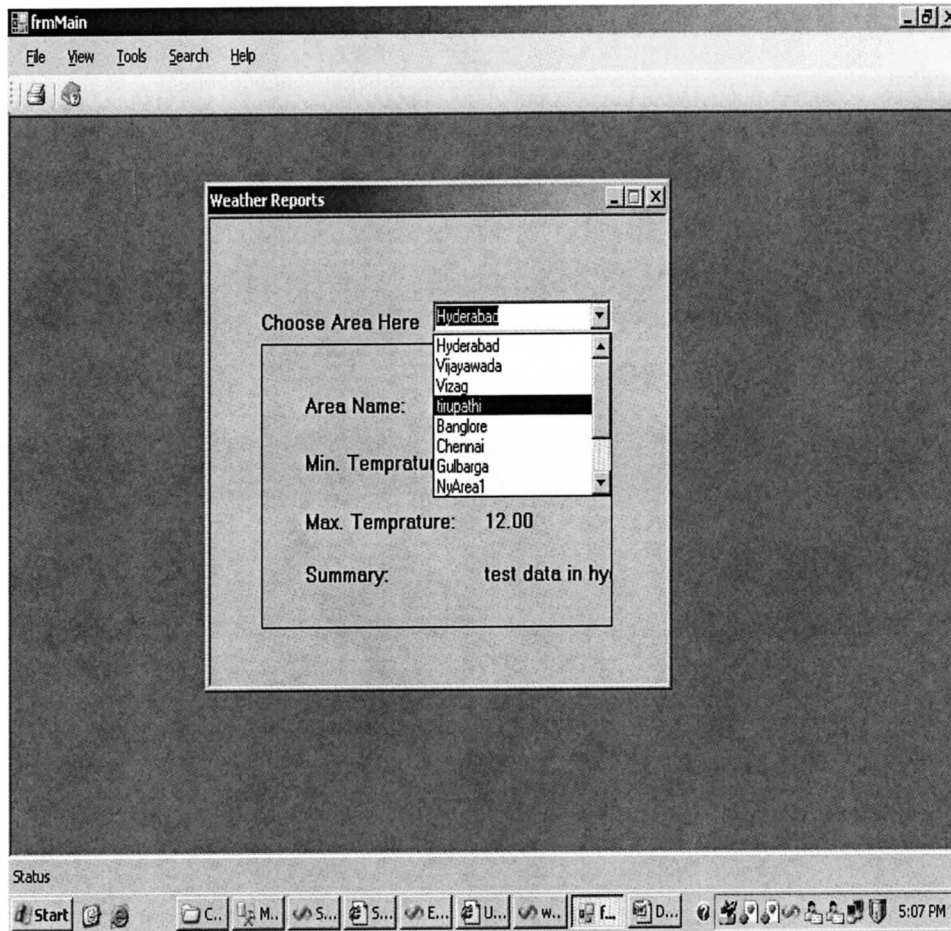
5.3 Windows App

The screen below is the windows application where a book is searched using an author's name. When a name of an author is selected and searched, all books written by the author are displayed.



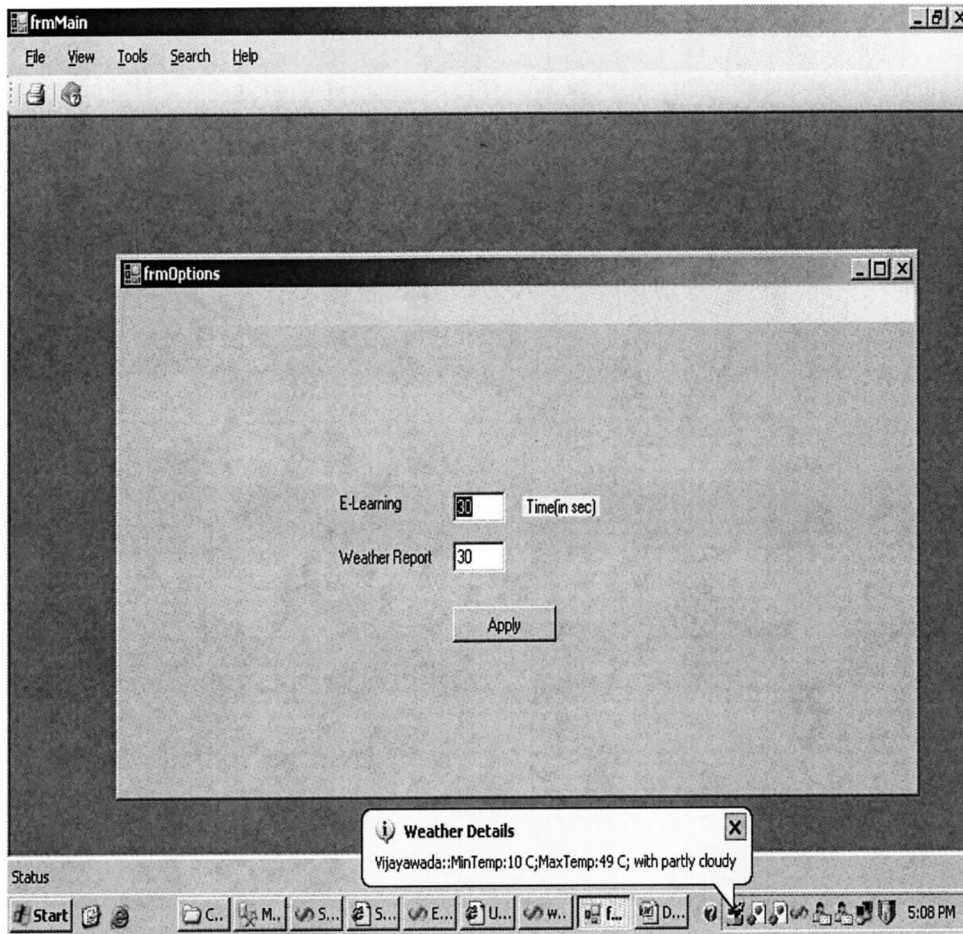
Search Weather conditions of a place:

The screen below is the windows application for weather report, select a place from the list of places and weather forecast of that place is displayed.



Alert Generation:

The screen below shows the weather alerts that are displayed in the set time intervals.



6. TESTING

Unit Testing

Unit testing focuses verification effort on the smallest unit of software design, the module.

The unit testing we have is white box oriented and some modules the steps are conducted in parallel.

White Box Testing

This type of testing ensures that

- All independent paths have been exercised at least once
- All logical decisions have been exercised on their true and false sides
- All loops are executed at their boundaries and within their operational bounds
- All internal data structures have been exercised to assure their validity.

To follow the concept of white box testing we have tested each form .we have created independently to verify that Data flow is correct, All conditions are exercised to check their validity, All loops are executed on their boundaries. (Roy, 2009)

Conditional Testing

In this part of the testing each of the conditions were tested to both true and false aspects. And all the resulting paths were tested. So that each path that may be generate on particular condition is traced to uncover any possible errors.

Data Flow Testing

This type of testing selects the path of the program according to the location of definition and use of variables. This kind of testing was used only when some local variable were declared.

The definition-use chain method was used in this type of testing. These were particularly useful in nested statements.

Loop Testing

In this type of testing all the loops are tested to all the limits possible. The following exercise was adopted for all loops:

- All the loops were tested at their limits, just above them and just below them.
- All the loops were skipped at least once.
- For nested loops test the inner most loop first and then work outwards.
- For concatenated loops the values of dependent loops were set with the help of connected loop.
- Unstructured loops were resolved into nested loops or concatenated loops and tested as above.

7. CONCLUSION

It has been a great learning experience for me to work on this challenging project. This project proved good for me as it provided practical knowledge of not only programming in ASP.NET and VB.NET web based application but also about all handling procedure related with “Incident Cue System”. Using such alerting mechanism we can provide necessary information to the end user without any disturbance in working style. Being an end user we can watch the alerts to know the status (e.g. Weather forecast) and if necessary he/she can get full quote information using the client application.

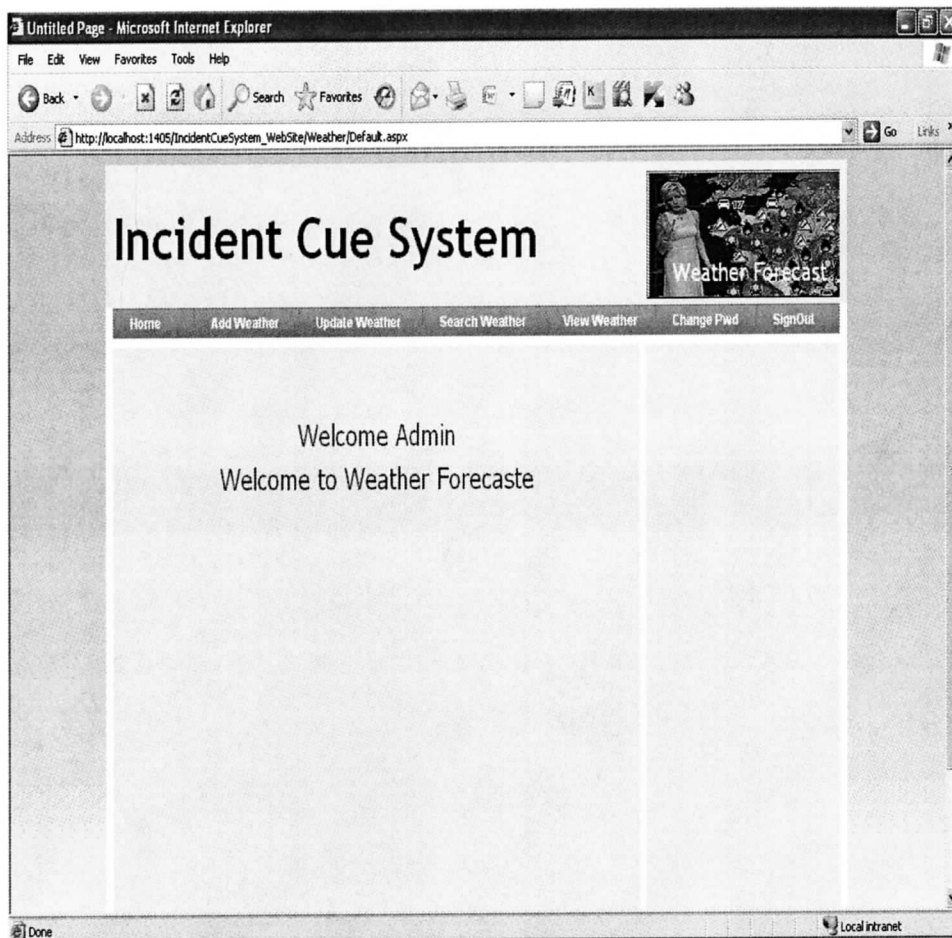
This System being web-based and an undertaking of Cyber Security Division, needs to be thoroughly tested to find out any security gaps. Next step in the process of improving this project is to implement in mobile based alert generations. A console for the data centre may be made available to allow the personnel to monitor on the sites which were cleared for hosting during a particular period. Moreover, it is just a beginning; further the system may be utilized in various other types of auditing operation viz. Network auditing or similar process/workflow based applications.

8. REFERENCES

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- Boehm, W.B. (1988, May) *A Spiral Model of Software Development and Enhancement*. Retrieved from <http://weblog.erenkrantz.com/~jerenk/phase-ii/Boe88.pdf>
- Hoare, T. & Wickerson, J. (n.d.) *Unifying models of data flow*. Retrieved from <http://www.cl.cam.ac.uk/~jpw48/unifyingmodelsofdataflow.pdf>
- Roy, R.(2009, June 9). *White Box Testing Technique*. Retrieved from <http://www.codeproject.com/Articles/37111/White-Box-Testing-Technique>

9. APPENDIX A SCREENSHOTS

Weather Forecast Welcome Page



Forecast Weather Details page


Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites

Address: http://localhost:1405/IncidentCueSystem_WebSite/Weather/firmAddWeather.aspx

Incident Cue System



Home Add Weather Update Weather Search Weather View Weather Change Pwd SignOut

Enter ForeCast Weather Details

Country: Date:
State: (mm/dd/yyyy)
AreaName:

Temperature: Min Temp Max Temp
Humidity(%) RainFall(cm)
Weather Summary

[UpdateCurrent Weather](#)
[Click Here to View Weather Details](#)

Done Local intranet

Weather Update Page

The screenshot shows a Microsoft Internet Explorer browser window displaying the 'Incident Cue System' website. The address bar shows the URL: `http://localhost:1405/IncidentCueSystem_WebSite/Weather/frmUpdateWeather.aspx`. The page features a navigation menu with links: Home, Add Weather, Update Weather, Search Weather, View Weather, Change Paid, and SignOut. A 'Weather Forecast' image is visible in the top right. The main content area is titled 'Update Weather' and contains a form with the following fields:

- Area Id: 700 (dropdown menu)
- Current Temp: 11.00 (text input)
- Min Temp: 10.00 (text input)
- Max Temp: 49.00 (text input)
- Humidity: 14.00 (text input)
- Rain Fall: 0.00 (text input)
- Weather: partly cloudy (text input)
- Summary: (text input)

Below the form, there is a note: *(* are mandatory)* and an 'Update' button. The browser's status bar at the bottom shows 'Done' and 'Local intranet'.

Weather Details Page


Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Print Copy Paste

Address http://localhost:1405/IncidentCueSystem_WebSite/Weather/rmSearchWeather.aspx Go Links

Incident Cue System



Home Add Weather Update Weather Search Weather View Weather Change Paid SignOut

Weather Details

Country Wise Area's Weather

State Wise Area's Weather

All Area's Weather

[Show Details](#)

Select Country Name

AreaID	AreaName	MinTemp	MaxTemp	Summary
1400	St1Area1	10.00	30.00	clear sky
1500	St2Area2	34.00	34.00	Weather is very Bad with Black Sky
1600	St3Area3	10.00	30.00	partly cloudy

Done Local intranet


Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://localhost:1405/IncidentCueSystem_WebSite/Weather/firmViewWeather.aspx

Incident Cue System



Home Add Weather Update Weather Search Weather View Weather Change Pwd SignOut

2/5/2010 12:00:00 AM

Area Id:	600	Current Temp:	48.00
Minimum Temp:	11.00	Humidity:	1.00
Maximum Temp:	22.00	Rain Fall:	1.00

Weather Summary: goooooooooooo

12/18/2009 12:00:00 AM

Area Id:	700	Current Temp:	11.00
Minimum Temp:	10.00	Humidity:	14.00
Maximum Temp:	49.00	Rain Fall:	0.00

Weather Summary: partly cloudy

2/2/2010 12:00:00 AM

Area Id:	800	Current Temp:	10.00
Minimum Temp:	15.00	Humidity:	16.00
Maximum Temp:	50.00	Rain Fall:	2.00

Weather Summary: cool

12/21/2009 12:00:00 AM

Area Id:	900	Current Temp:	12.00
Minimum Temp:	34.00	Humidity:	12.00
Maximum Temp:	47.00	Rain Fall:	0.00

Weather Summary: Wet

Done Local intranet


Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://localhost:1416/IncidentCueSystem/Website/Weather/fmChangePassword.aspx

Incident Cue System



Home Add Weather Update Weather Search Weather View Weather Change Pwd SignOut

Change your password here

Enter your new password

Confirm password

Save

Done Local Intranet

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://localhost:1405/IncidentCueSystem_WebSite/firmAboutSystem.aspx Go Links

Incident Cue System

Weather Forecast and E - Learning

HOME E-LEARNING WEATHER SEARCH BOOK SEARCH WEATHER ABOUT SYSTEM CONTACT

Weather Forecast

A weather forecast is a prediction on what the weather will be like in the future. You can predict the weather by taking measurements such as air pressure and cloud cover. A forecast gets less trustworthy as the time it forecasts gets further away. In this module administrator type of user stores the weather forecast details in centralized database. This module includes displaying the list of locations weather forecast details. General users can search particular location weather forecast by giving the location name in this module.

E-Learning

E-learning can involve a greater variety of equipment than online training or education, for as the name implies, "online" involves using the Internet or an Intranet. Documents can be used to provide learning materials. Distance education provided the base for e-learning's development. E-learning can be "on demand". It overcomes timing, attendance and travel difficulties. This Module includes the following functionalities. Administrator type of users can enter the book details in central database. That can be viewed by the visitors of the web site. E-Learning includes like search the books, Details of the Books and down loading the books etc.

Some Links

- Home
- Search Book
- Search Weather
- Articles
- About System
- Contact

Done Local intranet

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Print Mail Stop

Address http://localhost:1405/IncidentCueSystem_WebSite/firmContactUs.aspx Go

Incident Cue System

Weather Forecast and E - Learning

HOME E-LEARNING WEATHER SEARCH BOOK SEARCH WEATHER ABOUT SYSTEM CONTACT

Contact Us

We are always pleased to hear from our valued customers, and anyone with an interest in our website. We take your questions, suggestions and other input very seriously, and will do all we can to assist you.

We are typically available Monday through Friday, 9AM-5PM Central time. We do our best to answer our many inquiries in a timely manner.

CONTACT US BY EMAIL:

Department:

Your Email Address:

Subject:

Body:

Some Links

- Home
- Search Book
- Search Weather
- Articles
- About System
- Contact

Local intranet