MIGRATING TRAINEE PORTAL TO MOSS 2007

By

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Submitted in partial fulfilment of the Degree of Bachelor of Technology

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY-WAKNAGHAT

CERTIFICATE

This is to certify that the work entitled, "Migrating Trainee Portal to MOSS 2007" submitted by Shefali Agarwal (051202), Manish Rajpal (051299) in partial fulfilment for the award of degree of Bachelor of Technology in Year 2009 of Jaypee University of Information Technology has been carried out under my supervision. This work has not been submitted partially or wholly to any other University or Institute for the award of this or any other degree or diploma.

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Certificate of Project Completion at Infosys

This is to certify that **Mr./Ms. Shefali Agarwal** has undertaken the project titled "Migrating Trainee Portal" at our organization **Infosys Technologies Limited, Mysore,** under the guidance of Mr. Arpan Patro for the period **19 January 2009 to 15 May 2009.**

Signature of Project Manager

ARPAN PATRO

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Signature of Project Manager

ARPAN PATRO

ACKNOWLEDGMENT

Working on a Live Project is the greatest pleasure for every student and the success of the project enhances the confidence in the student.

Very first I will take opportunity to thank Jaypee University of Information Technology, Waknaghat for giving me this golden opportunity to work with esteemed organization like Infosys Technologies ltd. It is a dream of every person to do project in Infosys and I am very glad that I got this opportunity.

I thank E&R department, Infosys Technologies Ltd for giving me the opportunity to work freely.

The key to success of a project lies in the hands of the team working on it. Words will be poor gratitude but I take it as an opportunity to offer my heartfelt gratitude to our esteemed Project Lead Mr. Arpan Patro for his constant encouragement, enlightened comments, and problem solving skills, help and guidance throughout this project.

I also thank my Batch owner at Infosys Technologies Ltd, Mr. Nachiket Shahu Deshmukh for supporting at every step and guiding at crucial points.

I am very much thankful to Mr. Satish Chandra, my project guide in the college for his constant support though out the completion of project through all the possible ways of communication.

I thank my entire project Mates and all the colleagues of Infosys Technologies Ltd. who contributed their knowledge and experiences whenever required in this period.

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LIST OF ABBREVIATIONS

BCL	Base Class Library
CLI	Common Language Infrastructure
CLR	Common Language Runtime
FCL	Framework Class Library
MOSS	Microsoft Office SharePoint Server
UI	User Interface
WCF	Windows Communication Foundation
WPF	Windows Presentation Foundation
WSS	Windows SharePoint Services

ABSTRACT

The project '**Migrating Trainee Portal To MOSS 2007**' is to migrate existing trainee portal of the customer to MOSS 2007(**M**icrosoft **O**ffice **S**harePoint **S**erver). The trainee portal is the location where trainees get the information regarding the training like sharing artifacts, useful links, documents communications, schedules of the training etc. The portal uses features available in MOSS 2007 that are more robust, better UI, flexible and user friendly.

The existing system is in ASP which provides the documents, and also pages regarding the information related to the training. The functionalities are limited in the existing system. The existing portal mainly contains documents which are downloadable by the trainees, informative pages and links. Training Portal built using the Microsoft Office SharePoint Server 2007 is an integrated suite of server capabilities that can help improve organizational effectiveness by providing comprehensive content management and enterprise search and facilitating information-sharing across boundaries for better insight. It will help the customer to facilitate collaboration, provide content management features and supply access to information that is essential to organizational goals and processes.

SharePoint is actually an ASP.NET application and SQL Server as the data storage medium. It is a complete tool, fully ready to use, with for instance all the authentication/authorization implemented, document management implemented. MOSS Portals make it simple to access everything you need in one easy-to-use interface. MOSS portal provides **a comprehensive portal framework** makes it easy to build portal sites that meet the specific requirements of your audience. A flexible, highly scalable architecture supports personal, divisional, intranet, extranet, and Internet sites. **Integrated web content management** makes customizing site look-and-feel easy. Powerful authoring features simplify content contribution. Centrally managed site design, publishing and deployment capabilities.

CHAPTER 1

INTRODUCTION

1.1 PROBLEM STATEMENT

The main objective of the project "**Migrating Trainee Portal To MOSS 2007**" is to migrate the customer's existing trainee portal to MOSS 2007(Microsoft Office SharePoint Server). The Trainee Portal is used to provide information and help to trainees at various stages of their training. In trainee portal we mainly share artifacts, useful links, documents communications, schedules of their training etc. The project is going to be developed using Microsoft Office SharePoint Server 2007. We can use features available in MOSS 2007 that are more robust, better UI, flexible and user friendly.

Microsoft Office SharePoint Server 2007 will provide a single, integrated location where trainees can efficiently collaborate with their team members, find organizational resources, search for experts and corporate information and leverage business insight to make better-informed decisions .This Portal provides a one Stop Shop to all information that a fresh entrant would require and look for in training. About 1000 to 10000 trainees can access the portal simultaneously.

Training Portal built using the Microsoft Office SharePoint Server 2007 is an integrated suite of server capabilities that can help improve organizational effectiveness by providing comprehensive content management and enterprise search and facilitating information-sharing across boundaries for better insight. It will help the customer to facilitate collaboration, provide content management features and supply access to information that is essential to organizational goals and processes.

The trainee portal in MOSS 2007 will help the trainees to download and share study material, use discussion forum ,keep track of their performance ,access the quick links, familiarize with the rules and guidelines followed, give their feedback, view latest news and updates.

1.2 TECHNOLOGY USED

MICROSOFT OFFICE SHAREPOINT SERVER(MOSS) 2007

1.2.1 *What is Microsoft Office SharePoint Server?*

MOSS Stands for "Microsoft Office SharePoint Server". It is an extension of Windows SharePoint Services (WSS v3) that allows ALL information to be organized and stored in a central location. MOSS coordinates WSS, Microsoft Office applications (such as Access and Outlook 2007), and an advanced hierarchy of organization tools for collaborating on all aspects of business.

MOSS, often called a "SharePoint Portal," offers users an easy-to-use workspace for the structure-intense, shared application environment running in the background. This familiar Microsoft interface allows you to navigate huge amounts of information, centralize communication and improve business efficiency.

Microsoft Office SharePoint Server (MOSS), is part of Microsoft SharePoint, and runs on top of Windows SharePoint Services (WSS). MOSS builds on WSS by adding both core features as well as end user web parts to it. Its main strength is enabling an organization's information to be organized and aggregated in one central, web-based application and provide a taxonomy for corporate data. MOSS integrates closely with applications in the Microsoft Office suite and adds various features such as hierarchical organization of content areas, enhanced navigation, Single Sign On, personalization features, indexed search, the Business Data Catalog, and in-browser rendering and, in certain cases, editing of Microsoft Office documents. It can also be used to create specialized document-specific libraries, such as Microsoft PowerPoint slide libraries, which can be used to share not only specific slides from a presentation but their design as well.[1] The latest version, MOSS 2007, improves over its predecessor, SPS 2003, in integrating with Microsoft Office applications, enterprise content management (with the integration of Microsoft Content Management Server into MOSS), Enterprise Search, web content management, more specialized document management, records management, Web 2.0 collaboration functionality like blogs and wikis, delivery of information stored in SharePoint via RSS, and the ability to take content and lists offline with Outlook 2007 and Microsoft Access. A MOSS application can abstract multiple WSS sites under the covers.

1.3 PLATFORM USED

.NET FRAMEWORK 3.5

1.3.1 *What is .NET Framework?*

The Microsoft .NET Framework is a software framework that can be installed on computers running Microsoft Windows operating systems. It includes a large library of coded solutions to prevent common programming problems and a virtual machine that manages the execution of programs written specifically for the framework.

The framework's Base Class Library provides a large range of features including user interface, data and data access, database connectivity, cryptography, web application development, numeric algorithms, and network communications. The class library is used by programmers, who combine it with their own code to produce applications.

Programs written for the .NET Framework execute in a software environment that manages the program's runtime requirements. Also part of the .NET Framework, this runtime environment is known as the Common Language Runtime (CLR). The CLR provides the appearance of an application virtual machine so that programmers need not consider the capabilities of the specific CPU that will execute the program. The CLR also provides other important services such as security, memory management, and exception handling. The class library and the CLR together constitute the .NET Framework.

Version 3.5 uses the CLR of version 2.0. In addition, it installs .NET Framework 2.0 SP1, (.NET Framework 2.0 SP2 with 3.5 SP1) and .NET Framework 3.0 SP1 (.NET Framework 3.0 SP2 with 3.5 SP1), which adds some methods and properties to the BCL classes in version 2.0 which are required for version 3.5 features such as Language Integrated Query (LINQ). These changes do not affect applications written for version 2.0, however.

Provides the first additions to the base class libraries to the .NET Framework since version 2.0. The following technologies are introduced in the .NET Framework 3.5:

- Language Integrated Query (LINQ).
- New compilers for C#, Visual Basic, and C++.

- ASP.NET AJAX.

The .NET Framework 3.5 SP1 delivers:

- Performance increases between 20-45% for WPF-based applications – without having to change any code
- WCF improvements that give developers more control over the way they access data and services
- Streamlined installation experience for client applications
- Improvements in the area of data platform, such as the ADO.NET Entity Framework, ADO.NET Data Services and support for SQL Server 2008's new features.
- ASP.NET Dynamic Data to facilitate rapid data driven development

Principal design features of .NET framework are:-

Interoperability

Because interaction between new and older applications is commonly required, the .NET Framework provides means to access functionality that is implemented in programs that execute outside the .NET environment. Access to COM components is provided in the System.Runtime.InteropServices and System.EnterpriseServices namespaces of the framework; access to other functionality is provided using the P/Invoke feature.

Common Runtime Engine

The Common Language Runtime (CLR) is the virtual machine component of the .NET framework. All .NET programs execute under the supervision of the CLR, guaranteeing certain properties and behaviors in the areas of memory management, security, and exception handling.

Language Independence

The .NET Framework introduces a Common Type System, or CTS. The CTS specification defines all possible datatypes and programming constructs supported by the CLR and how they may or may not interact with each other. Because of this feature, the .NET Framework supports the exchange of instances of types between programs written in any of the .NET languages. This is discussed in more detail in Microsoft .NET Languages.

Base Class Library

The Base Class Library (BCL), part of the Framework Class Library (FCL), is a library of functionality available to all languages using the .NET Framework. The BCL provides classes which encapsulate a number of common functions, including file reading and writing, graphic rendering, database interaction and XML document manipulation.

Simplified Deployment

The .NET framework includes design features and tools that help manage the installation of computer software to ensure that it does not interfere with previously installed software, and that it conforms to security requirements.

Security

The design is meant to address some of the vulnerabilities, such as buffer overflows, that have been exploited by malicious software. Additionally, .NET provides a common security model for all applications.

Portability

The design of the .NET Framework allows it to theoretically be platform agnostic, and thus cross-platform compatible. That is, a program written to use the framework should run without change on any type of system for which the framework is implemented. Microsoft's commercial implementations of the framework cover Windows, Windows CE, and the Xbox 360. In addition, Microsoft submits the specifications for the Common Language Infrastructure (which includes the core class libraries, Common Type System, and the Common Intermediate Language), the C# language, and the C++/CLI language to both ECMA and the ISO, making them available as open standards. This makes it possible for third parties to create compatible implementations of the framework and its languages on other platforms.

CHAPTER 2

SYSTEM ANALYSIS

2.1 SET UP OF MOSS

Portal sites connect your people to business critical information, expertise, and applications. Microsoft Office SharePoint Server is a world class Enterprise Portal platform that makes it easy to build and maintain portal sites for every aspect of your business.

Connect your people to information and expertise

Quick, easy access to critical information and expertise means better decisions and more rigorous execution.

Connect your people to key business applications

Consolidated access to existing business applications drives consistent performance of common business tasks. Streamlined development of new composite applications can lead to order of magnitude improvements in important business processes.

Connect your people role-specific resources

Personalized information delivery increases the relevance and value of information.

2.2 FEASIBILITY STUDY

For solving any problem successfully the constraints bounding the problem must be defined. There may be many different ways of checking whether a system is feasible or not. The reliability of the system should also be encountered for the feasibility study.

There are four dimensions of software analysis:

- Technology
- Finance
- Time
- Resources

The following feasibility studies were performed to gauge the feasibility of the system.

2.2.1 *Operation Feasibility*

In this test the operational scope of the system is checked. The system under consideration was MOSS 2007 and the MOSS SharePoint Designer and they should have enough operational reach. It is observed that the proposed project is viewer friendly. Also this project proposes the results

of the analysis performed in a comprehensive manner helping the viewer to neatly understand the advantages of using this system.

2.2.2 *Technical Feasibility*

The technology is the first step of feasibility for a project. This test includes the study of function, performance and constraints that may affect the ability to achieve an acceptable system. This test begins with an assessment of the technical viability of the proposed project. The main area of work was using the MOSS technology effectively so that all the applications can be implemented perfectly. The system has many complex technical constraints which can be dealt if time is donated for the same and hence it proves to be technically feasible.

2.3 SYSTEM REQUIREMENT SPECIFICATION

2.3.1 *Project/Product Overview*

The main objective of the project "**Migrating Trainee Portal To MOSS 2007**" is to migrate the customer's existing trainee portal to MOSS 2007(Microsoft Office SharePoint Server). The Trainee Portal is used to provide information and help to trainees at various stages of their training. In trainee portal we mainly share artifacts, useful links, documents communications , schedules of their training etc.The project is going to be developed using Microsoft Office SharePoint Server 2007 . We can use features available in MOSS 2007 that are more robust ,better UI , flexible and user friendly.

2.3.2 *Business of the customer*

The project entitled "Migrating Trainee Portal To MOSS 2007" is being developed for the customer.The Education and Research team of the customer is an typical conglomeration of expertise, experience and skills, fueled by the desire to learn, impart and excel. The

innovation hub of the customer, the Education and Research (E&R) department is one of the key business enabling resource centers. It facilitates the company's growth by leveraging the power of knowledge - by creating an environment for knowledge acquisition, dissemination and management. It manages and sustain the infrastructure for learning and knowledge sharing in the company, whether it's courseware, library services, intranet based learning and online services. On an average it trains about 30,000 new joines a year.

The plethora of activities that the E&R department team delves into is:

- Foundation programme training (including imparting training to international batches)
- Middle level training
- Just In Time (JIT) training
- Technical certification
- Courseware artifacts development
- E-learning courseware development
- Research
- Knowledge Management

With the foundation level training centralized at Mysore, Mysore E&R is progressively becoming the hub of knowledge acquisition, assimilation and dissemination. Consummate training is being imparted on J2EE, Dot Net, Open Systems and Mainframe technologies. All in all there are opportunities galore to imbibe new technologies and grow to scale the acme of perfection.

2.3.3 *Functional Requirements*

2.3.3.1 *Requirements in scope*

- The portal must be a single stop for all communication to the trainees.
- Taking surveys must be made possible.
- All the documents that the trainee requires for the training must be made available to him.
- Links to the existing applications that the trainee can access must be provided.

- There must be a place where the trainee can download software like the Attendance Client and the Self Assessment client.
- General Instructions regarding training and trainee related issues must be present.
- The trainees must be able to ask doubts to the educators from the portal (Discussion). They must not be able to post to each other.
- The performance of the trainee must be shown.
- An option for the trainee to take part in a poll can be present.
- Information regarding the upcoming Events can be there.
- A showcase for E&R Department must be there.(A place where they are introduced to ENR : Possibly if a short video can be shown)
- Information regarding the streams is to be present.
- The portal must be extensible.
- The portal must have security.
- Look and feel must be pleasing.
- The trainee must be able to fill up details as required by the management.
- There must be quick access to useful and common links.
- Inbuilt CGPA calculator.
- The image gallery can be present.

2.3.3.2 *Requirements out of scope*

NA

2.3.3.3 *User Interface*

Web User Interface

2.3.4 *Non Functional Requirements*

Non-functional requirement is a requirement that specify criteria that can be used to judge the operation of a system. It defines how a system is supposed to be. Non-functional requirements are called **qualities** of a system.

- **Security:** Windows Based Authentication will provide security.
- **Audit Trail:** NA
- **Error Logging:** It should log errors based on severity.
- **Multi Language Support:** Not Required
- **Performance:** Best
- **Scalability:** 10000 simultaneous users
- **Availability / reliability**: 24*7 available
- **Data migration:** Data Migration should be supported
- **Data Retention:** Data Retention is required
- **Legal/ regulatory requirements:** NA

2.3.5 *Hardware And Software Requirements*

- **Deployment Environment Requirements**

Hardware requirements

Processor/RAM/HDD	:	2 GB RAM (Server)
Web server	:	IIS
Database Server	:	SQL Server (Enterprise Edition) 2005, MOSS 2007 server, MS Office 2007, .NET framework 3.5,

Software requirements

OS for Web server	:	Windows Server 2008
OS for Database Server	:	Windows Server 2008
DBMS	:	Relational
Third Party S/W	:	NA

- **Development Environment Requirements**

IDE	:	Visual Studio 2008
Processor/RAM/HDD	:	2 GB RAM

CHAPTER 3

SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

The existing system is in ASP which provides the documents, and also pages regarding the information related to the training. The functionalities are limited in the existing system. The existing portal mainly contains documents which are downloadable by the trainees, informative pages and links. The existing one is stream specific. For each stream, there exist different sites.

Drawbacks of the Existing System:-

- Takes lot more time to get same functionality as of SharePoint.
- There is nothing built in. So every solution needs to start from zero.
- Good DB knowledge is also required to create sites having data.
- Security needs to build.

3.2 PROPOSED SYSTEM

The proposed system dealt with the migration of existing training portal to MOSS 2007. The trainee portal provides various information to the trainees regarding the training such as sharing artifacts, useful links, documents communications, and schedules of their training. In the proposed system, various additional functionalities are added like discussion forums, document library, surveys, trainee's performance tracking, and batch wise trainee information. As the proposed system is in MOSS, can include wide range of functionalities. Portal is a SharePoint feature area which facilitates a personalized single point of access to information/applications. The portal components of Office SharePoint Server 2007 include features that are especially useful for designing, deploying, and managing enterprise intranet portals, corporate Internet presence Web sites, and divisional portal sites.

The proposed portal is designed corresponding to each batch. Each portal contains the information corresponding to their batch. The site is based on windows authentication. The features of the system from the existing system are discussion forums where discussions between the educator and the trainee, between trainees is possible, surveys where the trainees can give the feedbacks, trainees performance chart, Leave system using info path, Announcements for the upcoming events, inbuilt CGPA calculator to calculate the cgpa

corresponding to their module marks, document libraries where the documents can be downloaded and uploaded. For each item, the permissions can be set according to the role of each person. A Site Manager can manage permissions for their site by controlling who is able to access information within their site and what type of actions they are able to perform.

Advantages of Proposed System:-

- Many built-in features are available with MOSS which can be used to easily develop complex solutions.
- Rich Security features which come built in.
- Integrated with Content Management.
- Very less effort required to create basic sites with lot of features.
- It is quite scalable.
- OOB Integration with Office products.
- Rich backup techniques
- Business process can be integrated with Workflows.
- Multiple sites can be created with the help of templates.

CHAPTER 4

SYSTEM DESIGN

4.1 HIGH LEVEL DESIGN

4.1.1 *Document Overview*

This High Level Design Document provides a complete description of all the functions of the Training Portal. The TRAINING PORTAL will be designed for trainees of Infosys Technologies Ltd. Training Portal is a simple, efficient, portal that is compatible with a number of browsers like IE, Mozilla, Netscape, Opera etc. Trainee Portal is used to provide information and help to trainees at various stages of their training. In trainee portal we mainly share artifacts, useful links, documents communications, schedules of their training etc. The trainee portal will help the trainees to download and share study material, use discussion forum ,keep track of their performance ,access the quick links, familiarize with the rules and guidelines followed, give their feedback, view latest news and updates. This High Level Design document contains the overall information about the various intended users, the architecture (system and component), operational management, databases and interfaces.

4.1.2 *Intended Audience*

User will be classified on role based authorization. He can see the pages according to his role. User can be classified into these three roles:-

- **EDUCATOR:** To upload the study material and to reply to the doubts posted by trainees.
- **BATCH OWNER:** To upload all the necessary information required by trainee related to their training.
- **TRAINEE:** Trainee will use it to get all the information related to training and to clear all their doubts related to training.
- **NON TECHNICAL BATCH OWNER (ADMIN):** For uploading and modifying the sessions related information.

4.1.3 *Application Overview*

The main objective of the project "**Migrating Trainee Portal to MOSS 2007**" is to migrate Infosys Education & Research Department's existing trainee portal to MOSS 2007(**M**icrosoft **O**ffice **S**harePoint **S**erver). The Trainee Portal is used to provide information and help to trainees at various stages of their training. In trainee portal we mainly share artifacts, useful links, documents communications, schedules of their training etc.The project is going to be developed using **M**icrosoft **O**ffice SharePoint **S**erver 2007. We can use features available in MOSS 2007 that are more robust, better UI, flexible and user friendly.

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The trainee portal in MOSS 2007 will help the trainees to download and share study material, use discussion forum, keep track of their performance, access the quick links, familiarize with the rules and guidelines followed, give their feedback, view latest news and updates.

4.1.4 *Logical Architecture*

Logical Architecture details the logical view of a SharePoint 2007 server. It is a high level view of the SharePoint and does not target tier view.

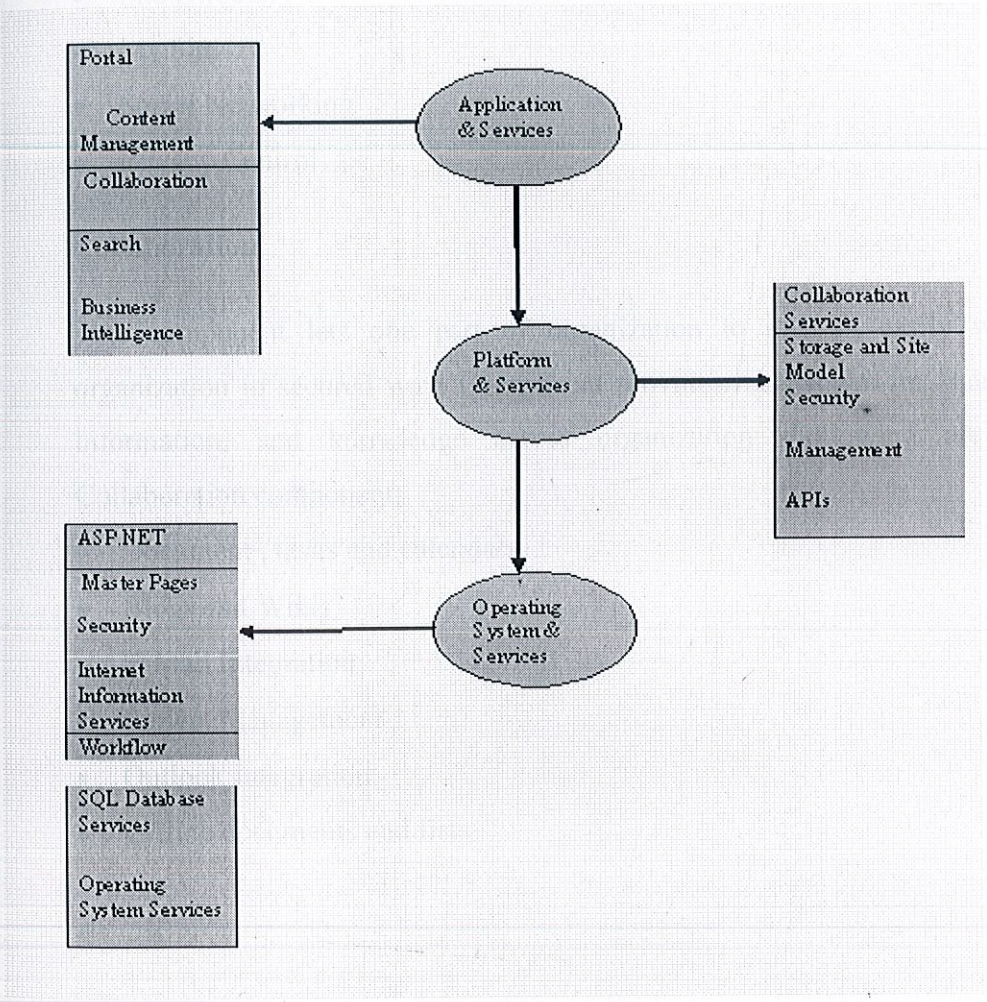

Figure 1.Logical Architecture

4.1.5 *Application and Services*

Portal

The portal components of Office SharePoint Server 2007 include features that are especially useful for designing, deploying, and managing enterprise intranet portals, corporate Internet Web sites, and divisional portal sites. The portal components make it easier to connect to people within the organization who have the right skills, knowledge, and project experience. Following are the features of Portal component in SharePoint Server 2007

- Enterprise Portal Template
- Site Directory
- My Site
- Social Networking
- Privacy Control

Collaboration

This component lets one part of organization to interact easily with other part of organization in secured way. Component provides mechanism for sharing of documents, information, and knowledge across organization. Following are the features of Collaboration component:

- Document , tasks and calendars
- Blogs and Wikis
- E-Mail Integration
- Project Management
- Outlook Integration
- Offline documents and lists

Search

Its search solution for organizations that want to increase productivity and reduce information overload by providing their employees, partners, and customers the ability to find relevant content in a wide range of repositories and formats. With actionable search results that respect security permissions, Office SharePoint Server 2007 lets users go

beyond documents and across repositories to unlock information, find people, and locate expertise in the enterprise. In Office SharePoint Server 2007, search results are delivered quickly and relevance is tuned for enterprise and line-of-business data. Following are the features of Search component:

- Enterprise Scalability
- Contextual relevance
- People and business data search

Business Forms

This facilitates the implementation of forms based business processes from design to publication and user access, this all by mode of Web browser or Microsoft Office InfoPath as client application. Following are the features of Business Forms component in SharePoint Server 2007.This component allows organizations to provide business intelligence to all its trainees, allowing them to share, reuse and manage the business data to have a better use out of it. SharePoint Server 2007 provides web based access to Excel spreadsheets, programmatic reuse of critical line-of-business data, and easy development of Web-based BI dashboards through this component. Following are the features of Business Intelligence component:

- Web forms based front ends
- Line-of-business actions
- Pluggable Single Sign-On(SSO)

Content Management

As the name says this component is about managing Content. One of the big issue or reason of time overhead in organization of all domains is managing documents in better and easier way. This component targets this issue and provides us better way to manage content that includes documents, email messages, video, instant messages, web pages etc. Following are the features of Content Management component:

- Integrated document Management
- Records management
- Web Content management with policies and workflow

4.1.6 *Platform Services*

Storage

Storage services offer Metadata and context to the raw data which is stored in the database. Following services comprises as Storage Services.

- Metadata
- Versioning
- Backup
- Recycle Bin

Security

Security Services in SharePoint 2007 can be grouped as following:

- Pluggable Authentication
- Rights and Roles
- Folder/Item Level Security

Management

These are the services which provide consistent management experience either on administration level or at user level. This helps users/admins to manage SharePoint server 2007 easily. Following comprises as

Management Services of SharePoint:

- Admin UX
- Delegation
- Provisioning
- Monitoring

Site Model

As the name says, these services provides a model which provides a consistent layout, template to SharePoint sites that's too without changing anything in code. Following comprises as Management

Services of SharePoint:

- Templates
- Rendering

- Navigation

Operating System Services

These are the lowest level of architecture. These services manage the devices (both logical and physical) which comprises of physical architecture of the environment. These include the drivers and Administrator Tools that can be used to manage the network, peripheral and platform hardware. Services which comprises under this are:

- Master pages: Provides Consistent Layouts throughout the Site.
- Web parts: This is custom control assembly that uses xml data comprised description file which describes an instance of web part.

- ASP.NET 2.0: This is development platform.
- Personalization: With proper access and permission a user can drag and drop web parts on to pages and have it targeted to particular audience.
- Provider Framework: SharePoint is based on .net framework 3.0

4.1.7 *Physical Architecture*

Type	Configuration	Installed Software
Web Server	IIS	**Windows 2003 Server**
Database Server	MS SQL Server 2005	**Windows 2003 Server**
State Database Server	NA	**NA**
File Server	NA	**NA**
ECS Server	NA	**NA**
Batch Job Server	**NA**	**NA**

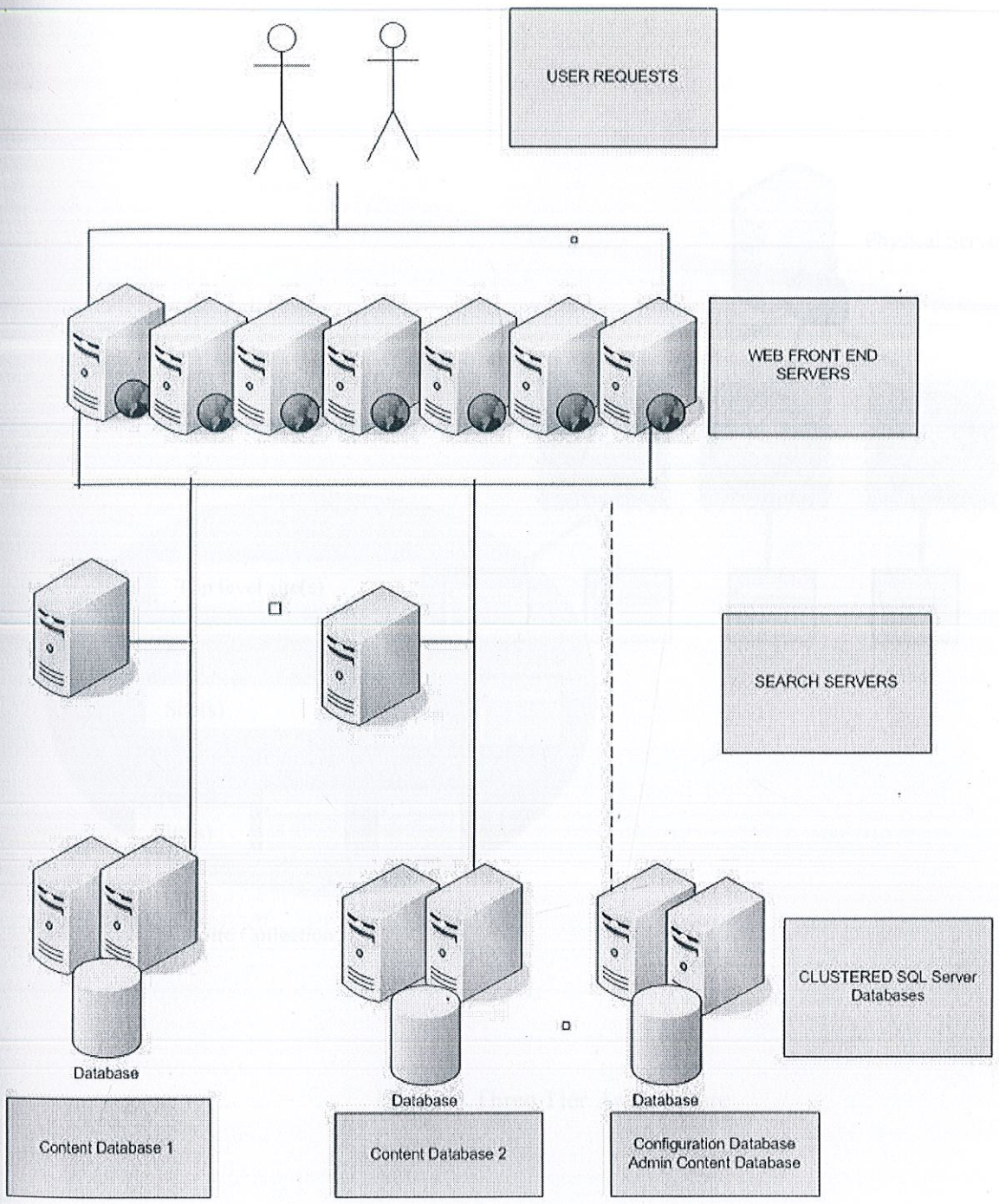

Figure 2.Physical Architecture of MOSS

Physical Architecture of MOSS is divided into 3 tiers:

- Tier1 : Web Front End : Static Web Content and services on the portalTier2 :
- Application Server: Dynamic content processing and application services (like search, indexing... Etc)
- Tier3 : Shared SQL Database Tier

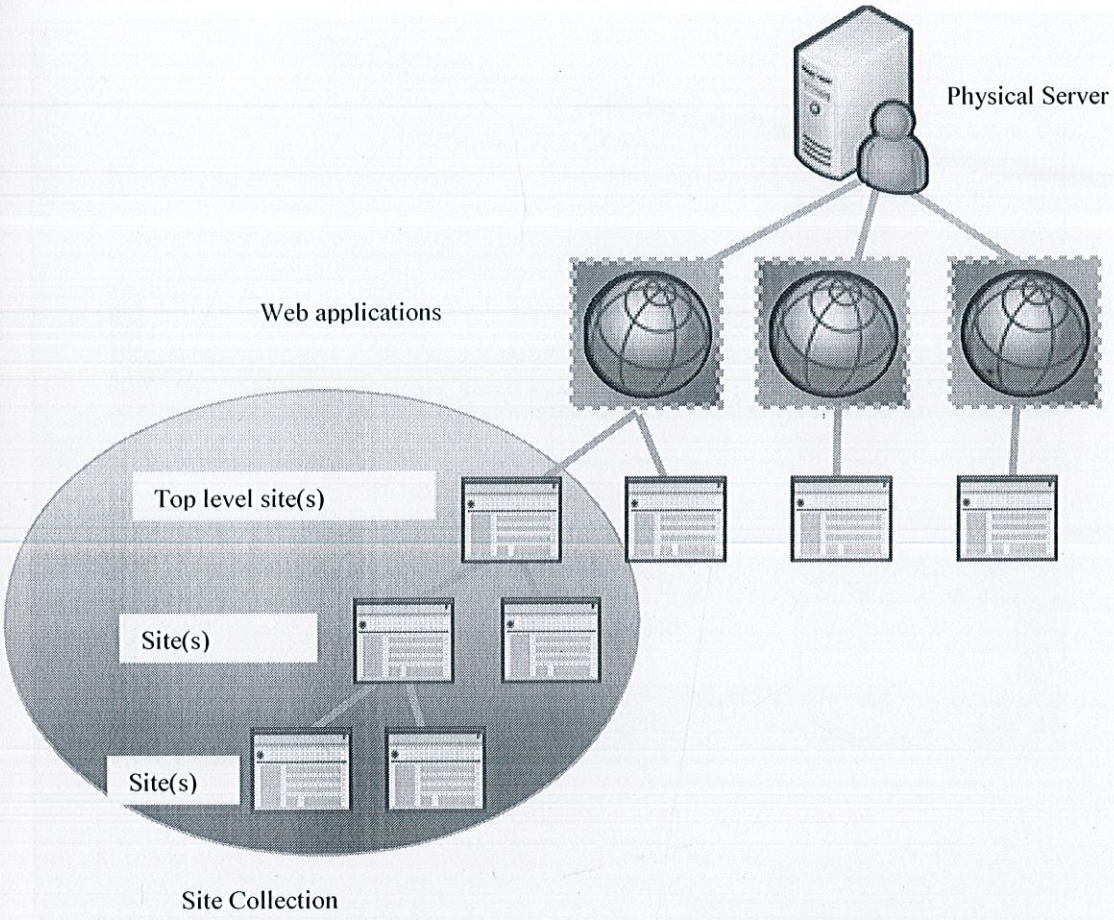

Figure 3.Three Tier Architecture

4.1.8 *Deployment Architecture/Technical Architecture*

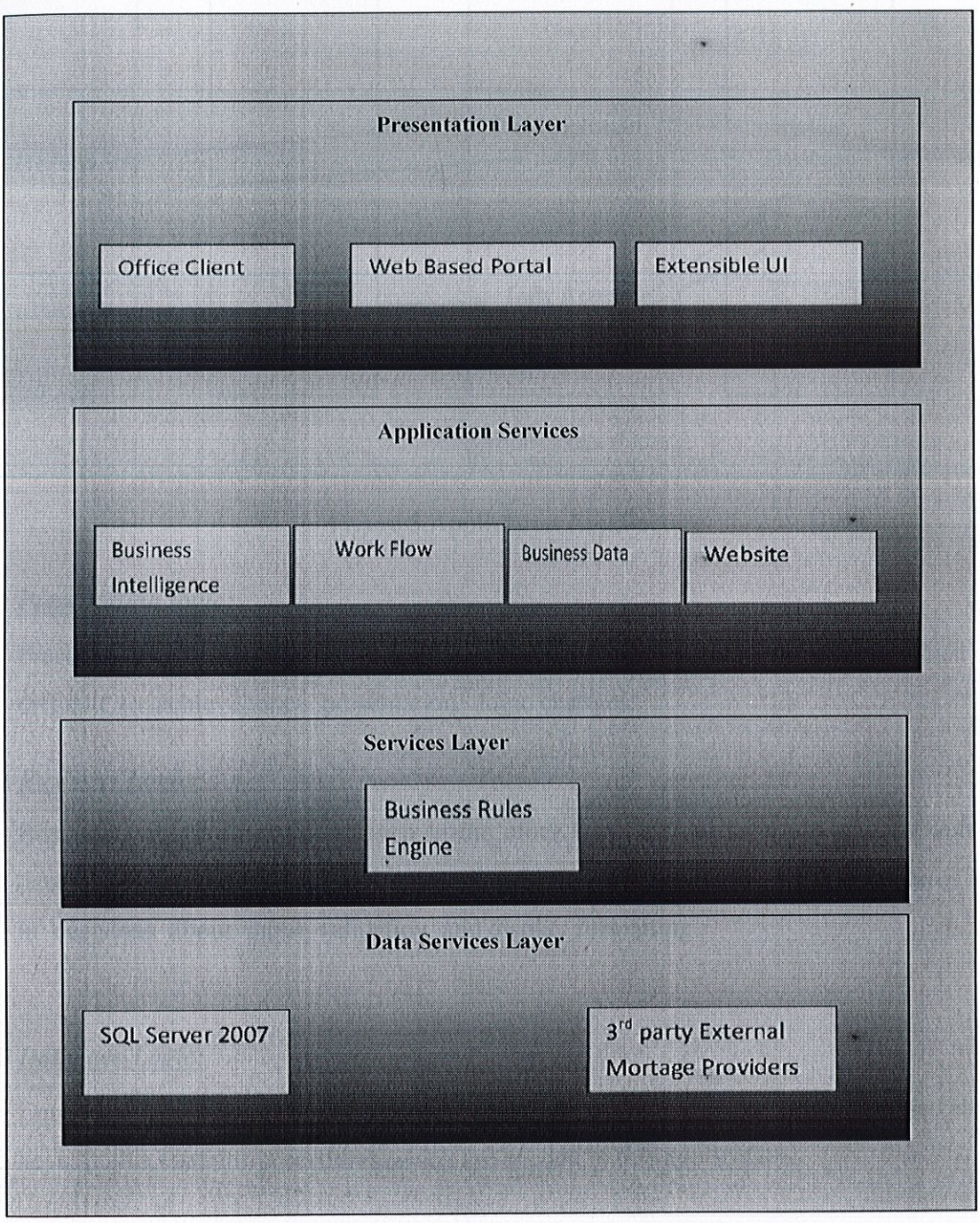

Figure 4.Deployment Architecture

4.1.9 *Application Architecture*

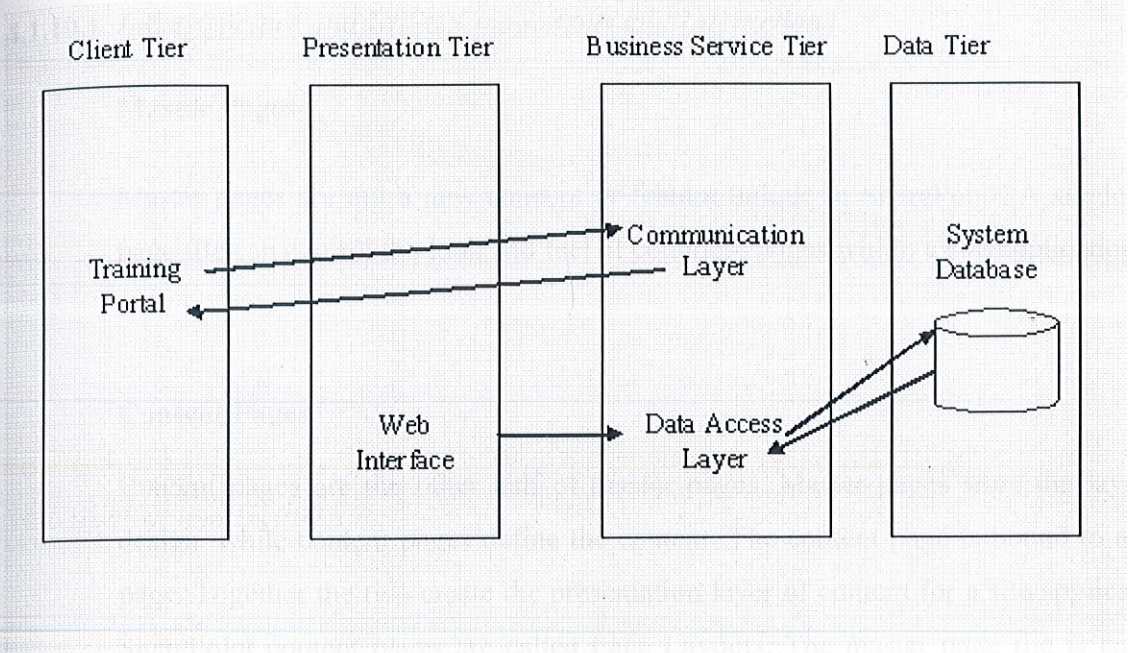

Figure 5.Application Architecture

4.1.9.1 *Presentation logic:*

Presentation logic need to deploy at each and every client separately which is difficult to achieve, once presentation logic changes.

4.1.9.2 *Business Logic:*

Business logic is often interwoven in the other two tiers(the user services tier and the database services tier), such as by encoding business logic and stored procedures and in decisions about input validation and display formatting.

4.1.9.3 *Database Logic:*

Data base logic describes the tables, their columns, data types, primary and secondary keys. It also contains procedures which are needed in this application.

4.1.10 *Component Architecture*

4.1.10.1 *Infrastructure and Utility Components and Interactions*

Master Pages

Master pages are not a new concept or feature unique to SharePoint. A single master page file can control the look and feel of countless pages within a site/application.

Content Pages

Content pages are the other half of master pages. Master pages store the layout and design, while content pages define the content. The content page is bound to a master page. Together the two create the presentation layer of content for a site/application. In SharePoint content pages are called Page Layouts. The master page file is combined with the page layout to create the presentation layer of content for the SharePoint site.

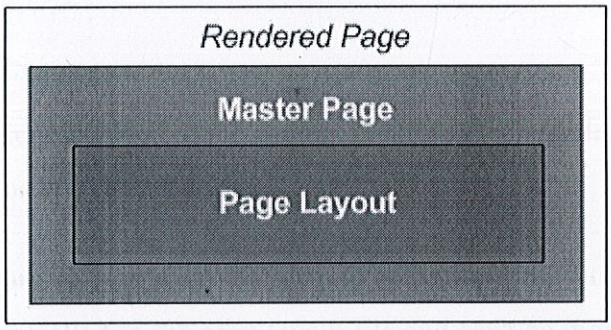

Figure 6.Master Page and Page Layout combine to create the rendered page

The Components of a SharePoint Master Page File

The master page will contain all of the user interface layout code for the site. This includes CSS, JavaScript and HTML. The other core component that is used in a master page file is the Content Placeholders. A Content Placeholder is just that, a location flagged as where content will be inserted. The content is stored in the page layouts. The content placeholders designate where the content from the page layout will be inserted in the master page.

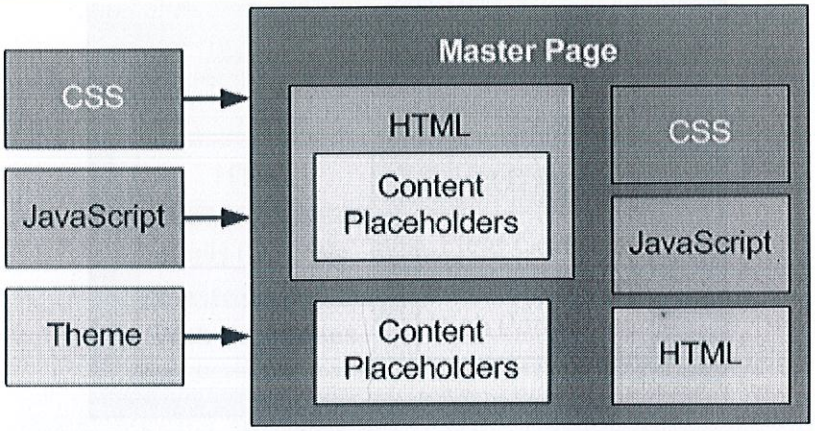

Figure 7.Nesting and components of a Master Page File

The Components of a Page Layout File

The page layout contains all of the Content Controls that match the content placeholders from the master page file. Page layout content should be content that will change from page to page, for example:

- Title, Author, By line
- Body Text

SharePoint content is added to the content controls in a page layout in one of two ways, Field Controls or Web Part Zones.

Field Controls are content areas that map to columns in the Content Type. Field control placement is controlled in the page layout file and can't be moved by the content editor through the web interface

Web Part Zones on the other hand allow content editors to add and move content around on the page. The web part zone is specified in the page layout, and then the content editor can choose to add, remove or rearrange web parts within the specified zones.

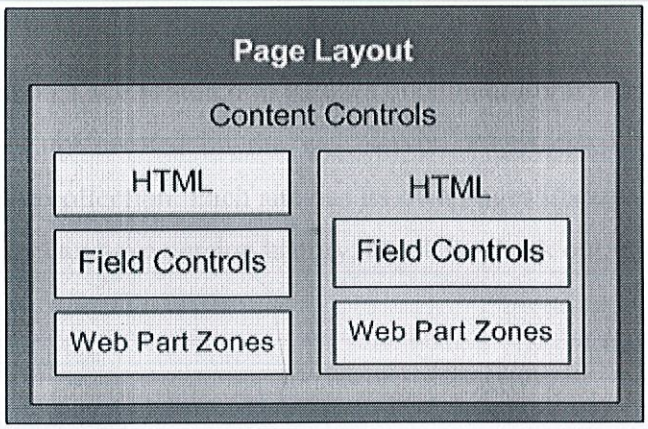

Figure 8.Nesting and components of a Page Layout File

Content Types

A content type is a collection of settings that is applied to a particular category of content that can be reused multiple times. Through content types we can manage metadata and the behavior of a document or item type in a central, reusable way. Columns from a content type are referenced through the field controls in the page layout. One content type can be reference by multiple page layouts, but a page layout can only reference one content type.

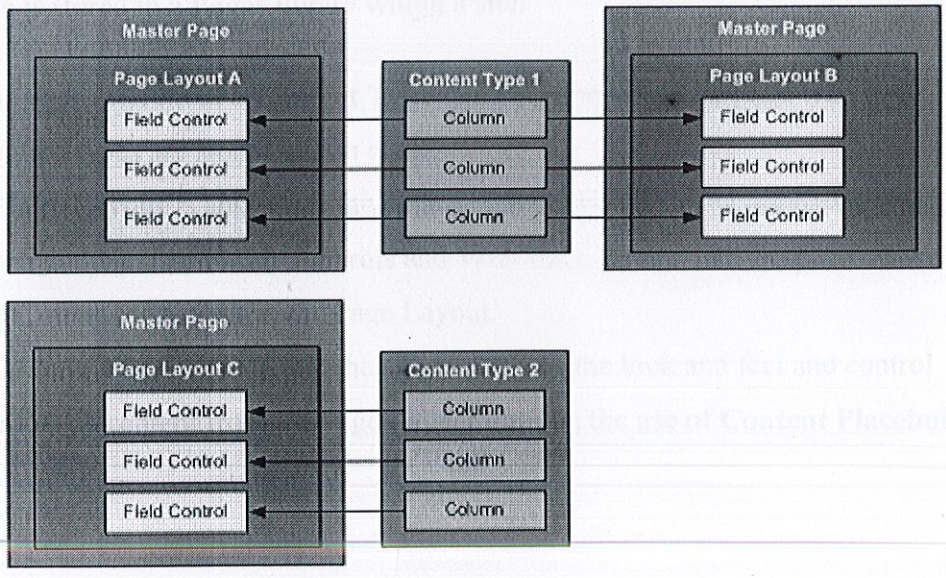

Figure 9.Relationship between Content Types and Page Layouts, shown here wrapped with Master Pages

The Pages Library

A page created on a site is stored in a Pages document library in the content database. A physical file is not created on the web server. Pages can be moved between Page libraries in a site collection. Each site has its own Pages library. As the pages are stored in a library, they can have version history; check in-check out, publishing and workflow capabilities.

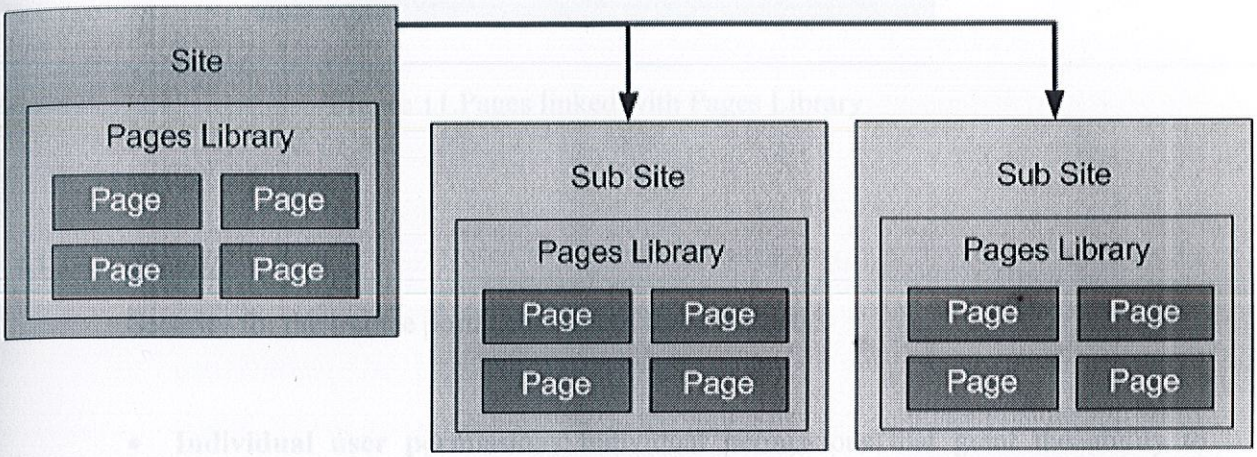

Figure 10.Pages Library

A **Page** is stored in a **Pages** library within a site.

- The Page references a **Content Type** that helps populate the page with data. Content types are stored within a site.
- A **Page Layout** is applied to the Page to control what content appears and where through the use of **Field Controls** and **Web Part Zones**. This is specified within the **Content Controls** in the Page Layout.
- A **Master Page** is applied to the site to wrap on the look and feel and control content placement from the Page Layout through the use of **Content Placeholders**.

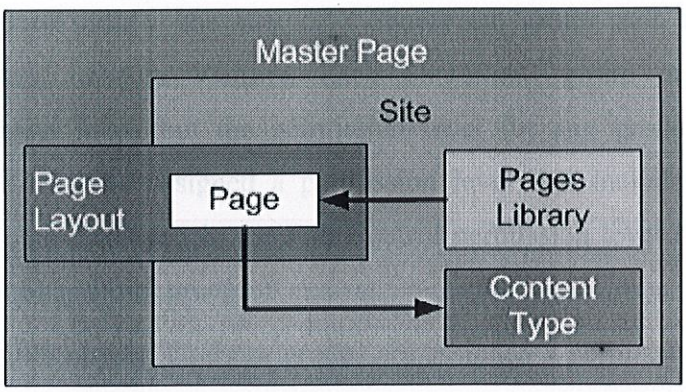

Figure 11.Pages linked with Pages Library

4.1.10.2 *Security*

Security for the trainee portal consists of five elements:

- **Individual user permissions**: Individual permissions that grant the ability to perform specific actions. For example, the View Items permission grants the user the ability to view items in a list. Farm administrators can control which permissions are available for the server farm by using the User Permissions for Web Application page in Central Administration.
- **Permission level:** A pre-defined set of permissions that grant users permission to perform related actions. The default permission levels are: Limited Access, Read, Contribute, Design, and Full Control. For example, the Read permission level includes the View Items, Open Items, View Pages, and View Versions permissions (among others), all of which are needed to read documents, items, and pages of a SharePoint site. Permissions can be included in multiple permission levels. Permission levels can be customized by anyone assigned to a permission level that includes the Manage Permissions permission
- **User:** A person with a user account that can be authenticated through the authentication method used for the server. We can add individual users and directly assign a permission level to each user; users do not have to be part of a group.

- **Group:** A group of users. Can be a Windows security group (such as Department A) that we add to the site, or a SharePoint group such as Site Owners, Site Members, or Site Visitors. Each SharePoint group is assigned a default permission level, but the permission level for any group can be changed as needed. Anyone assigned a permission level that includes the Create Groups permission (included in the Full Control permission level by default) can create custom SharePoint groups.
- **Securable object:** Users or groups are assigned a permission level for a specific securable object: site, list, library, folder, document, or item. By default, permissions for a list, library, folder, document, or item are inherited from the parent site or parent list or library. However, anyone assigned a permission level for a particular securable object that includes the Manage Permissions permission can change the permissions for that securable object. By default, permissions are initially controlled at the site level, with all lists and libraries inheriting the site permissions. Use list-level, folder-level, and item-level permissions to further control which users can view or interact with the site content. You can return to inheriting permissions from a parent list, the site as a whole, or a parent site, at any time.

4.1.11 *Operational Management*

4.1.11.1 *Performance Engineering*

The performance of the trainee portal is based on work-load model. It means performance is affected by the number of users who can simultaneously logon to the trainee portal and access its various features. The application should be able to handle more users so that maximum number of users can do their task without system failure and try to give best performance. In all performance of the application depends on the amount of workload it can bear without breaking down. The application should be able to bear the excessive load without failure.

4.1.11.2 *Exception Handling / Logging Mechanism*

The logging mechanism will be handled by Windows Based Authentication. The application must validate the authentication of the user and should prevent the access to the portal in case of unauthorized access. The user should be provided an access to

various links or otherwise should display error messages if unable to access the link or in case of any wrong input. All other exception handling mechanisms will also be implemented i.e. showing customized error pages, rolling back the changes done on occurrence of an error.

4.1.11.3 *Security Mechanism*

Only valid users of ITL, Infosys can access the system. The system will use the Windows based authentication.

4.1.11.4 *State & Session Management*

The view state is maintained to store the current page object variables for the user interface. For each user a session state will be maintained on the server for using the application and to capture the number of users using that application , application state can be maintained.

4.1.11.5 *Caching*

Caching is required to store the dataset result which comes from the database of the user maintenance and training maintenance using .Net Framework by caching techniques. For caching .Net uses *@output Cache* directive.

4.1.11.6 *Data Access Mechanism*

The SQL Server 2005 is used as backend to store the database and at frontend ,classes under namespace System.Data.SqlClient in .net framework will be created to provide the data to the trainees.

4.1.11.7 *File System Usage*

The zip files will be used that would enable trainees to download the documents like word document,excel sheet etc. The application will make use of .aspx, .html, .cs files.

4.1.11.8 *Internationalization / Localization*

The application will be using standard language i.e. English. So it does not need any local language version. The trainee portal will be used by the trainees in E & R Department, Mysore. So there is no need for the internationalization.

4.1.11.9 *Help Link Strategy*

The link is provided to get help for the various features and methods that can be used by the client during the usage of application.

4.1.12 *Database*

4.1.12.1 *Data Model*

2.3 Data Model

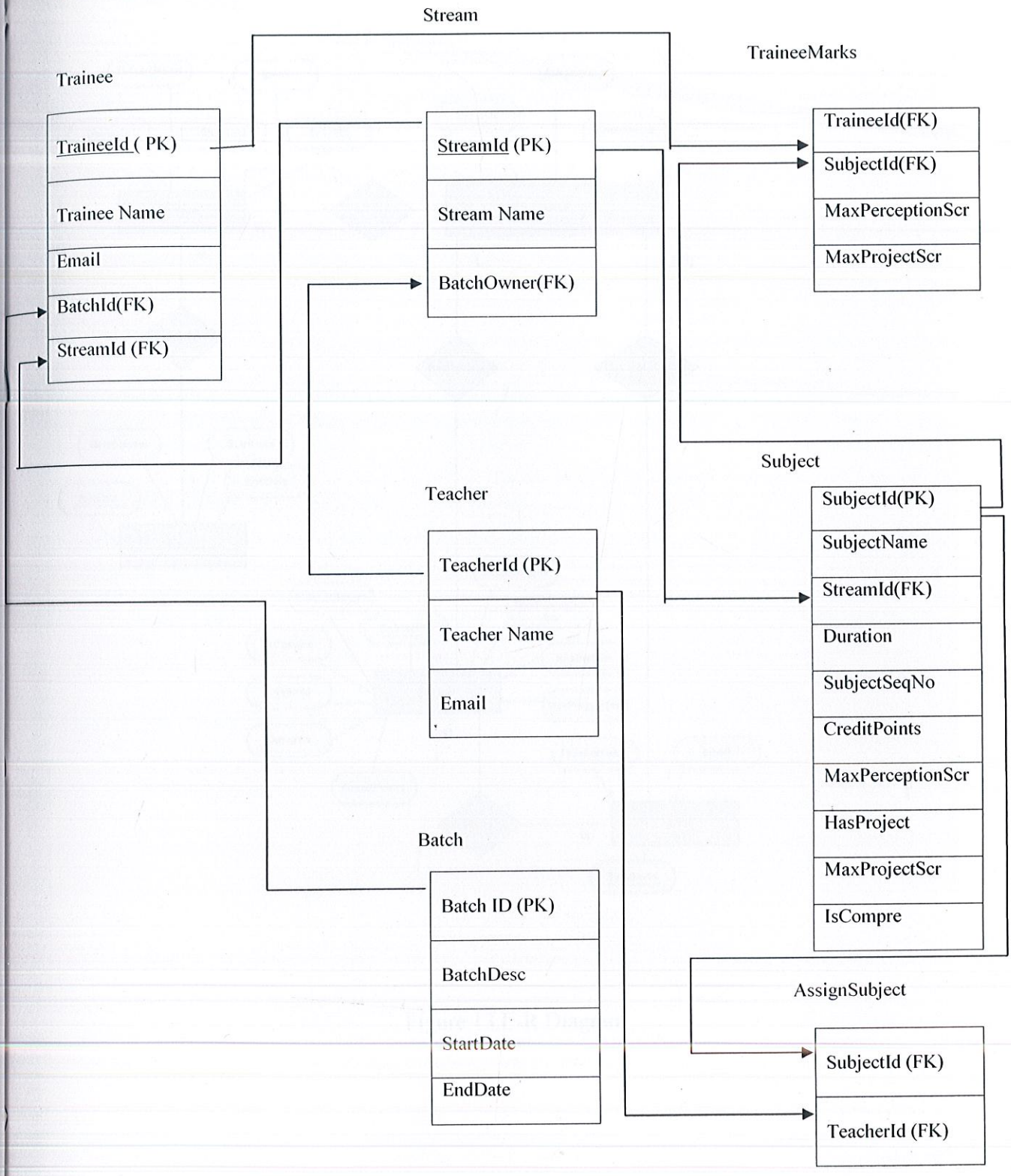

Figure 12.Data Model

4.1.12.2 *E-R Diagram*

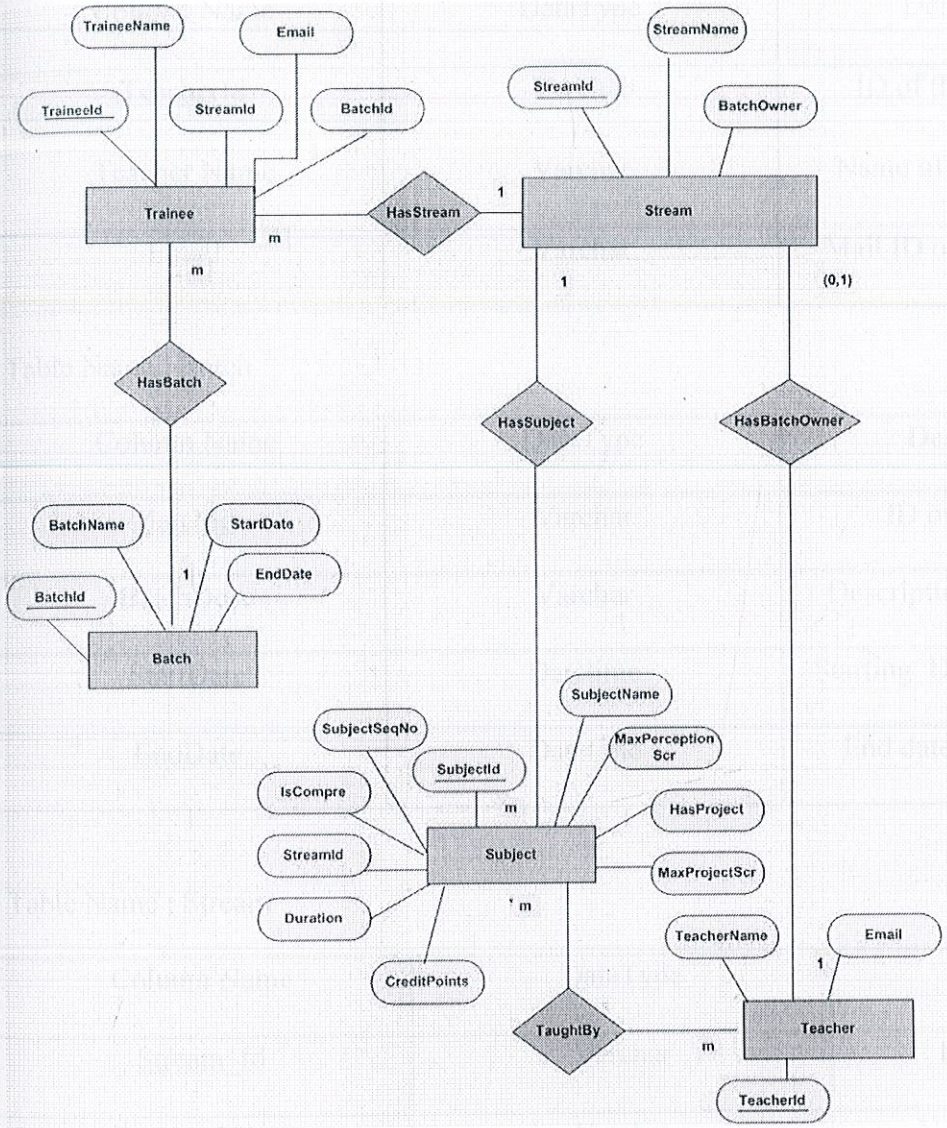

Figure 13.E-R Diagram

4.1.12.3 ***Tables***

Table Name : Teacher

Column Name	DataType	Description
TeacherId	Varchar	ID of the Instructor
Teacher Name	Varchar	Name of the Instructor
Email	Varchar	Mail ID of the instructor

Table Name : Batch

Column Name	DataType	Description
BatchId	Varchar	ID of the batch
BatchDesc	Varchar	Description of the Batch
StartDate	Datetime	Starting Date of the Batch
EndDate	Datetime	End date of that Batch

Table Name : Stream

Column Name	DataType	Description
Stream_Id	Varchar	ID of the Stream
Stream_Name	Varchar	Name of the Stream
Batch_owner	Varchar	Name of the Batch owner It should be an existing Teacher id from table Teacher

Table Name : Trainee_Master

Column Name	DataType	Description
TraineeId	Varchar	ID of the Trainee
Trainee Name	Varchar	Name of the trainee
Email	Varchar	Mail Id of the trainee
StreamId	Varchar	It should be an existing Stream Id From the table Stream
BatchId	Varchar	It should be an existing Batch Id From the table Batch

Table Name : Subject

Column Name	DataType	Description
SubjectId	Varchar	ID of the Subject
SubjectName	Varchar	Name of the Subject
StreamId	Varchar	Stream of Subject It should be an existing Stream Id From the table Stream
SubjectSeqNo	Decimal	Sequence No of Subject in Stream
Duration	Decimal	Duration of the Batch
CreditPoints	Decimal	Credit Points of Subject
Maxperceptionscr	Decimal	Maximum Perception Score of Subject
HasProject	Decimal	Has project for the Subject
MaxProjectscr	Decimal	Maximum Project Score of Subject
IsCompre	Boolean	Subject has compre or not

Table Name : Trainee Marks

Column Name	DataType	Description
TraineeId	Varchar	ID of the Trainee which is existing in the table Trainee
SubjectId	Varchar	Subject ID existing in the table Subject
MaxPerceptionScr	Decimal	Score in the Perception
MaxProjectScr	Decimal	Score in the Project

Table Name : AssignSubject

Column Name	DataType	Description
TeacherId	Varchar	ID of the Instructor
SubjectId	Varchar	Name of the Instructor

4.1.13 *Dataflow Diagrams*

Level 0 DFD

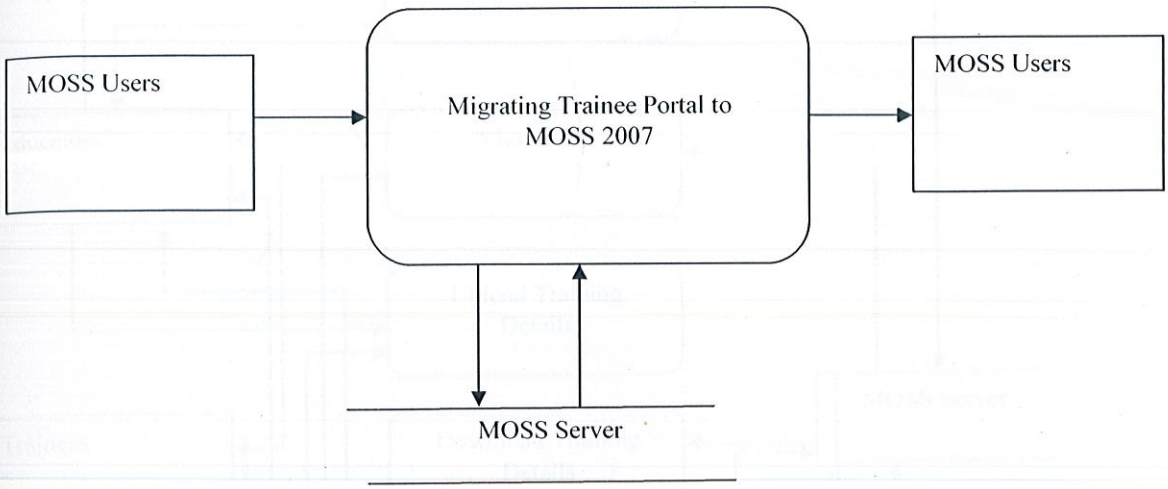

Figure 14.Level 0 DFD

Level 1 DFD

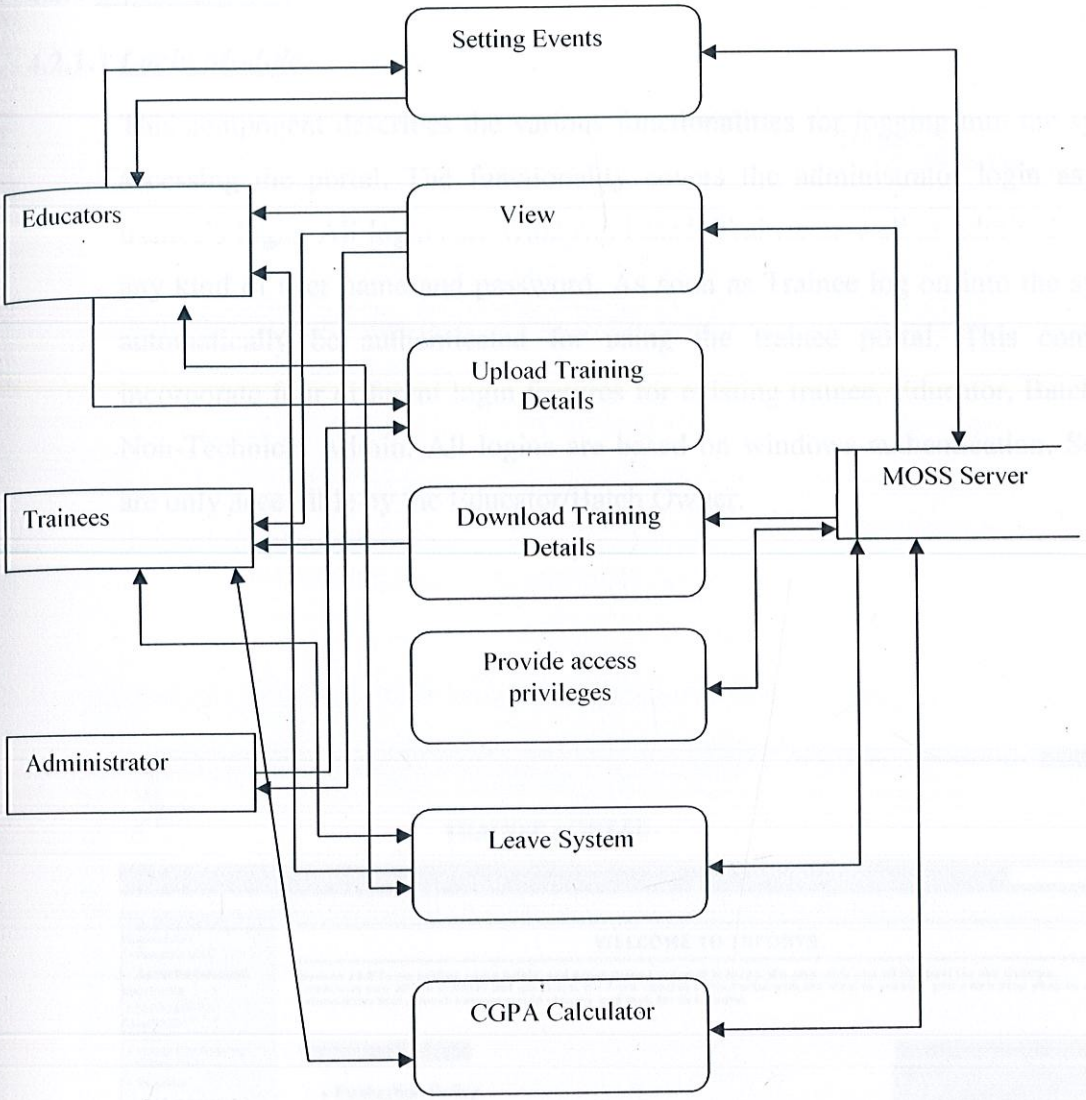

Figure 15.Level 1 DFD

4.2 DETAILED LEVEL DESIGN

4.2.1 *Module Details*

4.2.1.1 *Login Module*

This component describes the various functionalities for logging into the system before accessing the portal. The functionality covers the administrator login as well as the trainee's login. All logins are windows based. Trainee as well as admin does not require any kind of user name and password. As soon as Trainee log on into the system he/she automatically be authenticated for using the trainee portal. This component will incorporate four different login features for existing trainee, Educator, Batch Owner and Non-Technical Admin. All logins are based on windows authentication. Some features are only accessible by the Educator/Batch Owner.

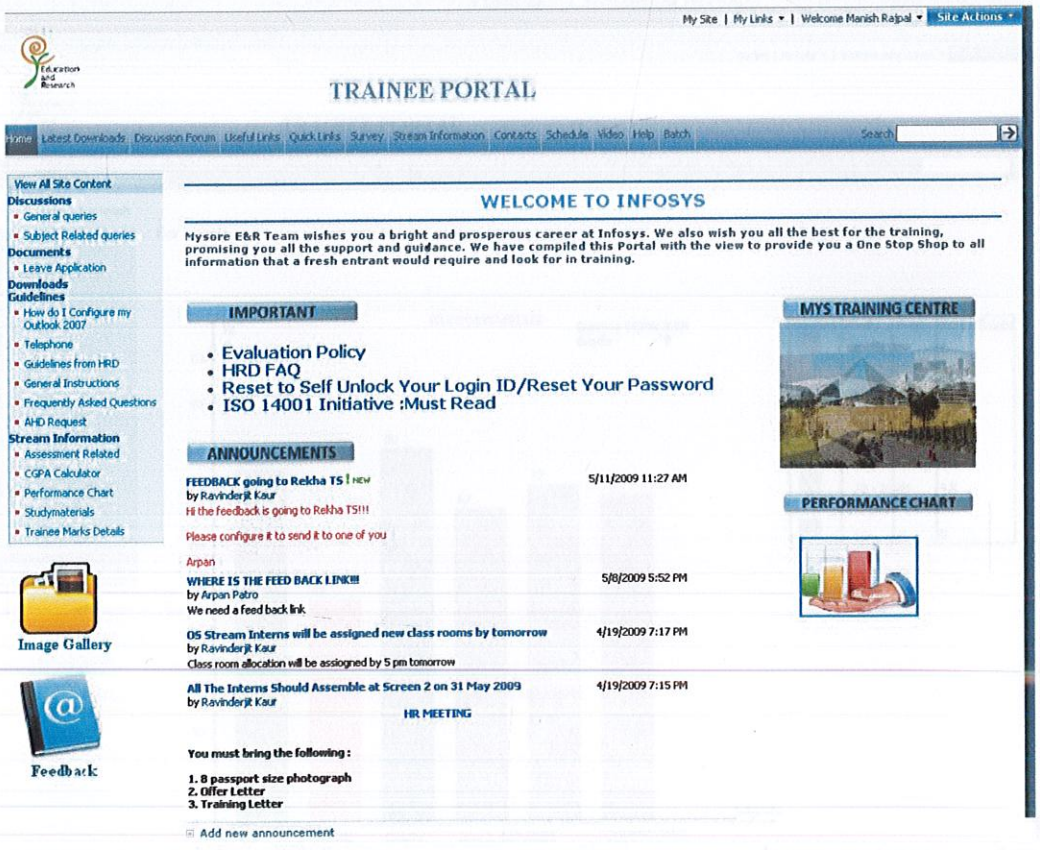

Figure 16.Screenshot of Home Page

4.2.1.2 *Trainee Performance Module*

The "Trainee Performance" component does not consist of components. This component provides the view of the performance graph to the trainee. The component involves the various steps to evaluate the performance of the trainee. It checks whether the user is trainee, it fetches the trainee marks details, calculate the grade points in different modules of the stream and using the information to display the performance graph.

"Trainee Performance" module will evaluate the performance of the trainee and depicts it graphically. The component will help the trainee to keep track of the progress of their training. The user interface of the component will be using ASP to display the pages. SQL Server 2005 will be used to retrieve, insert, delete and update the database. The Open Database Connectivity will be used to submit SQL commands for the automated part of the project such as updating the trainee's marks details, retrieving them to show the performance.

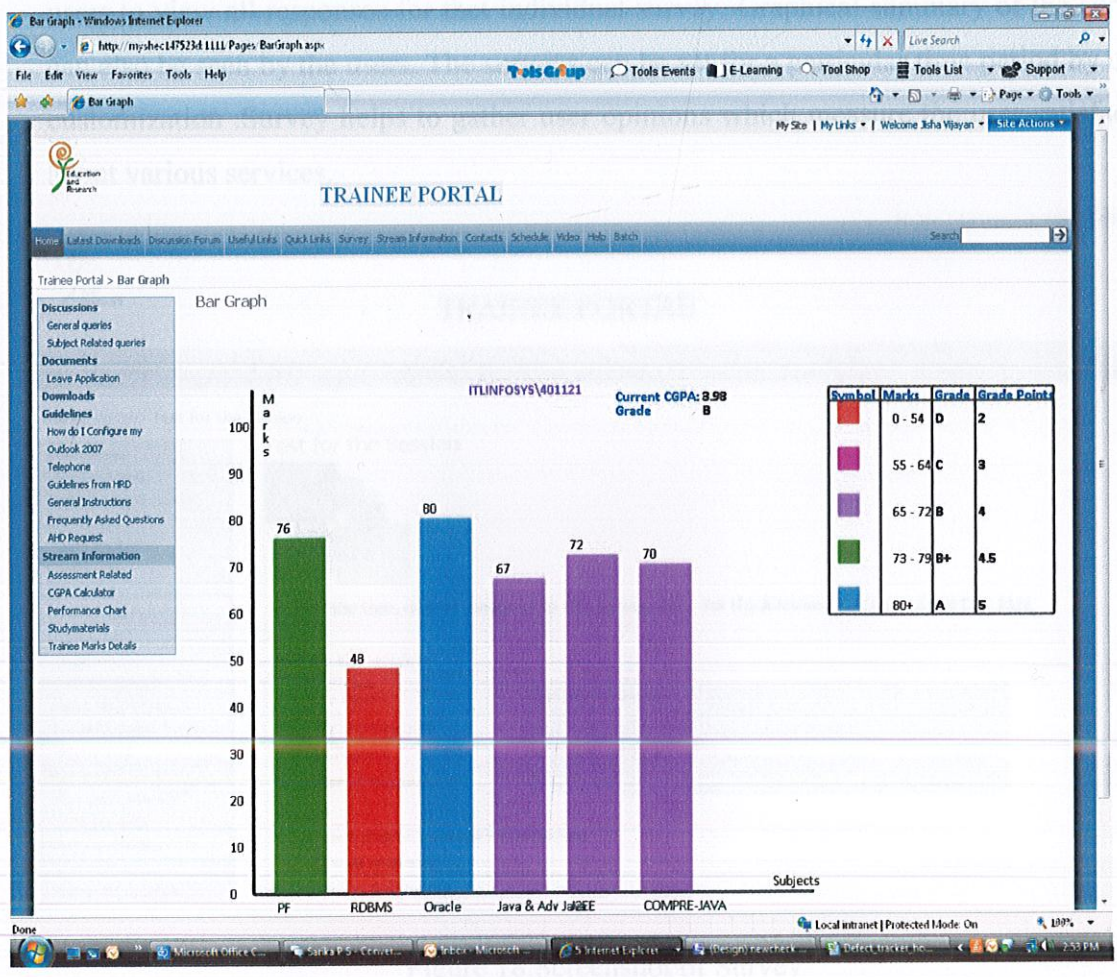

Figure 17.Screenshot of Performance Chart

4.2.1.3 *Survey/Polling Module*

The module deals with the creation of survey and polling by the users of the system.

The polling is done by the educators and trainees of the system. The polling can be used either by customization or by the inbuilt survey in MOSS. The expiration dates can be set using the data is stored in SQL server. The administrator is responsible for creating questions. The trainees and educators can respond to the survey. The component deals with creation of survey where the trainees and educators can poll answers. The module facilitates the trainees to give their polls for various questions raised by administrator. Survey can be like the feedback of educators, Services of the company etc. The responses can be to multiple-choice, numerical-rating, and yes-or-no questions, while open-ended questions are more difficult to compare. However, open-ended questions might provide information you cannot get from other types of questions. Another feature in Polling is branching which makes the survey simpler by displaying the questions that are relevant to each respondent. Questions that are not relevant are not displayed. The relevance is determined by the respondent's answer to the preceding question. It also provides the users to view all responses for that individual survey. Graphical summary of the surveys can also be seen by the users. The surveys can be set for a particular time period by using customization .Survey helps to gather user opinions which measure the user satisfaction about various services.

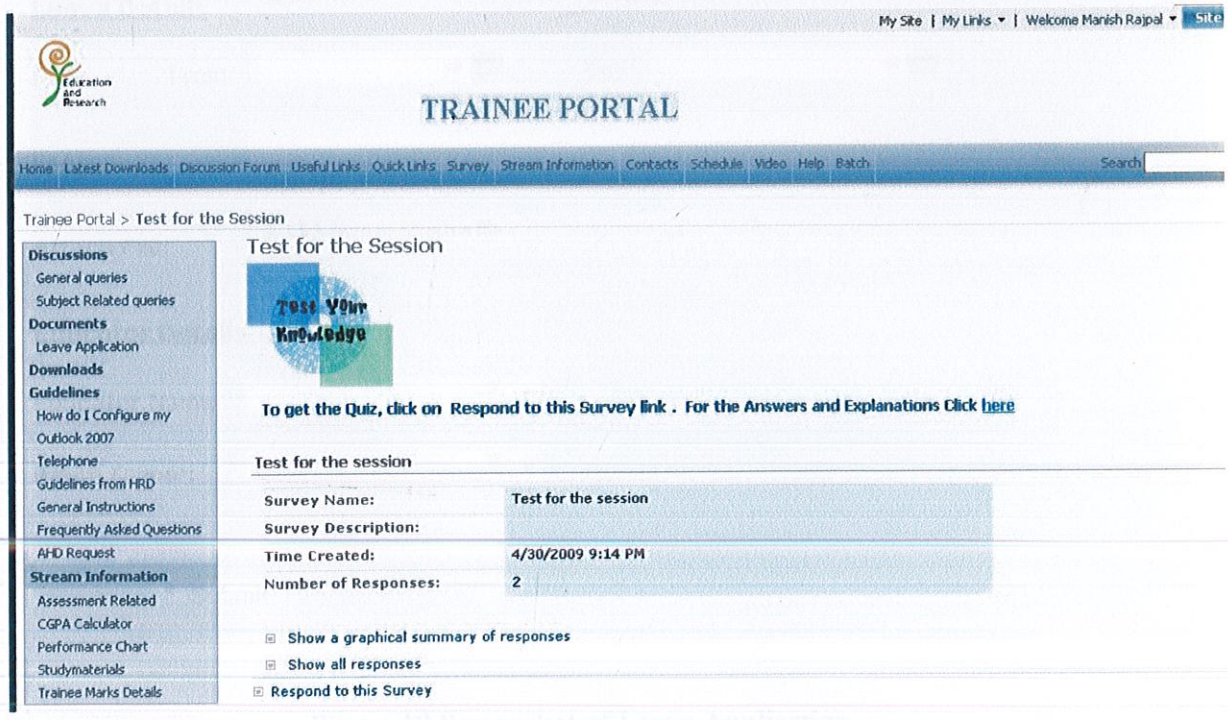

Figure 18.Screenshot of Survey

4.2.1.4 *InfoPath Forms*

The user will be shown the form based on its role. If the user is an educator, then the form meant to be filled by educators only will be displayed to the user and if user is a trainee then the form to be filled by him will be displayed only. The data will be stored for the future reference of the management. This functionality enables the user i.e. trainee and educators to fill up the details in the form available online. The form is used to gather data related to the users which are required by the management for improving the experience of the trainees undergoing training and the educators.

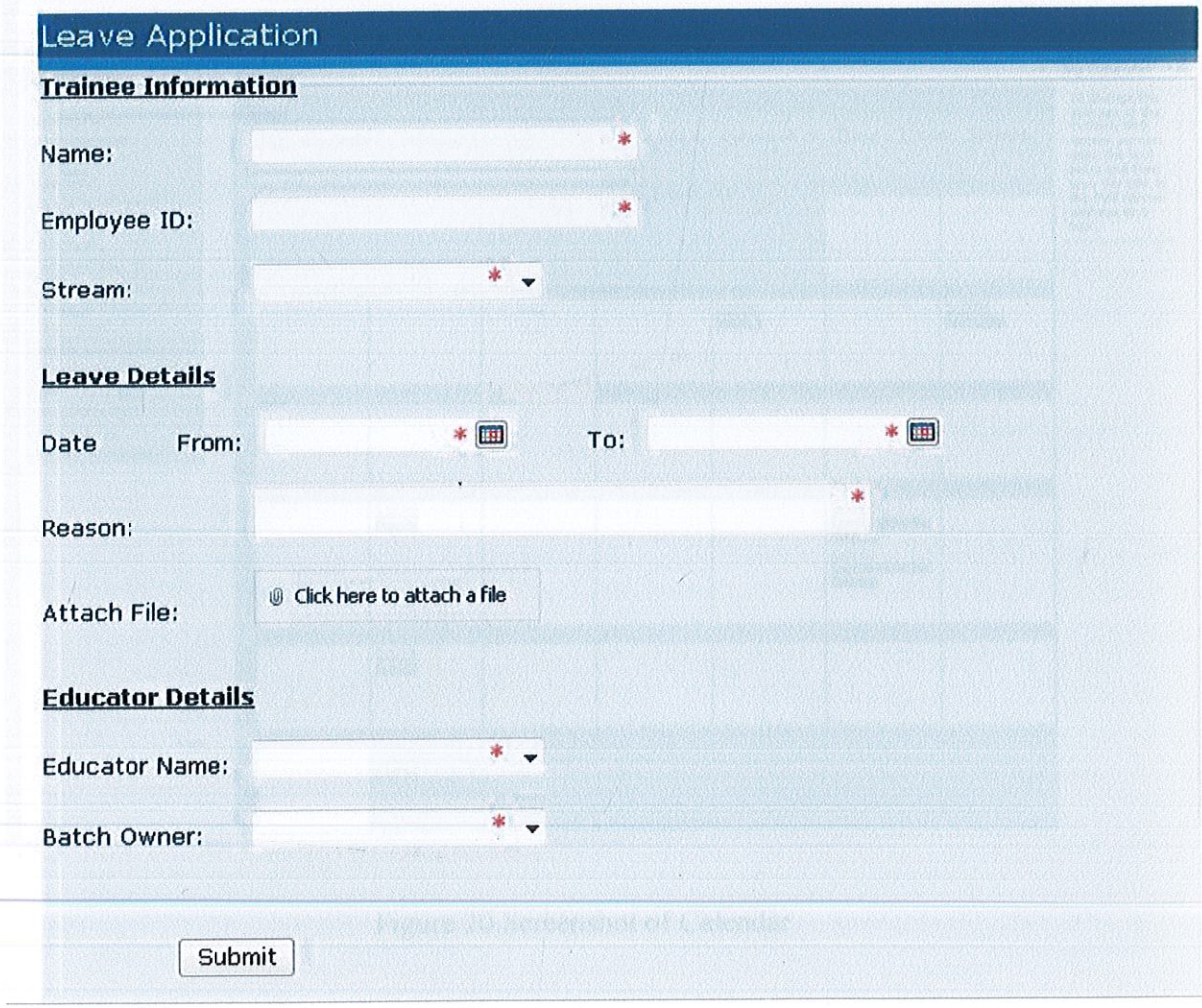

Figure 19.Screenshot of Leave Application

4.2.1.5 *Calendar*

The calendar will be displayed to the user and user selects a date. The events scheduled on that date will be displayed. This functionality enables user to select a date in calendar and view the events on that particular date. The user may also add the information about any event in the calendar. The user can also add any event or information about it.

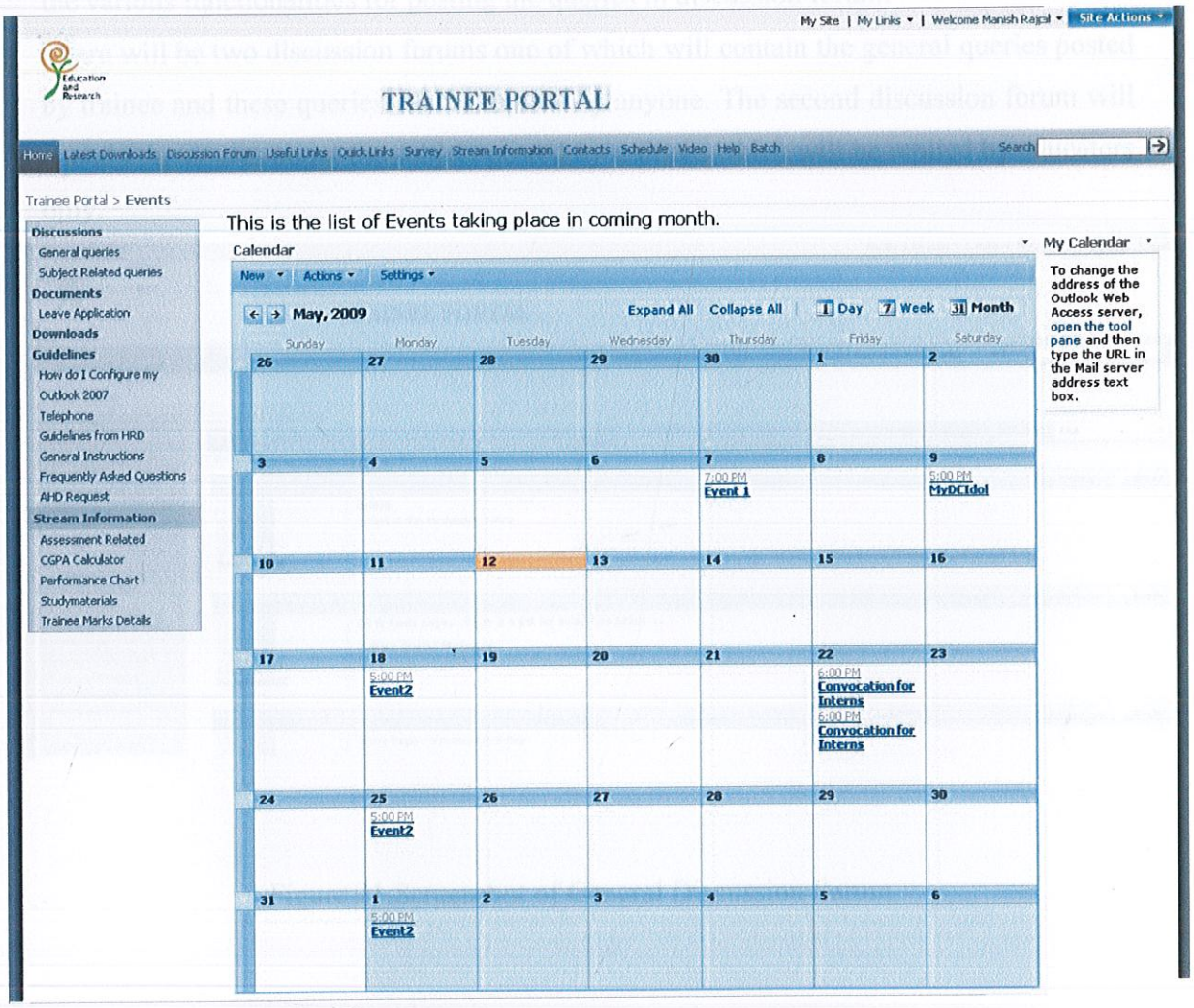

Figure 20.Screenshot of Calendar

4.2.1.6 *Discussion Forum*

This component will incorporate feature of discussion forum. Discussion forum is a new feature based on the concept of open forums where each comment or query will be visible for all the users as well as the Educator/Batch Owner. Trainees will post their doubts in the discussion forum which can be replied by trainees or batch owner/educator. Batch Owner/Educator can also place a file containing solution to common queries in the Discussion forum which could be accessed by all the trainees. This component describes the various functionalities for posting the queries in discussion forum.

There will be two discussion forums one of which will contain the general queries posted by trainee and these queries can be replied by anyone. The second discussion forum will contain the doubts about the subject posted by trainees which will be replied by educators only.

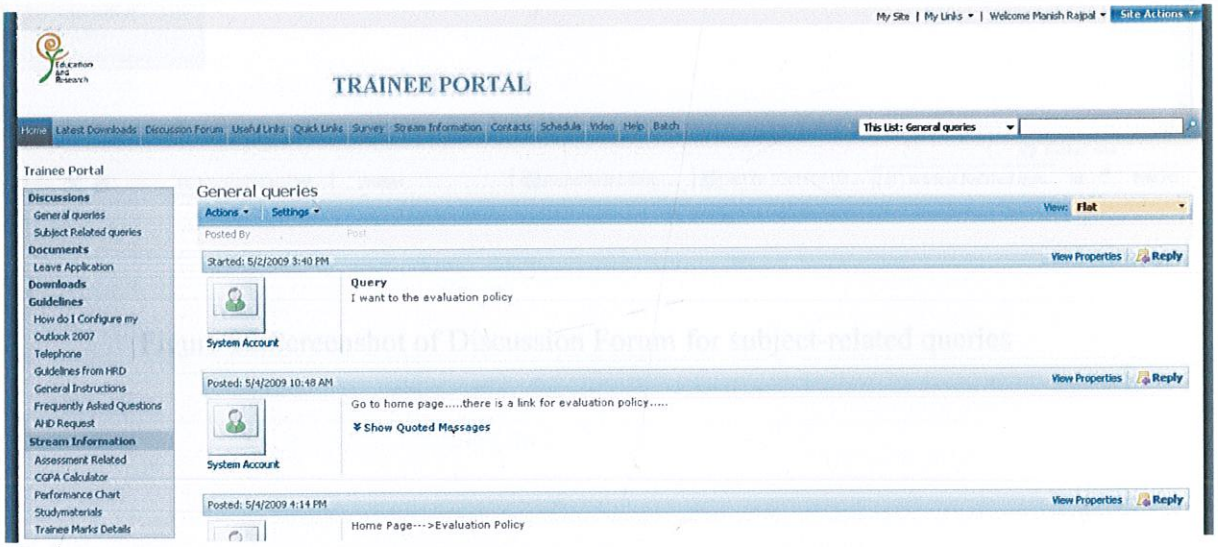

Figure 21.Screenshot of General Discussion Forum

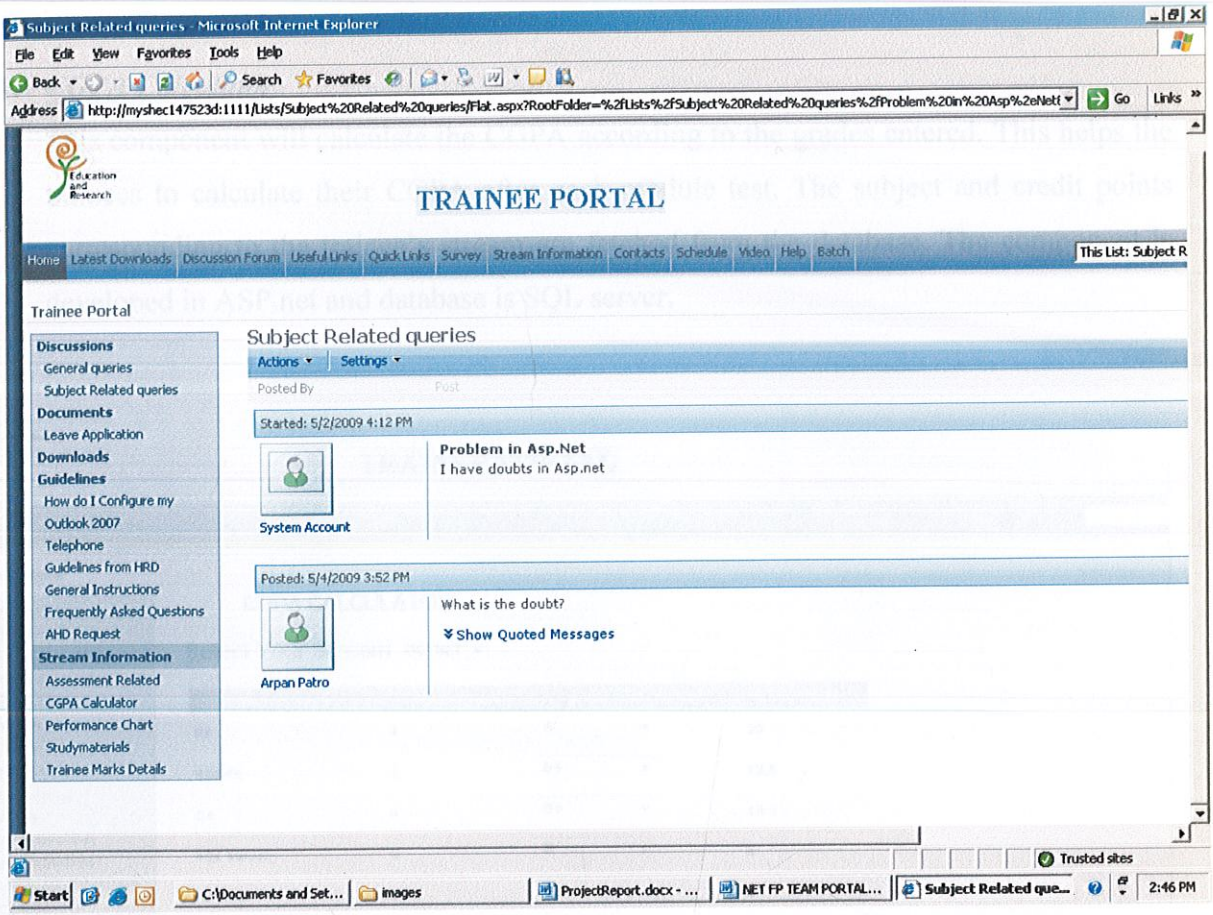

Figure 22.Screenshot of Discussion Forum for subject-related queries

4.2.1.7 *CGPA Calculator*

This component will calculate the CGPA according to the grades entered. This helps the trainees to calculate their CGPA after each module test. The subject and credit points corresponding to the trainee's stream are fetched from the database. The component is developed in ASP.net and database is SQL server.

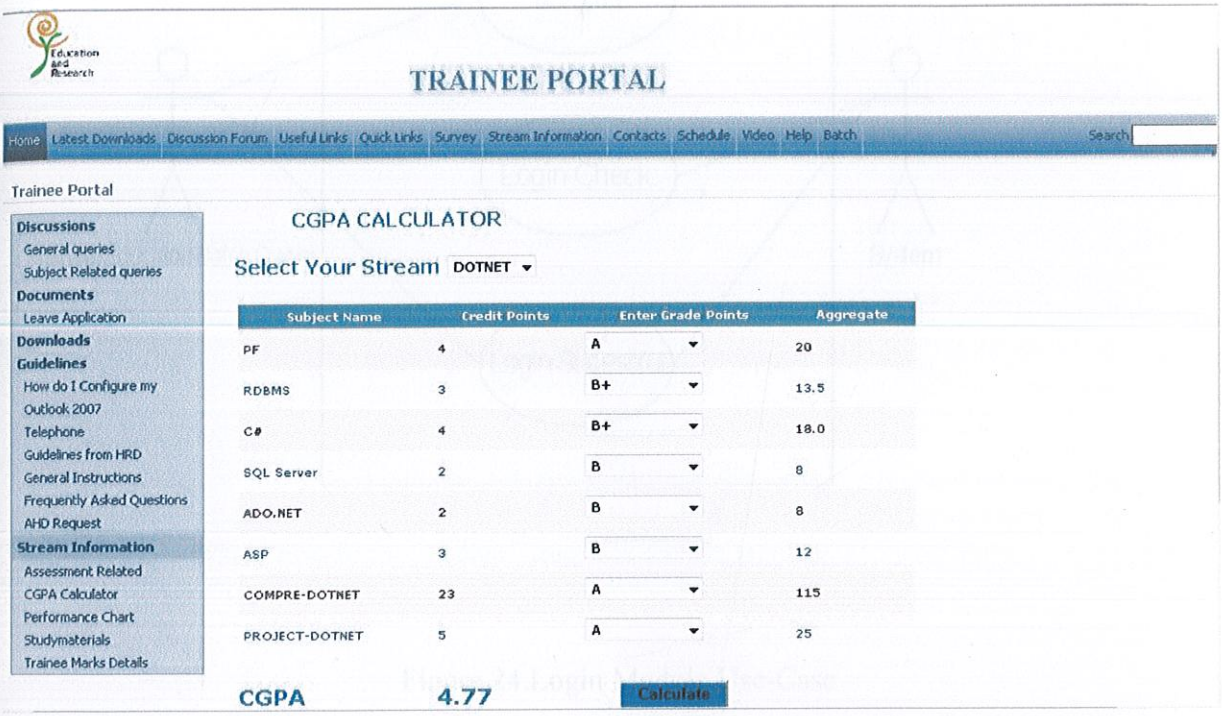

Figure 23.Screenshot of CGPA calculator

4.2.2 *Use-Case Diagrams*

Login Module

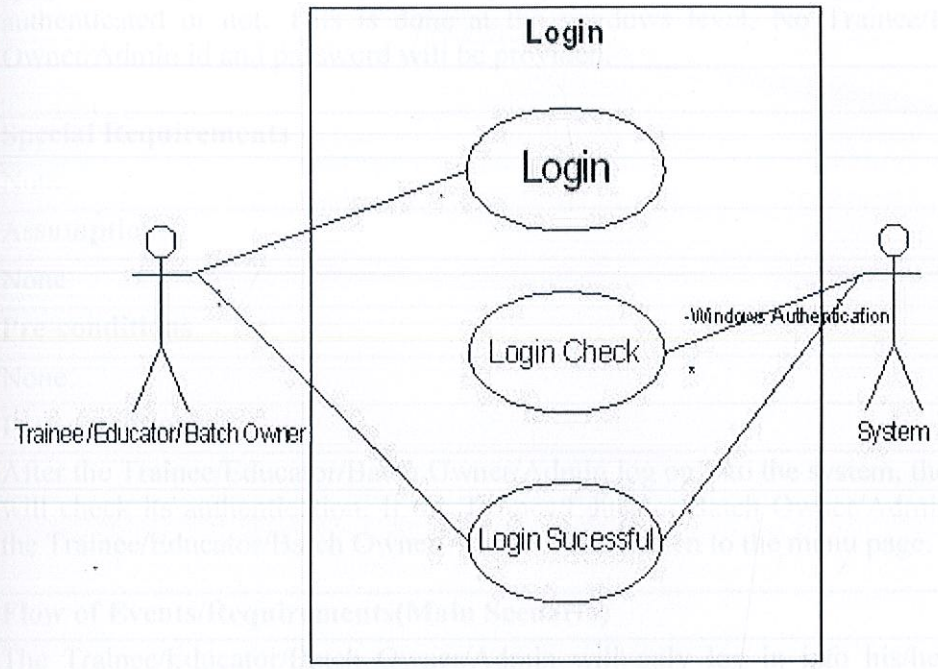

Figure 24.Login Module Use-Case

USE CASE Details: Login Module

Description (Trainee/Educator/Batch Owner/Admin Login)
This use case describes the existing Trainee/Educator/Batch Owner/Admin login into the system. The system will check whether the Trainee/Educator/Batch Owner/Admin is authenticated or not. This is done at the windows level. No Trainee/Educator/Batch Owner/Admin id and password will be provided.
Special Requirements
None
Assumptions
None
Pre-conditions
None
Post-conditions
After the Trainee/Educator/Batch Owner/Admin log on into the system, the trainee portal will check its authentication. If the Trainee/Educator/Batch Owner/Admin is valid then the Trainee/Educator/Batch Owner/Admin will be taken to the menu page.
Flow of Events/Requirements(Main Scenario)
The Trainee/Educator/Batch Owner/Admin will only log in into his/her system. The system will check the authentication of the Trainee/Educator/Batch Owner/Admin and take the Trainee/Educator/Batch Owner/Admin to the Trainee Portal Menu Page.

Trainee Performance Module

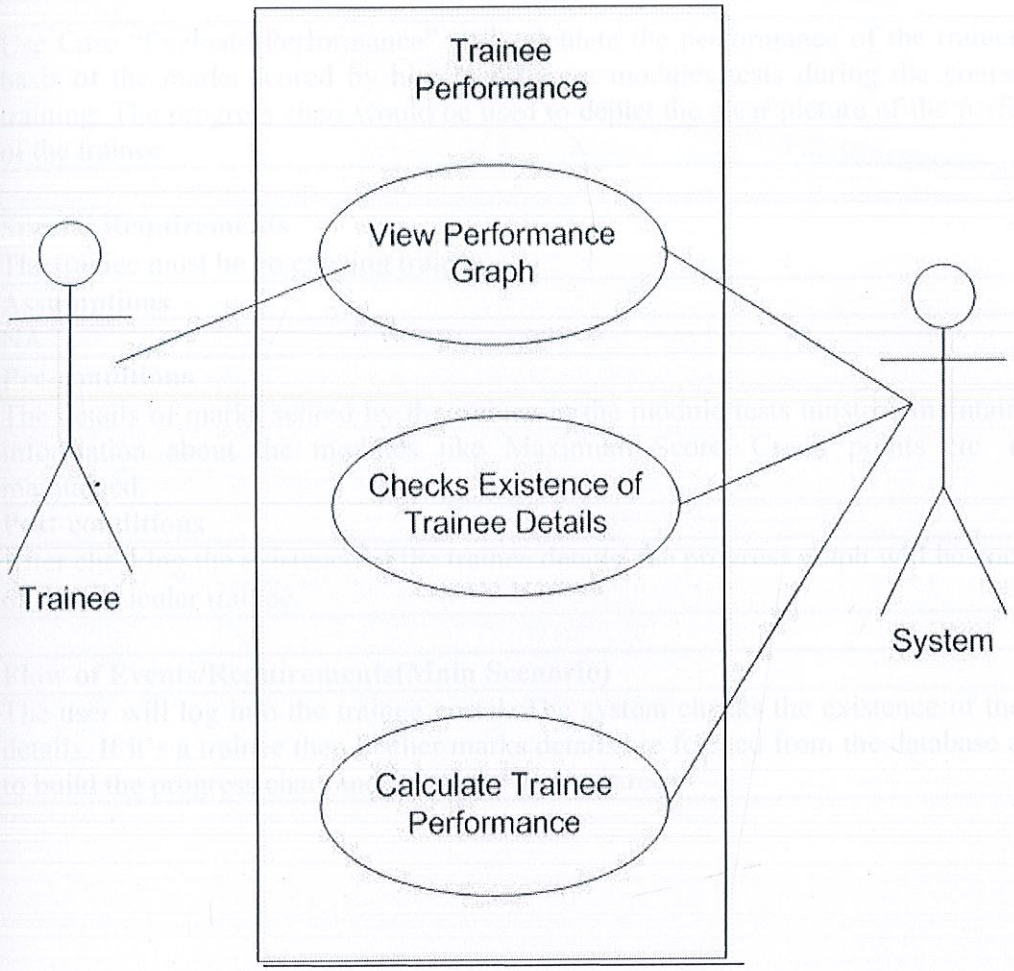

Figure 25.Trainee Performance module Use-Case

USE CASE Details: Trainee Performance Module

Description
Use Case "Evaluate Performance" will calculate the performance of the trainee on the basis of the marks scored by him in different modules tests during the course of the training .The progress chart would be used to depict the clear picture of the performance of the trainee.

Special Requirements
The trainee must be an existing trainee.
Assumptions
NA
Pre-conditions
The details of marks scored by the trainee in the module tests must be maintained. The information about the modules like Maximum Score, Credit points etc. must be maintained.
Post-conditions
After checking the existence of the trainee details, the progress graph will be constructed of the particular trainee.

Flow of Events/Requirements(Main Scenario)
The user will log into the trainee portal. The system checks the existence of the trainee details. If it's a trainee then his/her marks details are fetched from the database and used to build the progress chart and displayed on the screen.

Survey/Polling Module

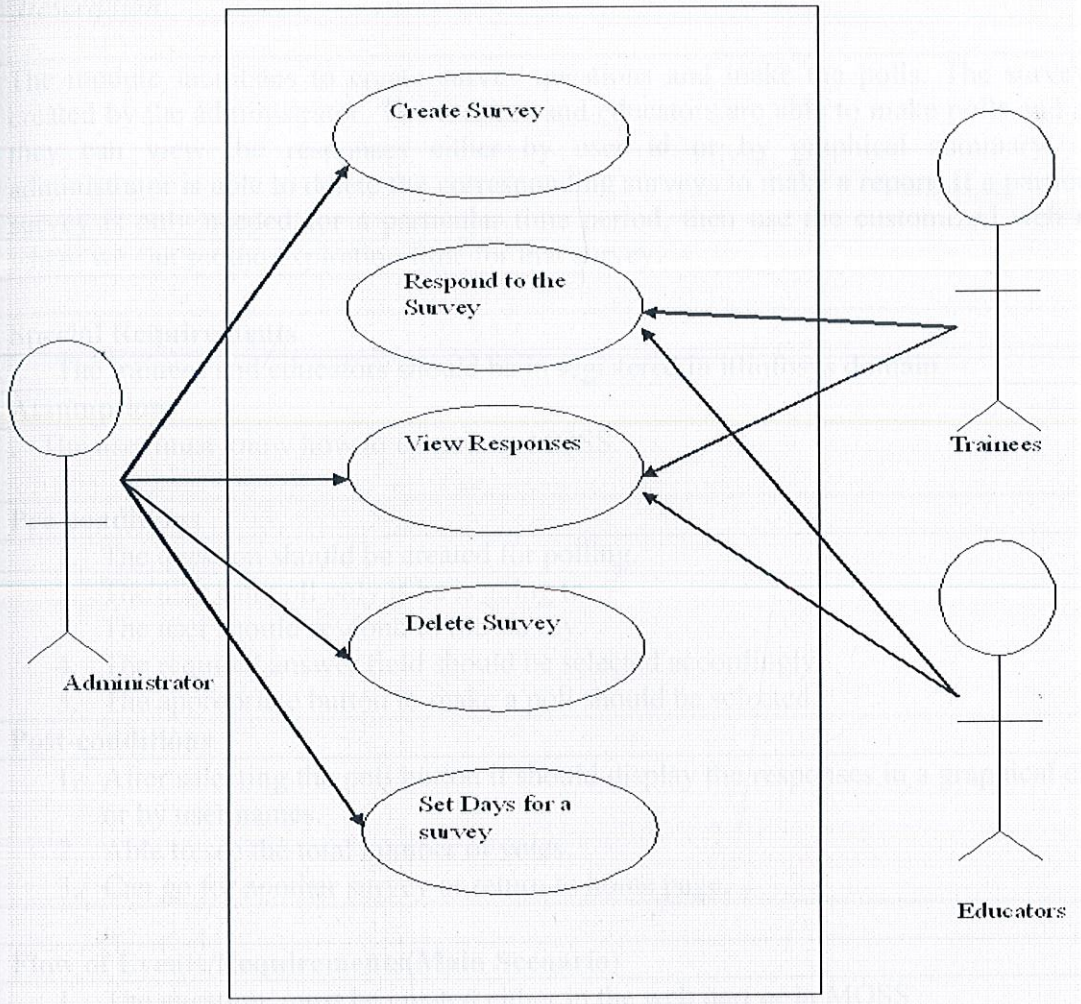

Figure 26.Survey module Use-Case

USE CASE DETAILS: Survey/Polling Module

Description
The module facilitates to create survey questions and make the polls. The survey is created by the administrator. The trainees and educators are able to make polls and also they can view the responses either by user id or by graphical summary. The administrator is able to delete the corresponding surveys to make a report. If a particular survey is only needed for a particular time period, then use the customized web part where we can set the expiration time for that survey.

Special Requirements
The trainees and educators should be in registered in itlinfosys domain.
Assumptions
. The user must know how to operate in MOSS.
Pre-conditions
1. The question should be created for polling. 2. The user can poll only if he is going to 3. The user should respond to the survey. 4. The required answer field should be selected accordingly. 5. The appropriate button to make a poll should be selected.
Post-conditions
1. After selecting the poll button it should display the responses in a graphical chart or by user names. 2. Able to see the total number of votes. 3. Can go for another survey or return to home page.

Flow of Events/Requirements(Main Scenario)
1. The question must be created either in the web part or in MOSS

Infopath Module

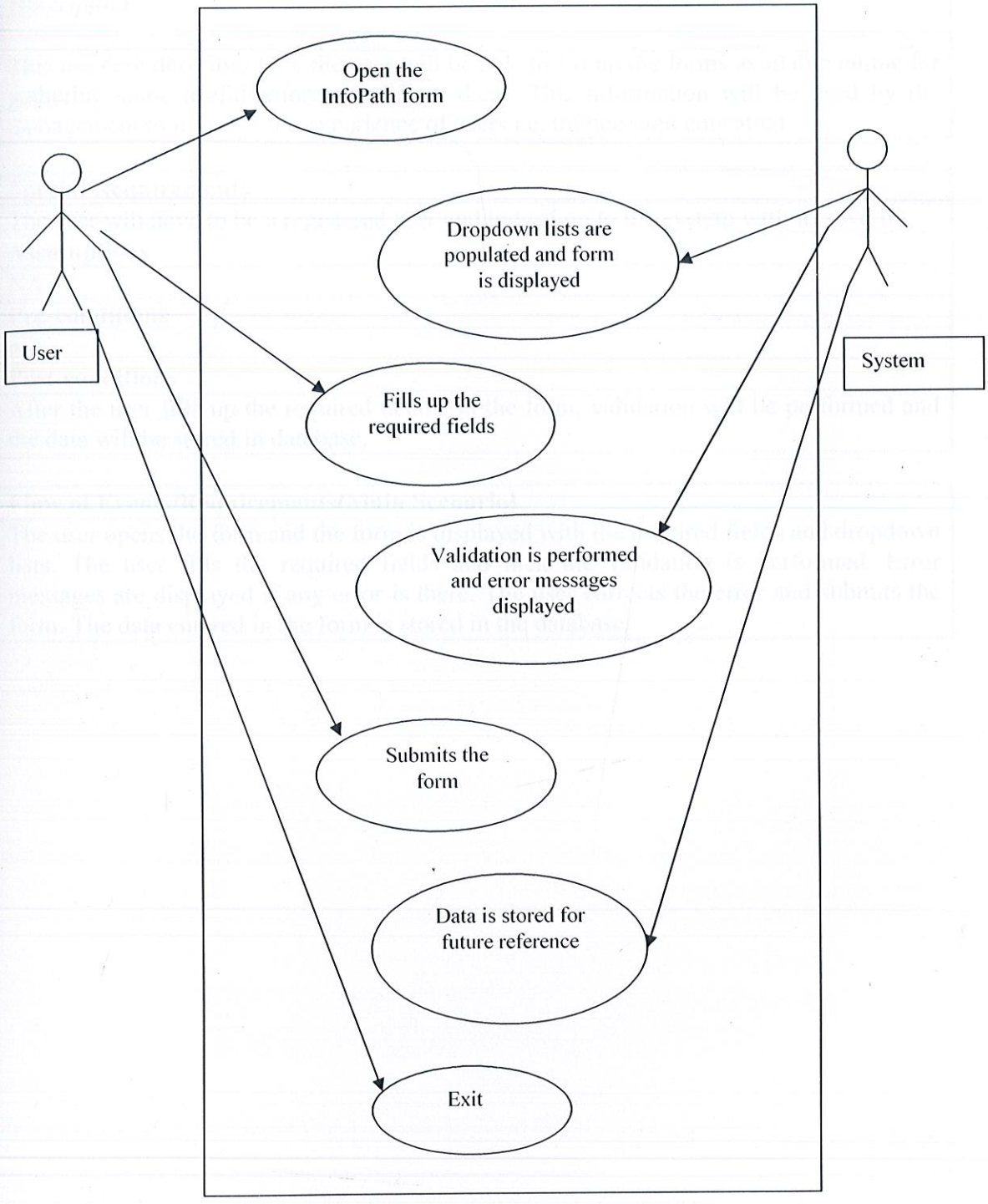

Figure 27.Infopath Module Use-Case

USE CASE DETAILS: Info Paths Module

Description
This use case describes how the user will be able to fill up the forms available online for gathering some useful information from them. This information will be used by the management to improve the experience of users i.e. trainees and educators.

Special Requirements
The user will have to be a registered user and logged on to the system with its own ID
Assumptions
NA
Pre-conditions
NA
Post-conditions
After the user fills up the required details in the form, validation will be performed and the data will be stored in database.

Flow of Events/Requirements(Main Scenario)
The user opens the form and the form is displayed with the required fields and dropdown lists. The user fills the required fields and then the validation is performed. Error messages are displayed if any error is there. The user corrects the error and submits the form. The data entered in the form is stored in the database.

Calendar Module

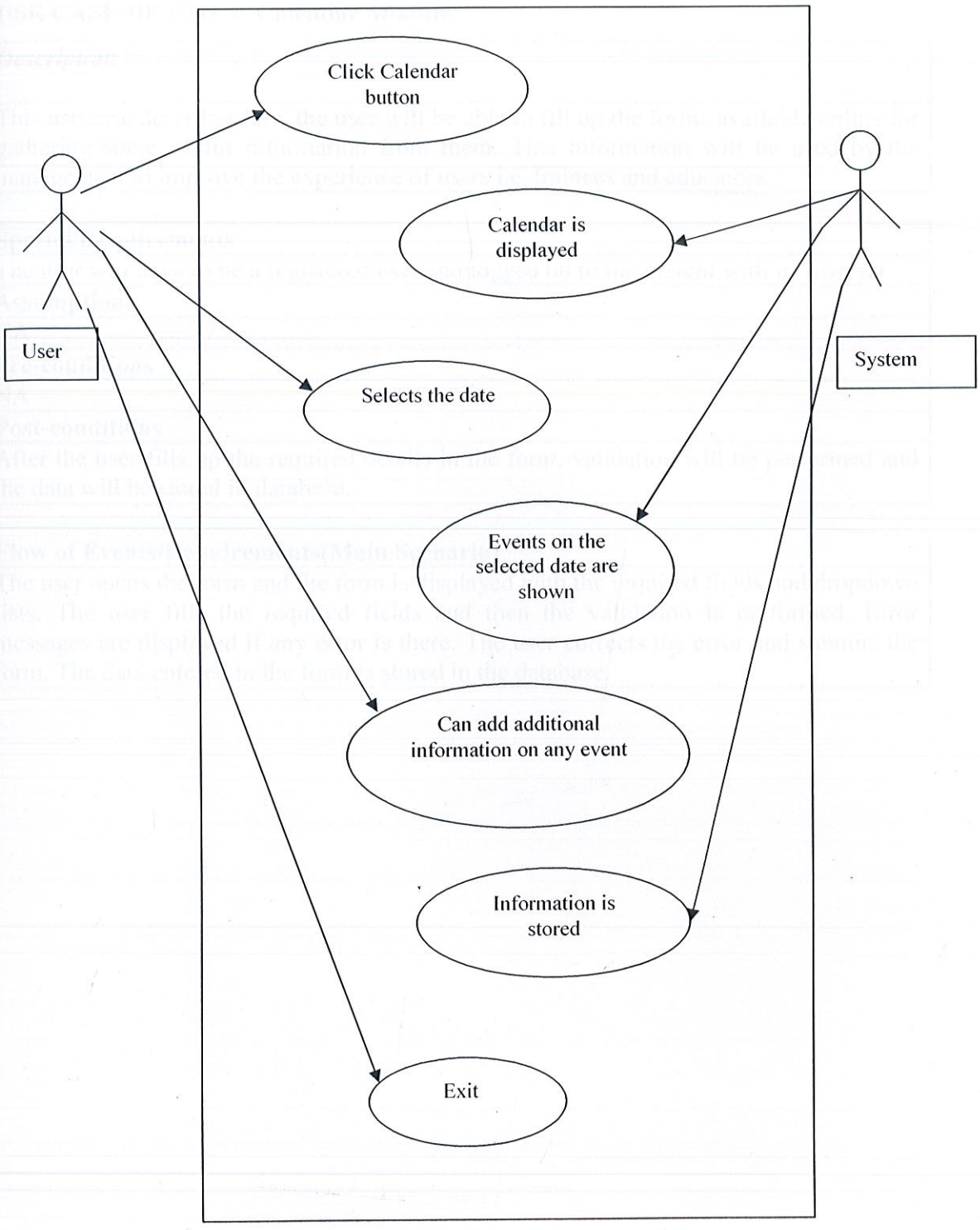

Figure 28.Calendar module Use-Case

USE CASE DETAILS: Calendar Module

Description
This use case describes how the user will be able to fill up the forms available online for gathering some useful information from them. This information will be used by the management to improve the experience of users i.e. trainees and educators.

Special Requirements
The user will have to be a registered user and logged on to the system with its own ID
Assumptions
NA
Pre-conditions
NA
Post-conditions
After the user fills up the required details in the form, validation will be performed and the data will be stored in database.

Flow of Events/Requirements(Main Scenario)
The user opens the form and the form is displayed with the required fields and dropdown lists. The user fills the required fields and then the validation is performed. Error messages are displayed if any error is there. The user corrects the error and submits the form. The data entered in the form is stored in the database.

Discussion Forum Module

Trainee-Trainee/Educator/Batch Owner

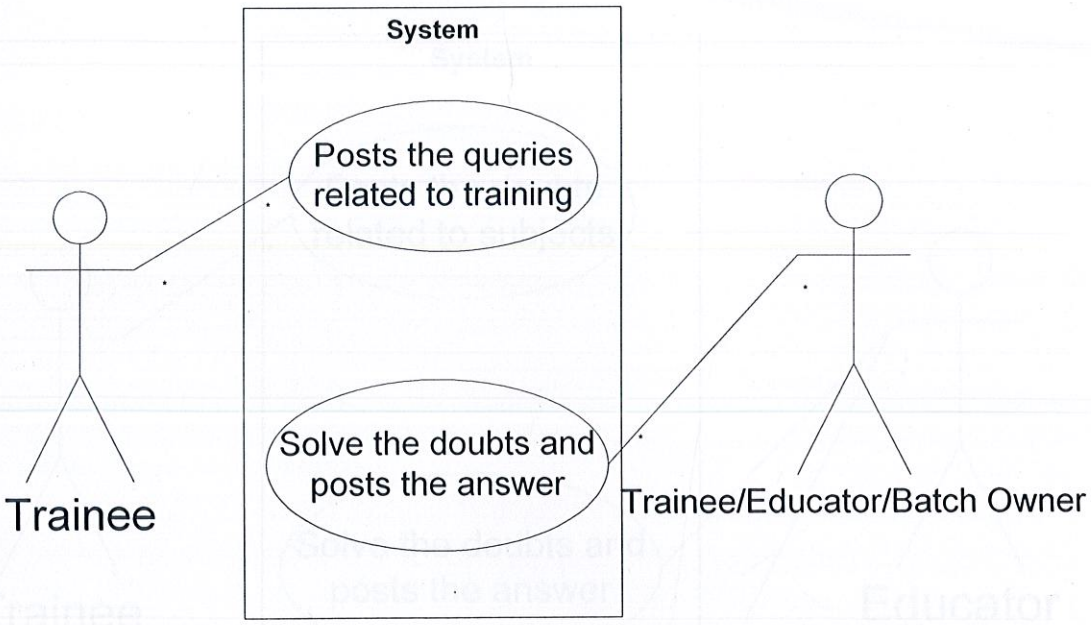

Figure 29.Discussion Forum module Use-Case(General queries)

Trainee-Educator

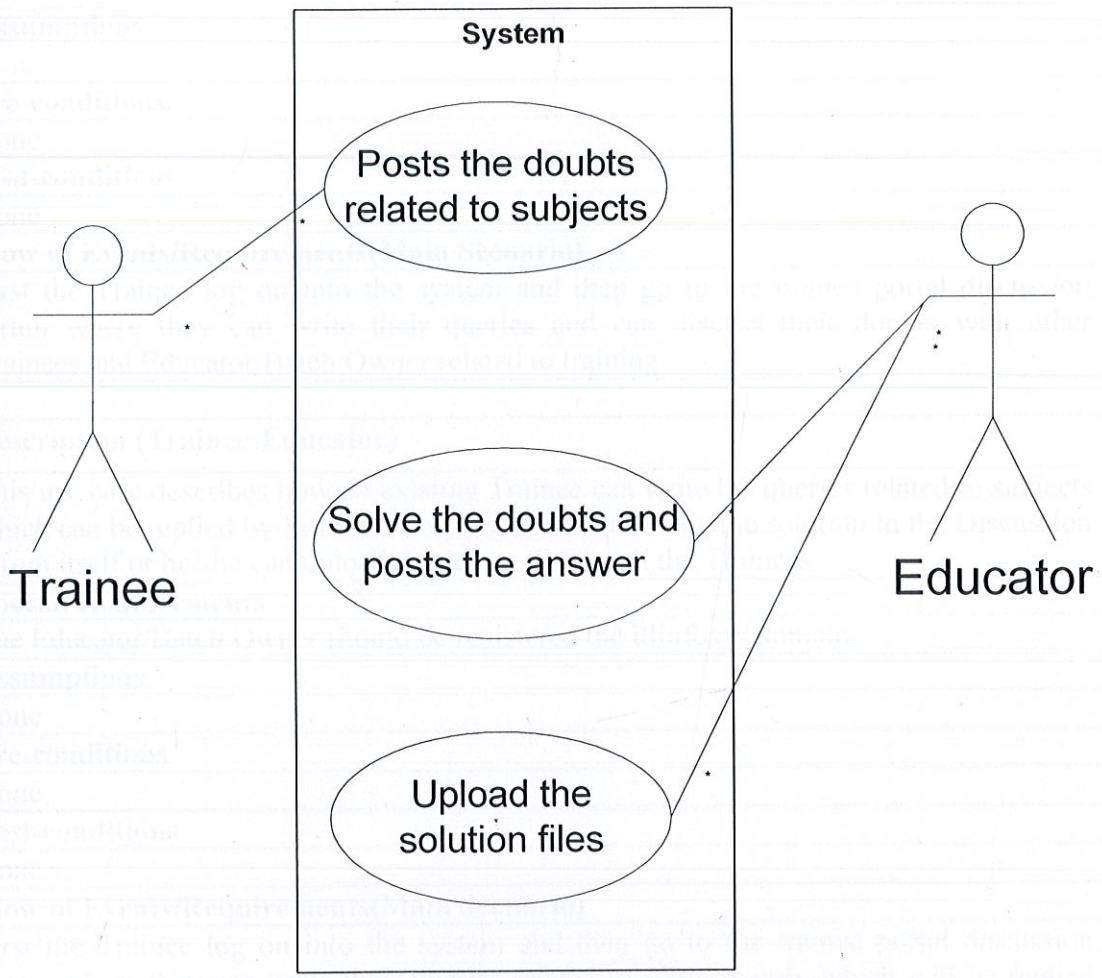

Figure 30.Discussion Forum module Use-Case(Subject Related queries)

USE CASE Details: Discussion Forum Module

Description (Trainee-Trainee/Educator/Batch Owner)
This use case describes how an existing Trainee can write his queries related to training which can be replied by Trainee/Educator/Batch Owner.
Special Requirements
The Trainee should be registered the itlinfosys domain.
Assumptions
None
Pre-conditions
None
Post-conditions
None
Flow of Events/Requirements(Main Scenario)
First the Trainee log on into the system and then go to the trainee portal discussion forum where they can write their queries and can discuss their doubts with other Trainees and Educator/Batch Owner related to training.

Description (Trainee-Educator)
This use case describes how an existing Trainee can write his queries related to subjects which can be replied by Educator only. Educator can write the solution in the Discussion forum itself or he/she can upload a solution file for all the Trainees.
Special Requirements
The Educator/Batch Owner should be registered the itlinfosys domain.
Assumptions
None
Pre-conditions
None
Post-conditions
None
Flow of Events/Requirements(Main Scenario)
First the Trainee log on into the system and then go to the trainee portal discussion forum where they can write their queries related to subjects only which will be replied by educator only.

4.2.2 Activity Diagrams

Login Module

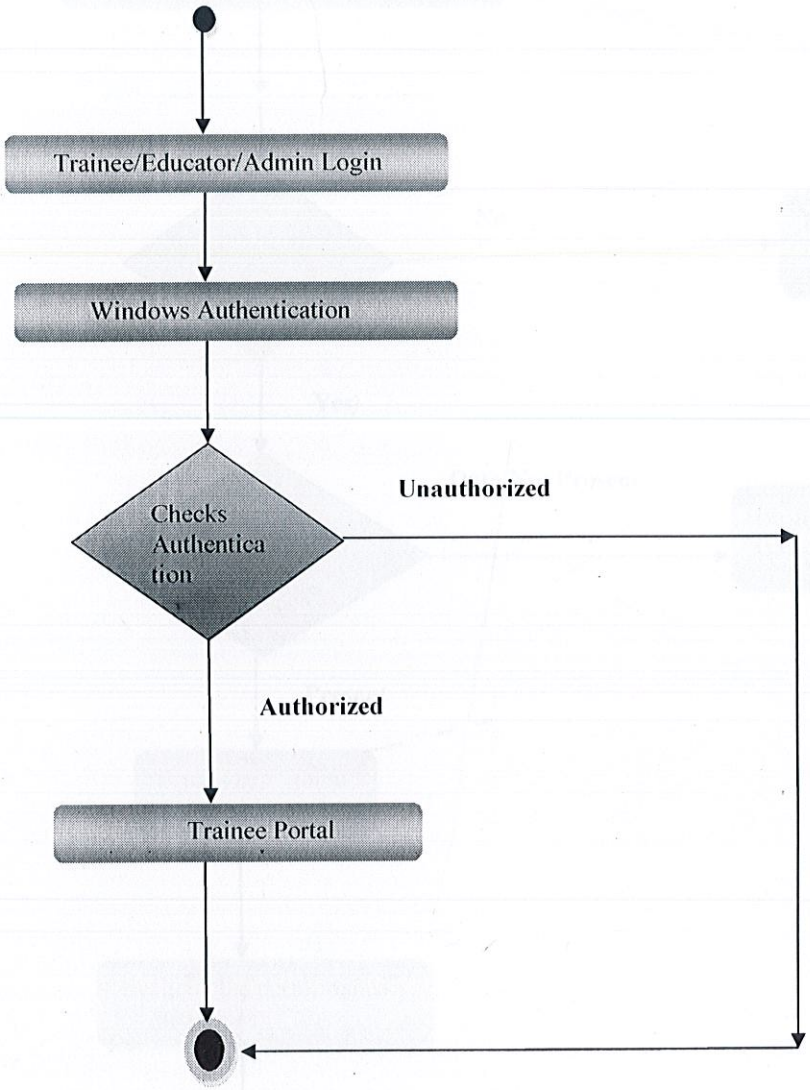

Figure 31.Login module Activity Diagram

Trainee Performance Module

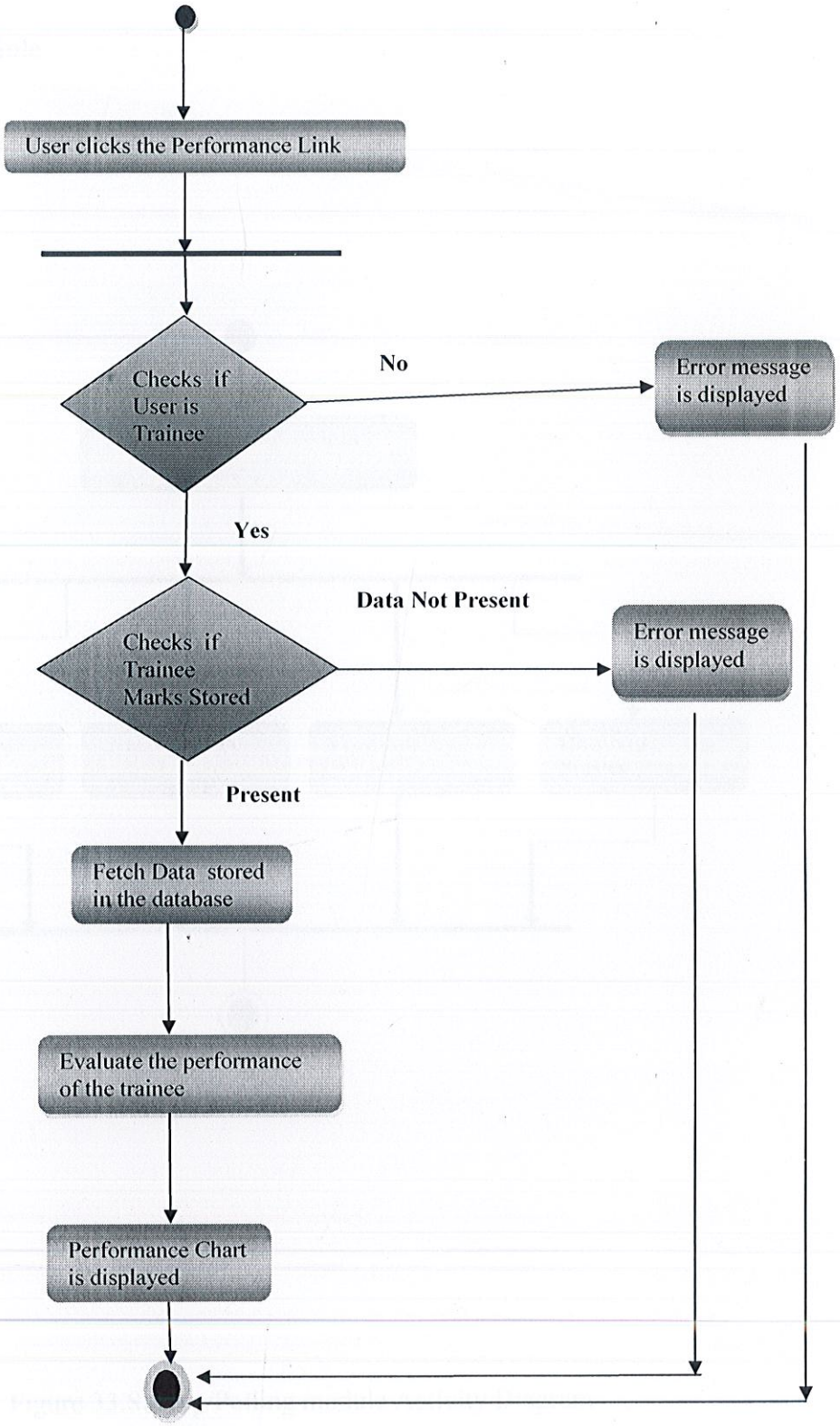

Figure 32.Trainee Performance module Activity Diagram

Survey/Polling Module

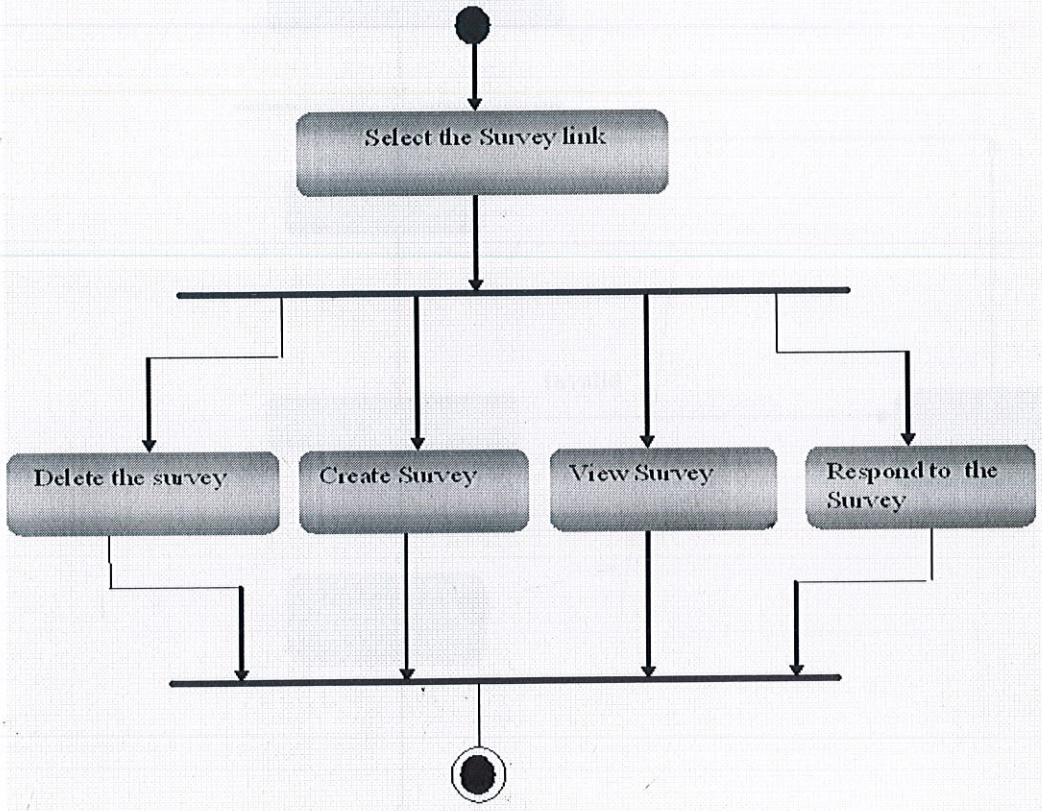

Figure 33.Survey/Polling module Activity Diagram

Info Path Forms Module

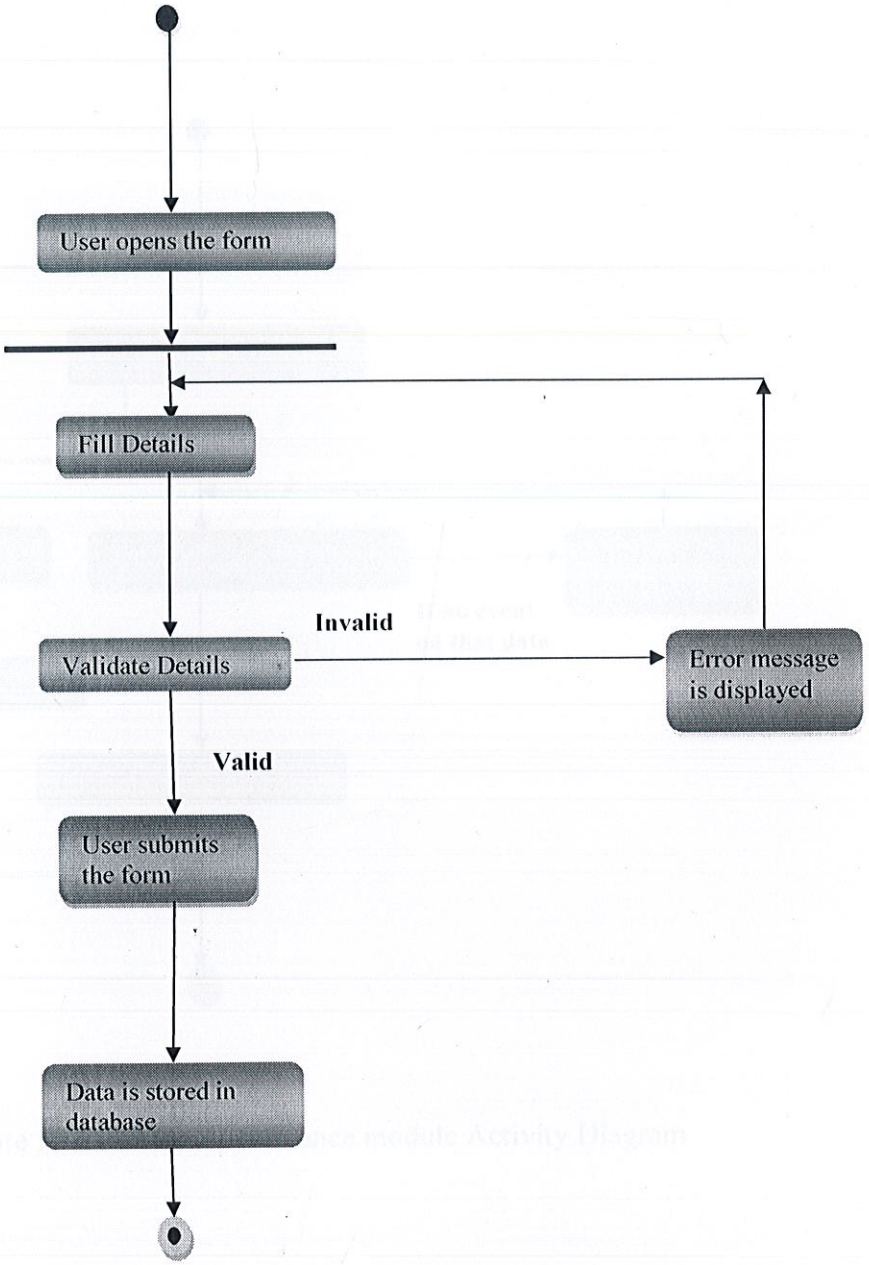

Figure 34.InfoPath Form module Activity Diagram

Calendar Module

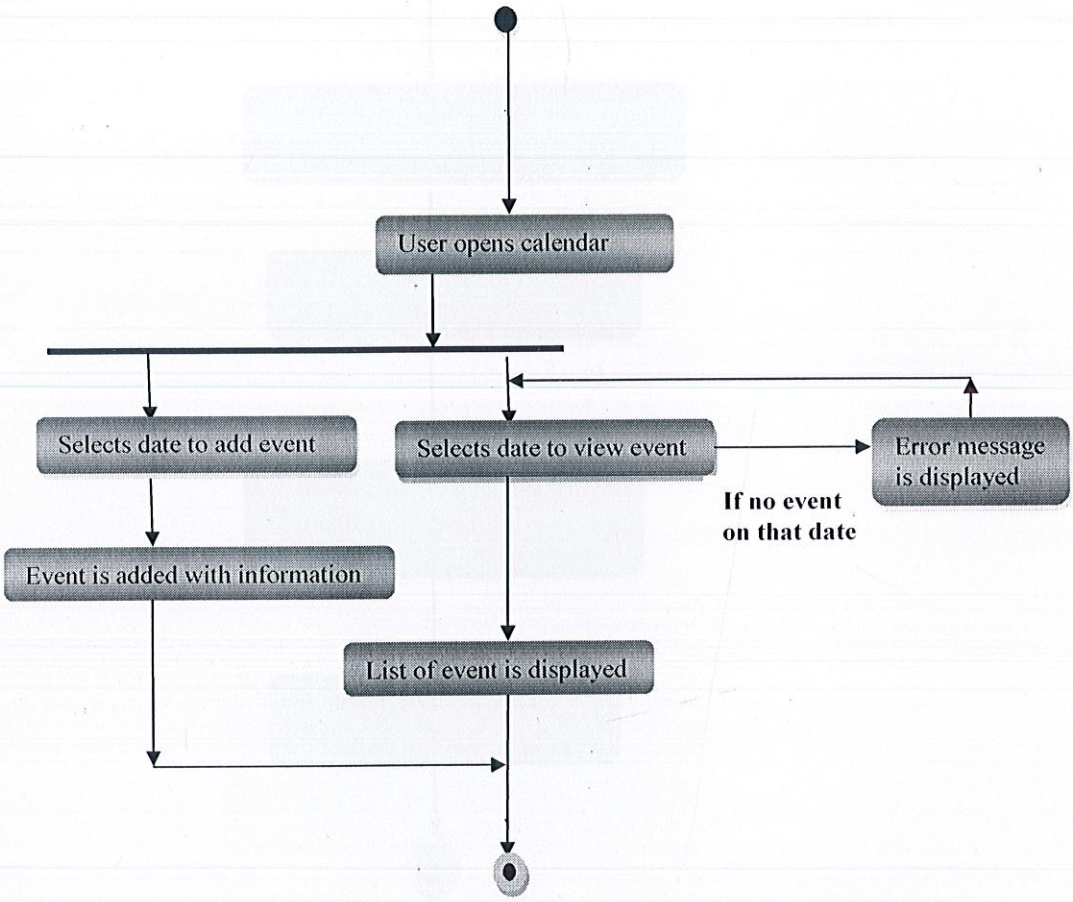

Figure 35.Calendar Performance module Activity Diagram

Discussion Forum Module

Trainee-Trainee/Educator/Batch Owner

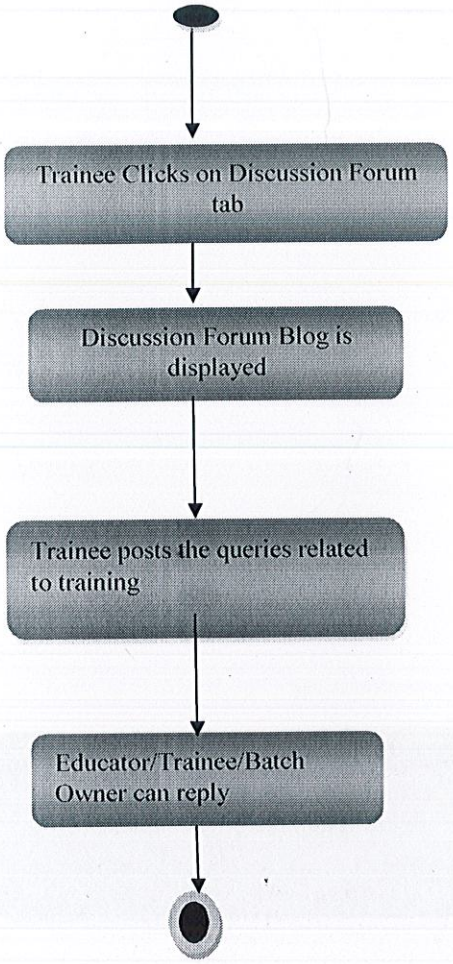

Figure 36.Discussion Forum module Activity Diagram

Trainee-Educator

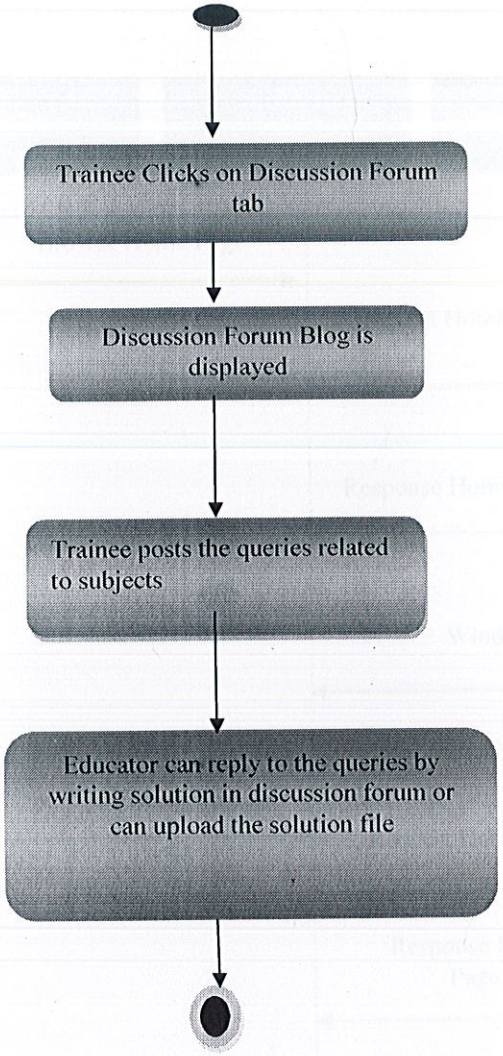

Figure 37.Discussion Forum module Activity Diagram

4.2.4 Sequence Diagrams

Login Module

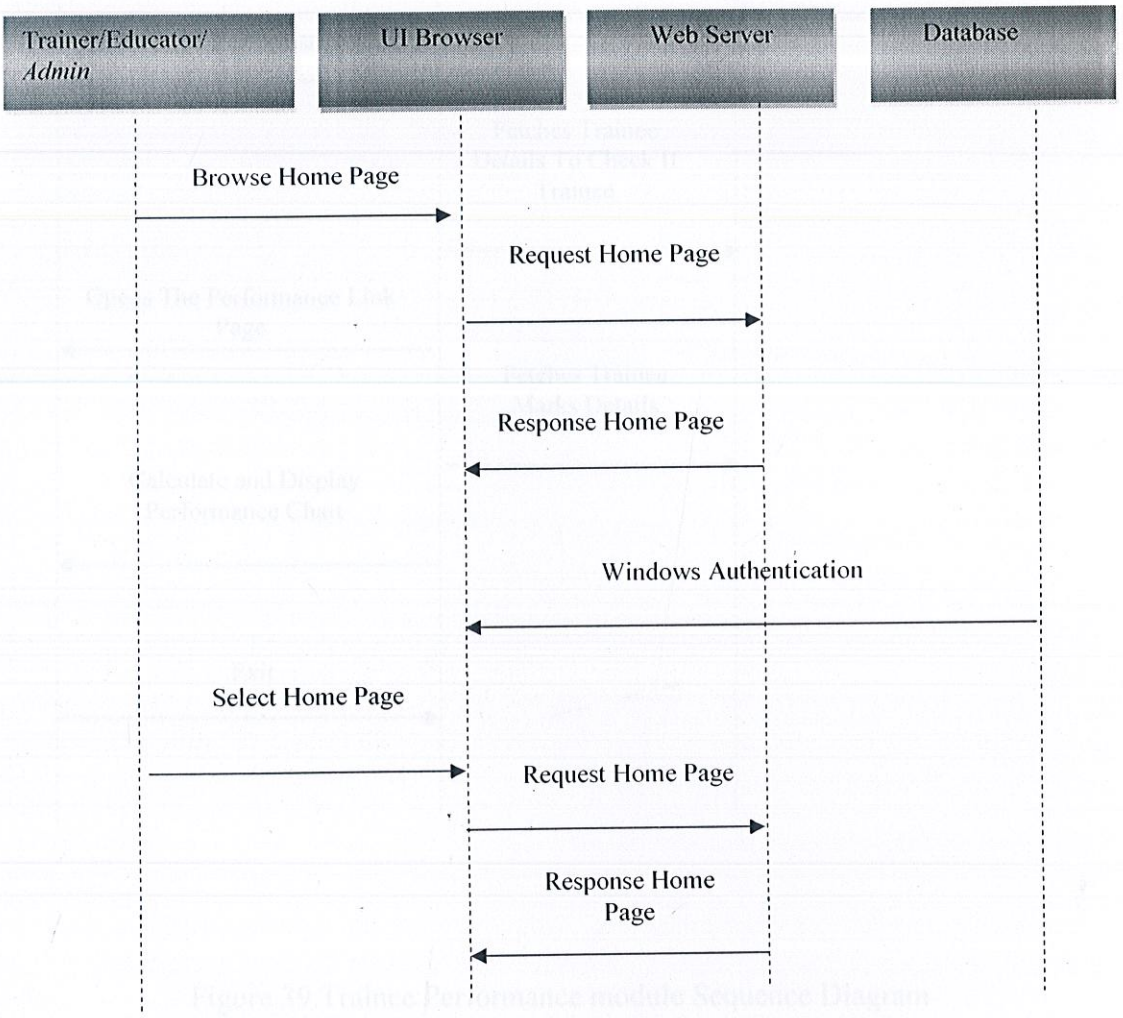

Figure 38.Login module Sequence Diagram

Trainee Performance Module

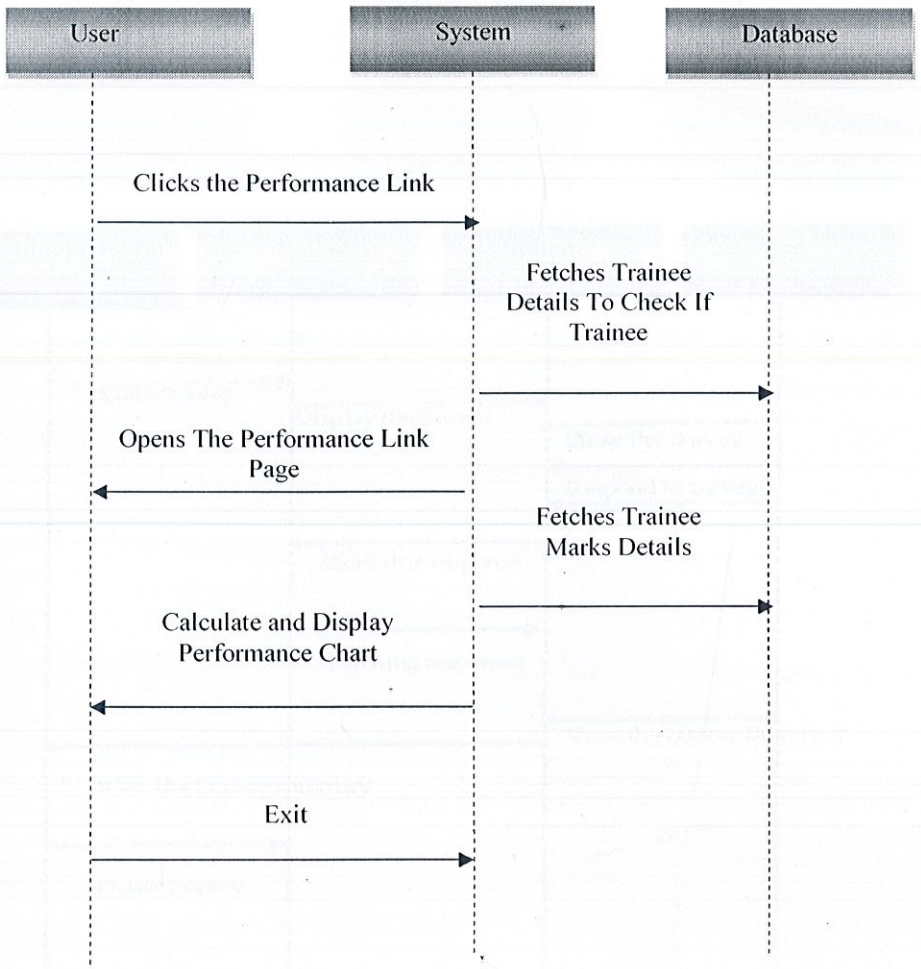

Figure 39.Trainee Performance module Sequence Diagram

Survey/Polling Module

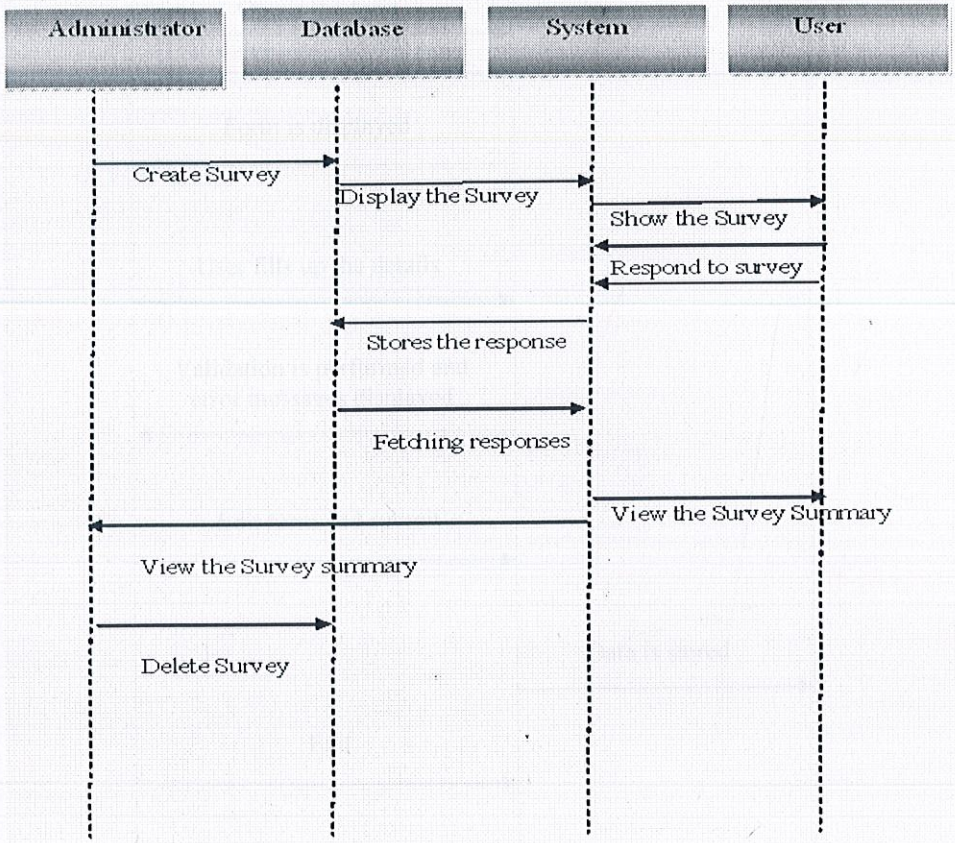

Figure 40.Survey/Polling module Sequence Diagram

Info Path Forms Module

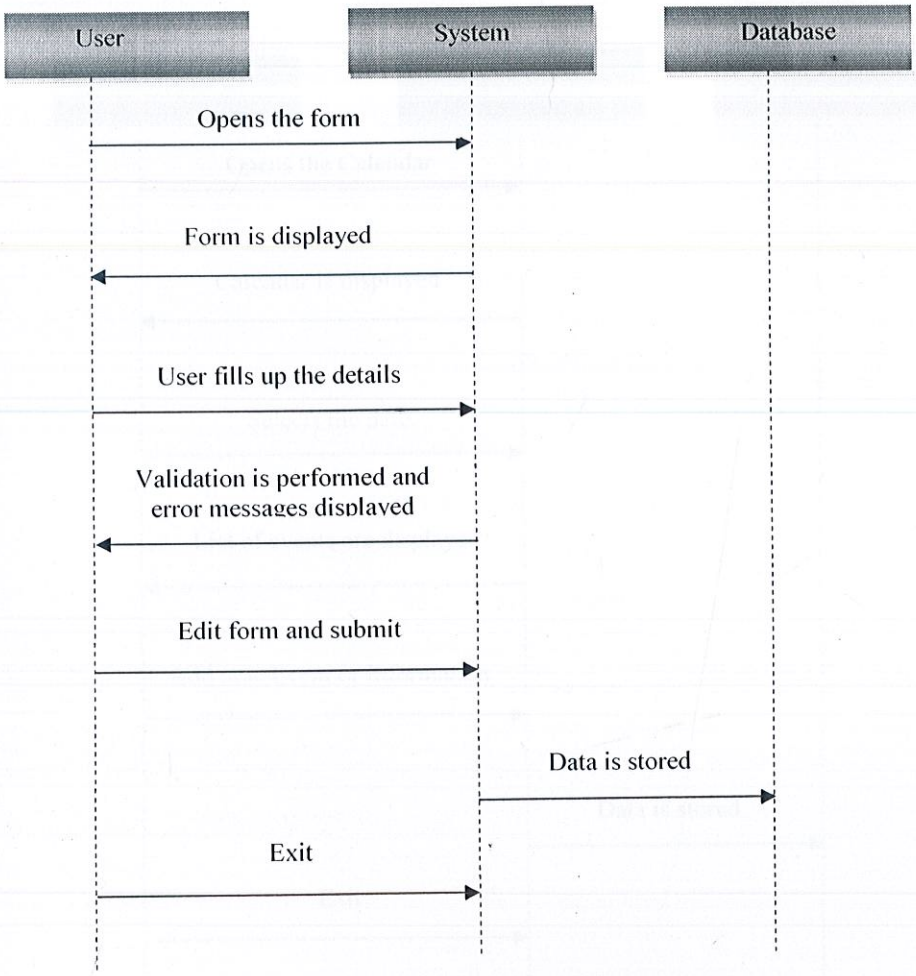

Figure 41.InfoPath module Sequence Diagram

Calendar Module

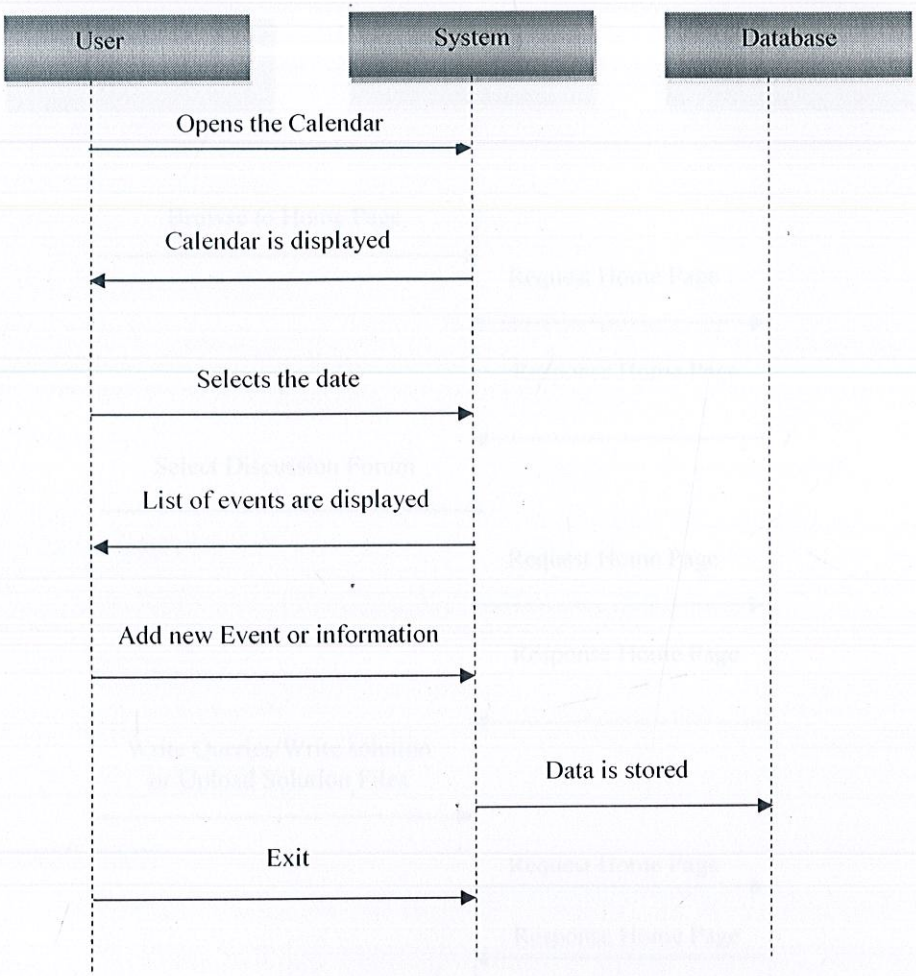

Figure 42.Calendar module Sequence Diagram

Discussion Forum Module

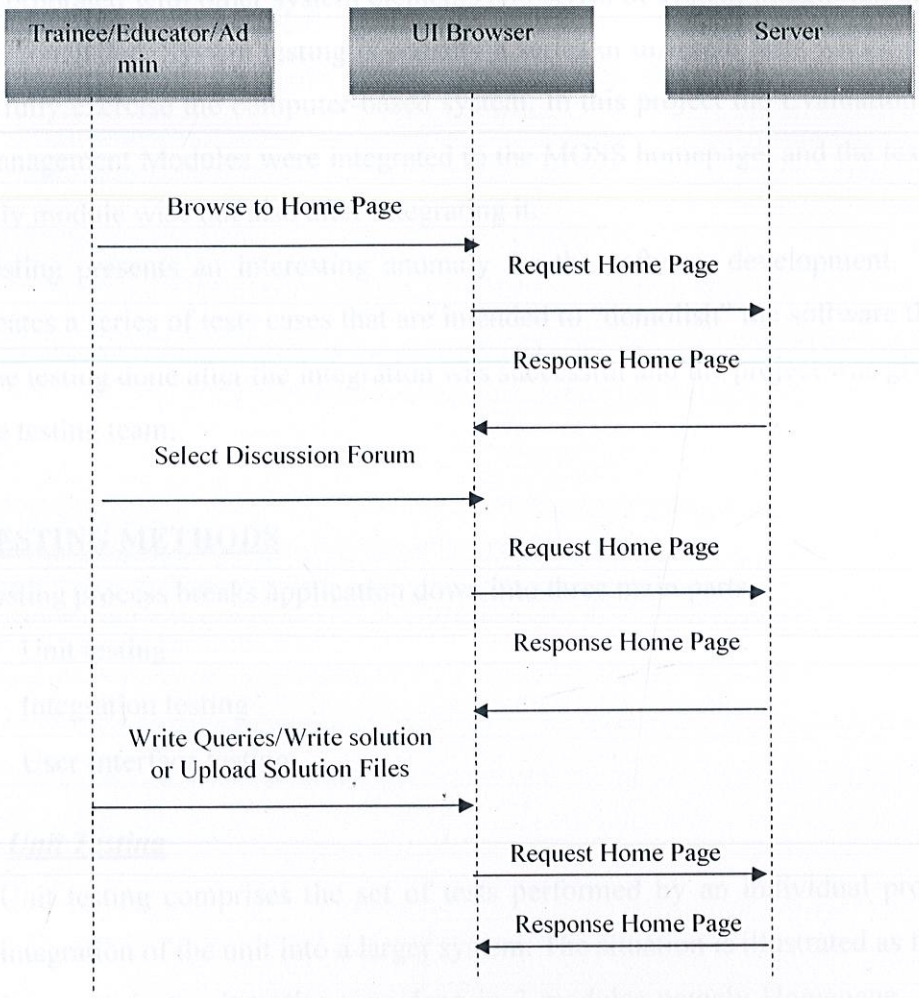

Figure 43.Discussion Forum module Sequence Diagram

CHAPTER 5

TESTING

5.1 SOFTWARE TESTING

Software is only one element of a larger computer based system. Ultimately software is incorporated with other system elements and series of system integration and validation tests are concluded. System testing is actually a series of different tests whose primary purpose is to fully exercise the computer-based system. In this project the Evaluation Tracker and Test Management Modules were integrated to the MOSS homepage, and the testing was done not only module wise but also after integrating it.

Testing presents an interesting anomaly for the software development. The testing phase creates a series of tests cases that are intended to "demolish" the software that has been built. The testing done after the integration was successful and the project was given a clean chit by the testing team.

5.2 TESTING METHODS

Testing process breaks application down into three main parts

- Unit testing
- Integration testing
- User Interface testing

5.2.1 *Unit Testing*

Unit testing comprises the set of tests performed by an individual programmer prior to integration of the unit into a larger system. The situation is illustrated as following sections. In our project unit testing was done in 3 modules namely Homepage, Evaluation tracker and the test management modules. In Evaluation tracker the allocation of evaluations, their updations, further evaluation requests etc all were targeted during the testing. In test management the test scheduling, batch allocation and the batch tests etc were targeted. In home page testing the look and feel of the portal was taken into consideration.

There are four categories of tests that a programmer will typically perform on a program unit.

- Functional tests
- Performance tests

- Stress tests
- Structure tests

5.2.1.1 *Functional Tests*

Functional tests, where test cases involve exercising the code with nominal input values for which the expected results are known. In Evaluation tracker the allocation of evaluations, their updations, further evaluation requests etc all were targeted during the testing. In test management the test scheduling, batch allocation and the batch tests etc were targeted. In home page testing the look and feel of the portal was taken into consideration.

5.2.1.2 *Performance Tests*

Performance testing is concerned with the evaluation speed and memory utilization of the program. Using various test cases the package and the performance is found satisfactory. This was done for individual modules and also after integrating with MOSS.

5.2.1.3 *Stress Tests*

Stress testing which is concerned with exercising the internal logic of a program and travelling particular execution paths is done. The input is given in such a way that starting from request from viewer to the job completion all possible paths is tested. In this testing the integrated modules were tested by the tester as a whole, i.e. the whole portal was executed one final time to check that how the portal responds when a lot of inputs were given by the user.

5.2.1.4 *Structure Tests*

Structure testing is also referred to as White Box or Glass Box testing. The project is tested for its execution in every module. The testing operation is successfully done and every module functions properly.

5.2.2 *Integration Testing*

Objective of Integration testing is to make sure that the interaction of two or more components produces results that satisfy functional requirement. In integration testing, test cases are developed with the express purpose of exercising the interface between the components. In Evaluation tracker the allocation of evaluations, their updations ,further

evaluation requests etc all were targeted during the testing. In test management the test scheduling, batch allocation and the batch tests etc were targeted. In home page testing the look and feel of the portal was taken into consideration.

Assumptions were be made as to for how long we will receive data from different components and how we/the user have to pass data to different components. The overall idea is a "building block" approach, in which verified assemblages are added to a verified base which is then used to support the integration testing of further assemblages. Integration Testing can be performed in three different ways based on from where you start testing and in which direction you are progressing.

- Big Bang Integration Testing
- Top Down Integration Testing
- Bottom Up Integration Testing
- Hybrid Integration testing

Top down testing can proceed in a depth-first or a breadth-first manner. We followed the depth-first integration technique for the project. For depth-first integration each module was tested in increasing detail, replacing more and more levels of detail with actual code rather than stubs. Alternatively breadth-first was used to proceed by refining all the modules at the same level of control throughout the application. Here a combination of the two techniques was used and the system was tested throughout and every module functions properly.

CHAPTER 6

SCREENSHOTS

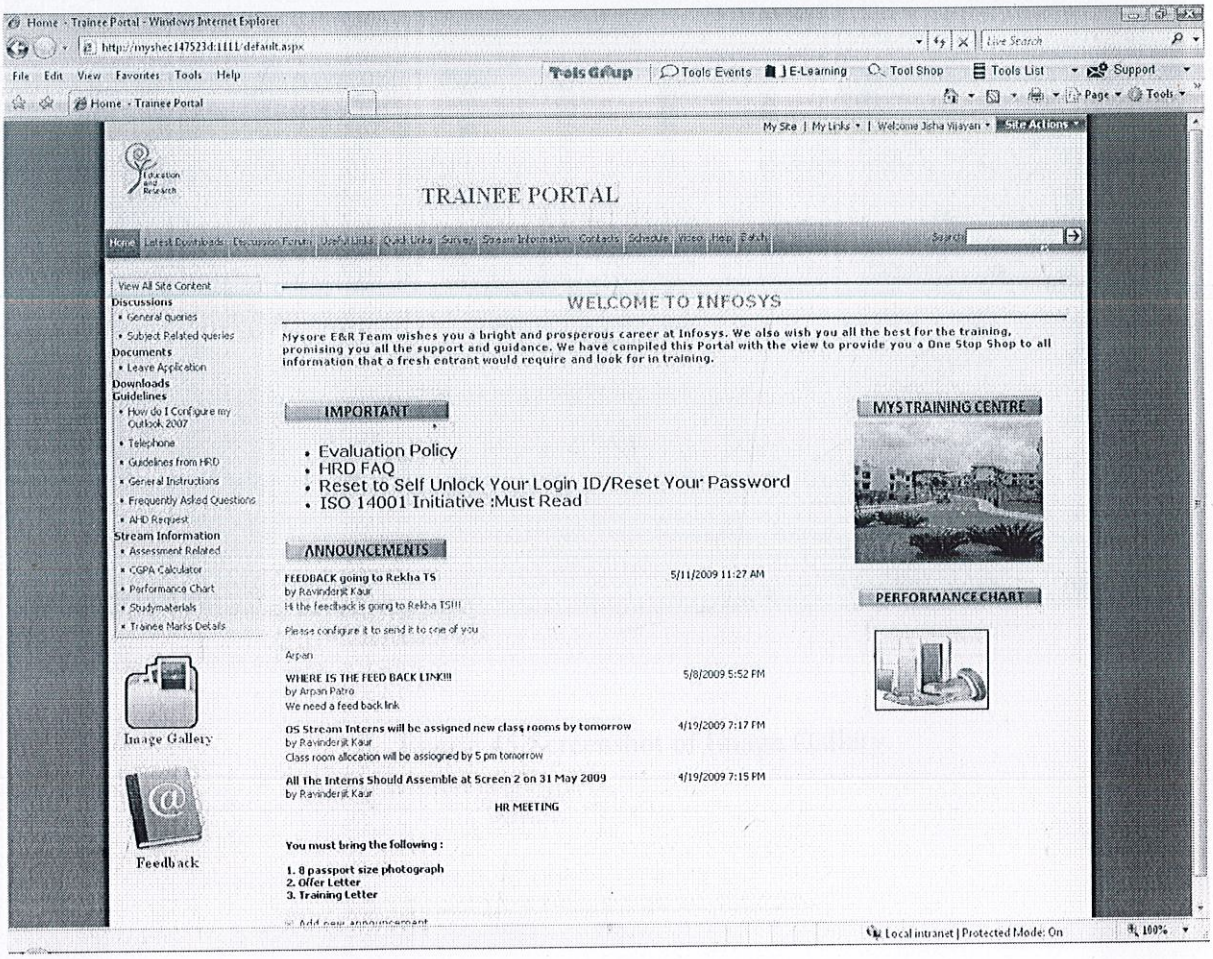

Figure 44.Screenshot of Home Page

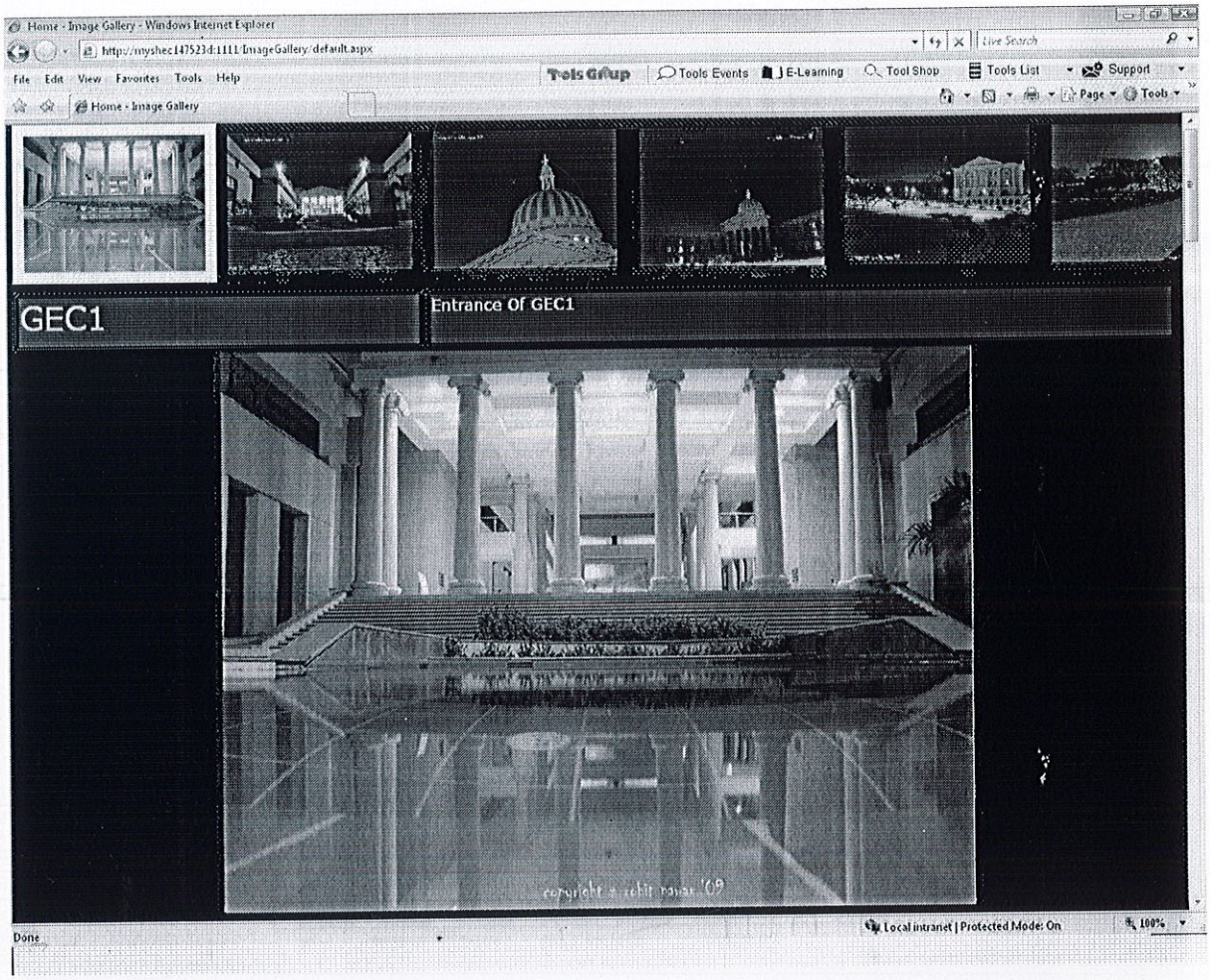

Figure 45.Screenshot of Image Gallery

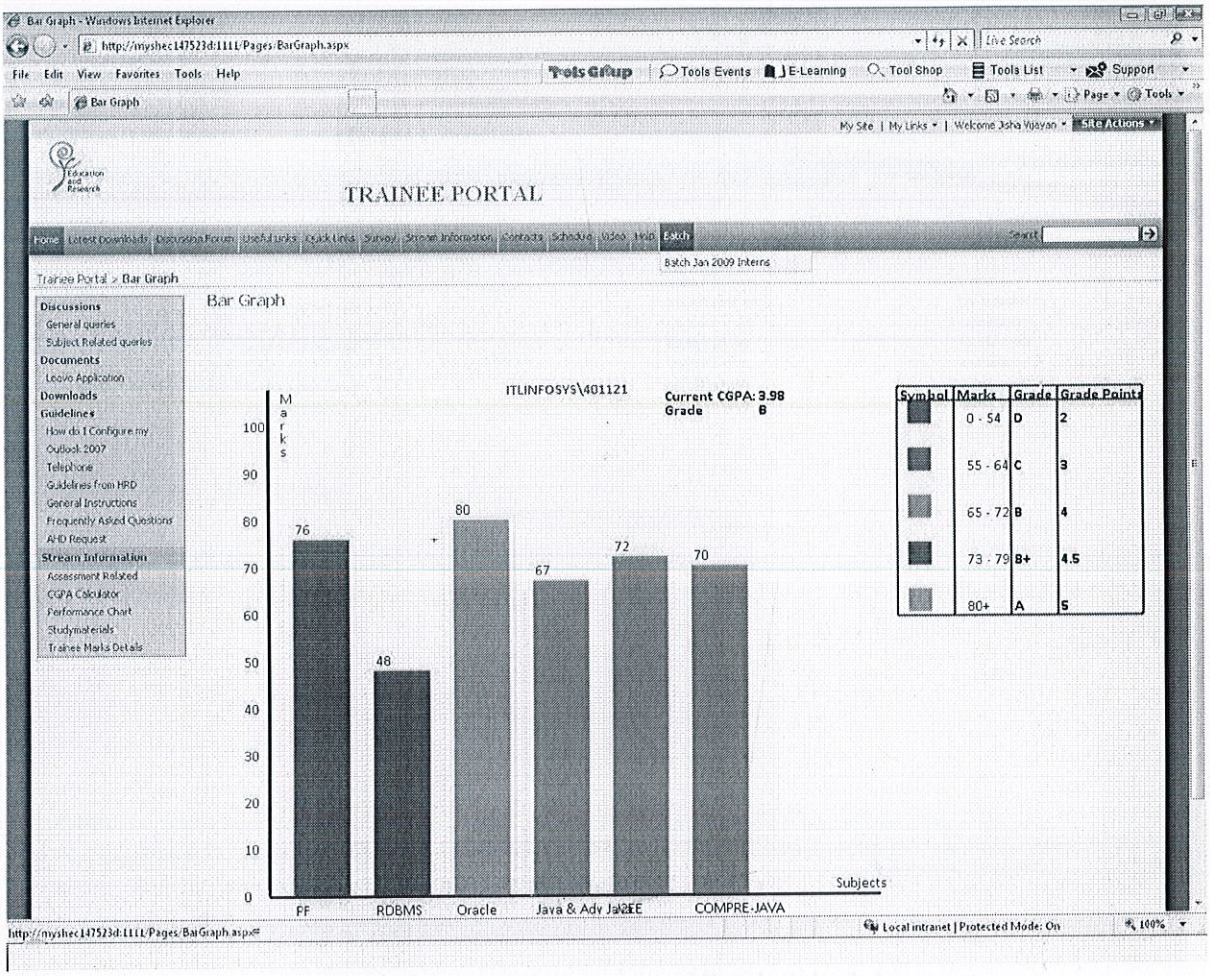

Figure 46.Screenshot of Trainee Performance Graph

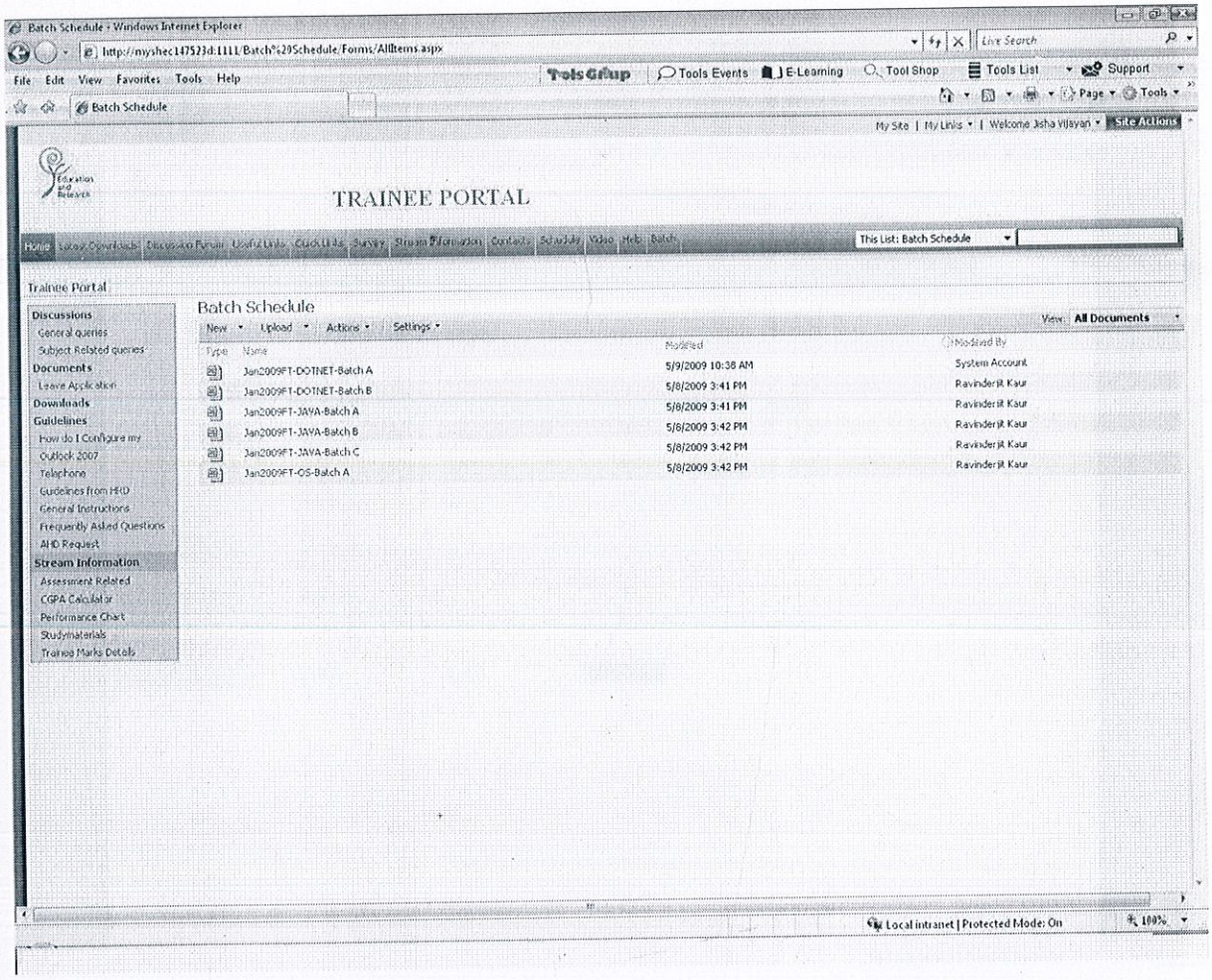

Figure 47.Screenshot of Batch Schedule

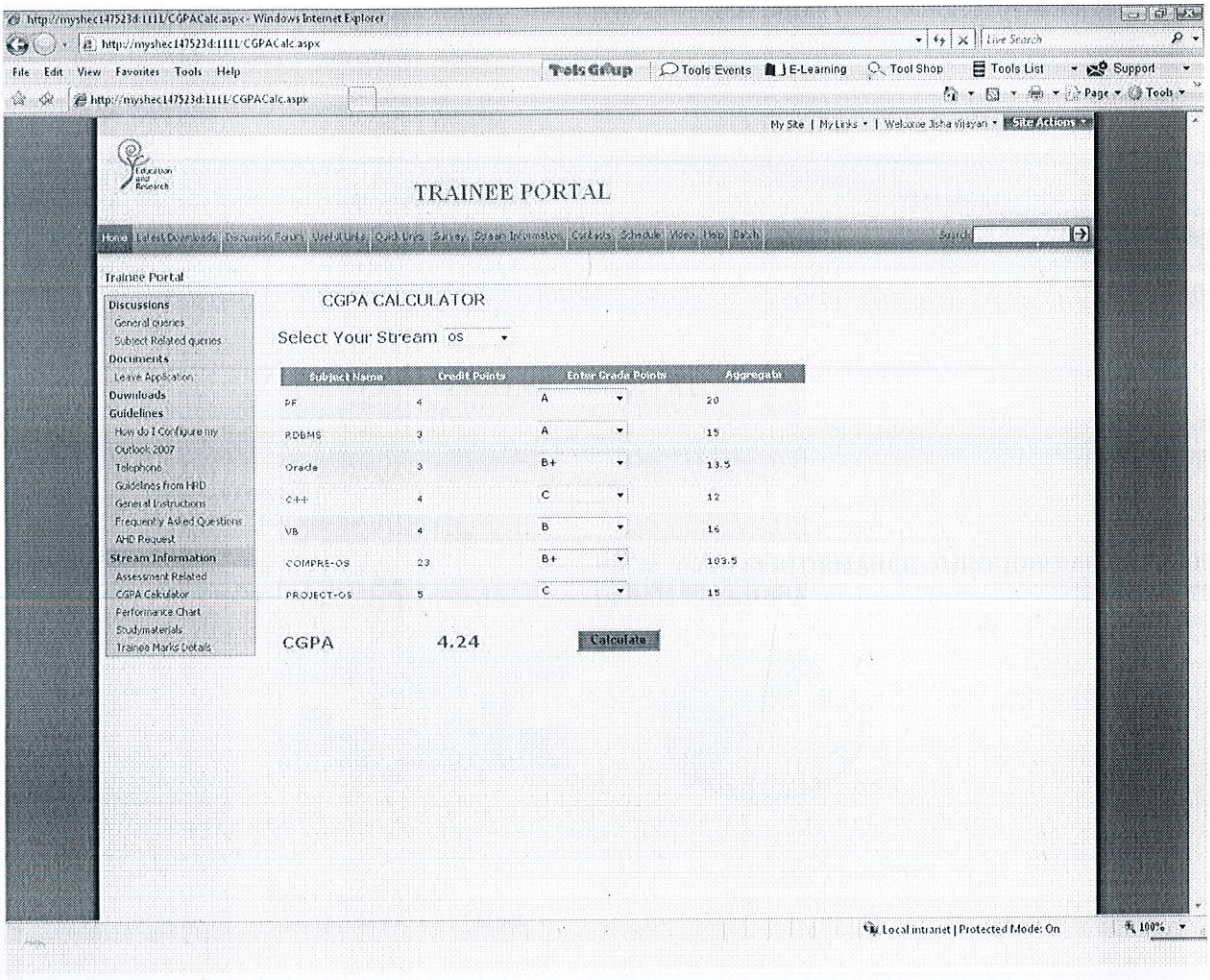

Figure 48.Screenshot of CGPA Calculator

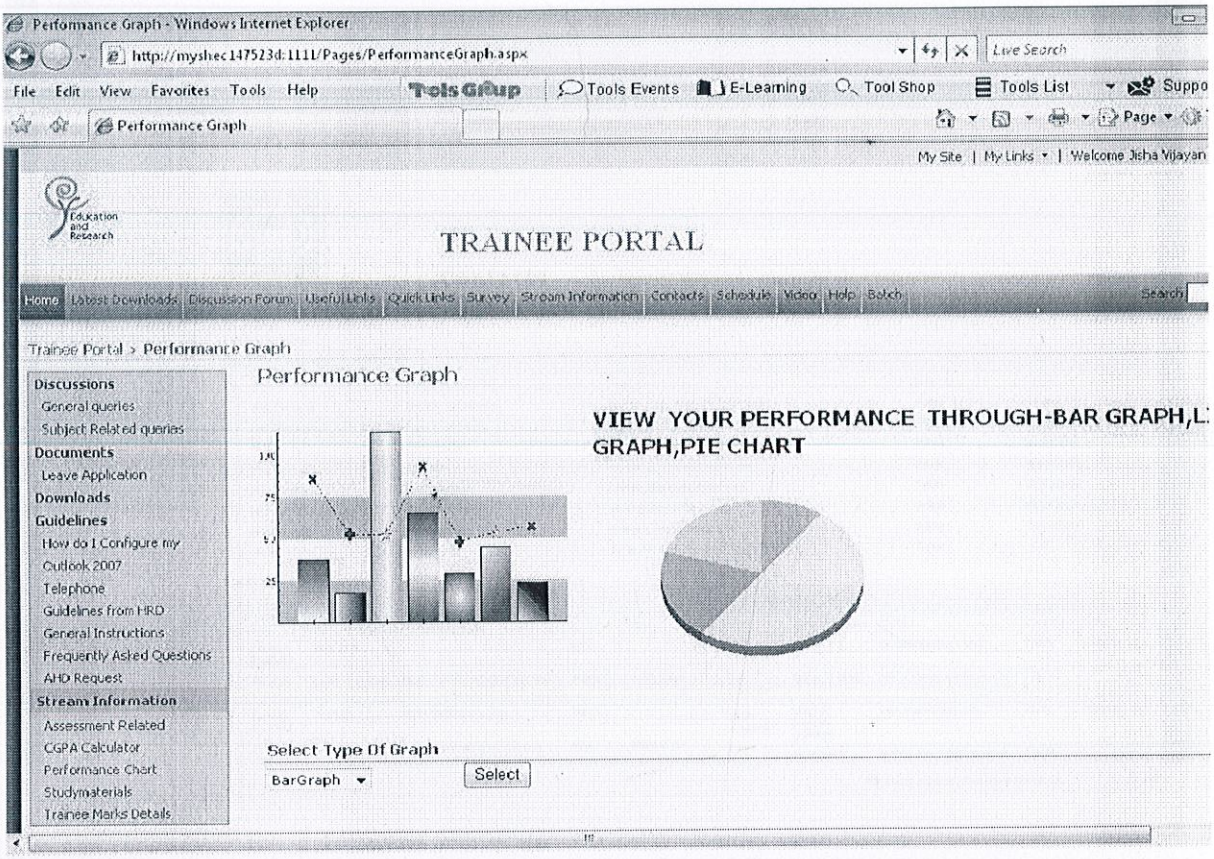

Figure 49.Screenshot of Performance Graph

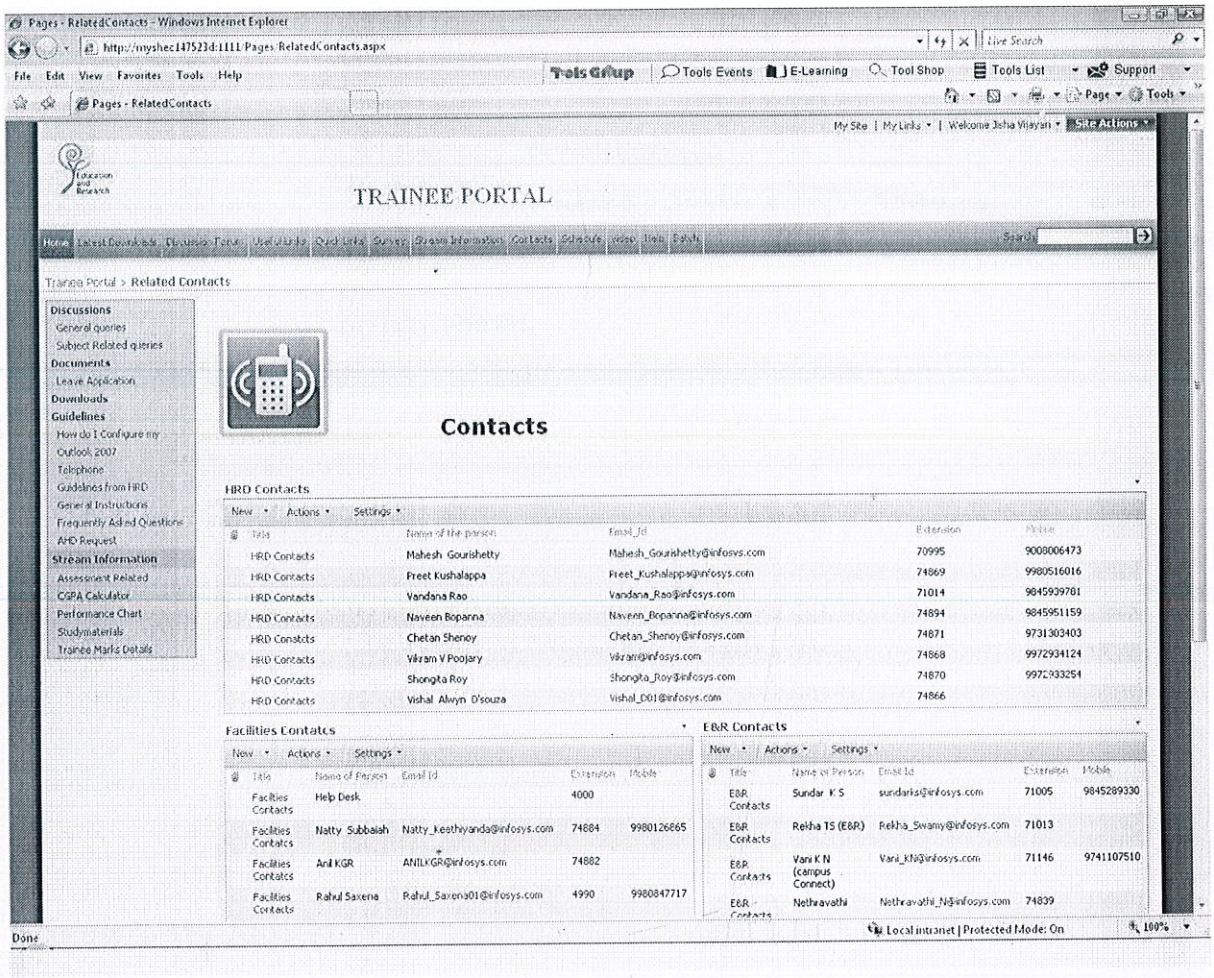

Figure 50.Screenshot of Contacts

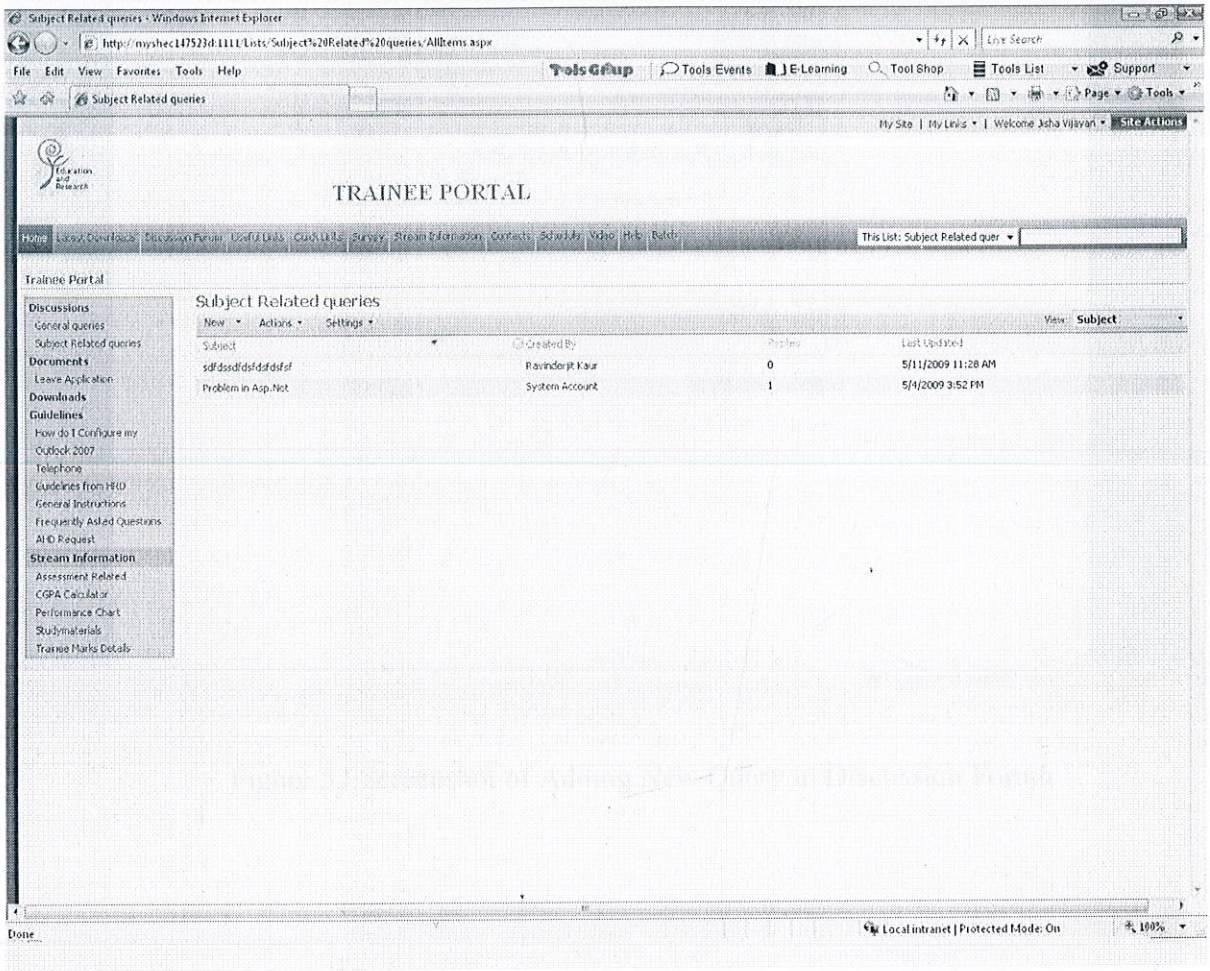

Figure 51.Screenshot of Discussion Forum (Subject-related queries)

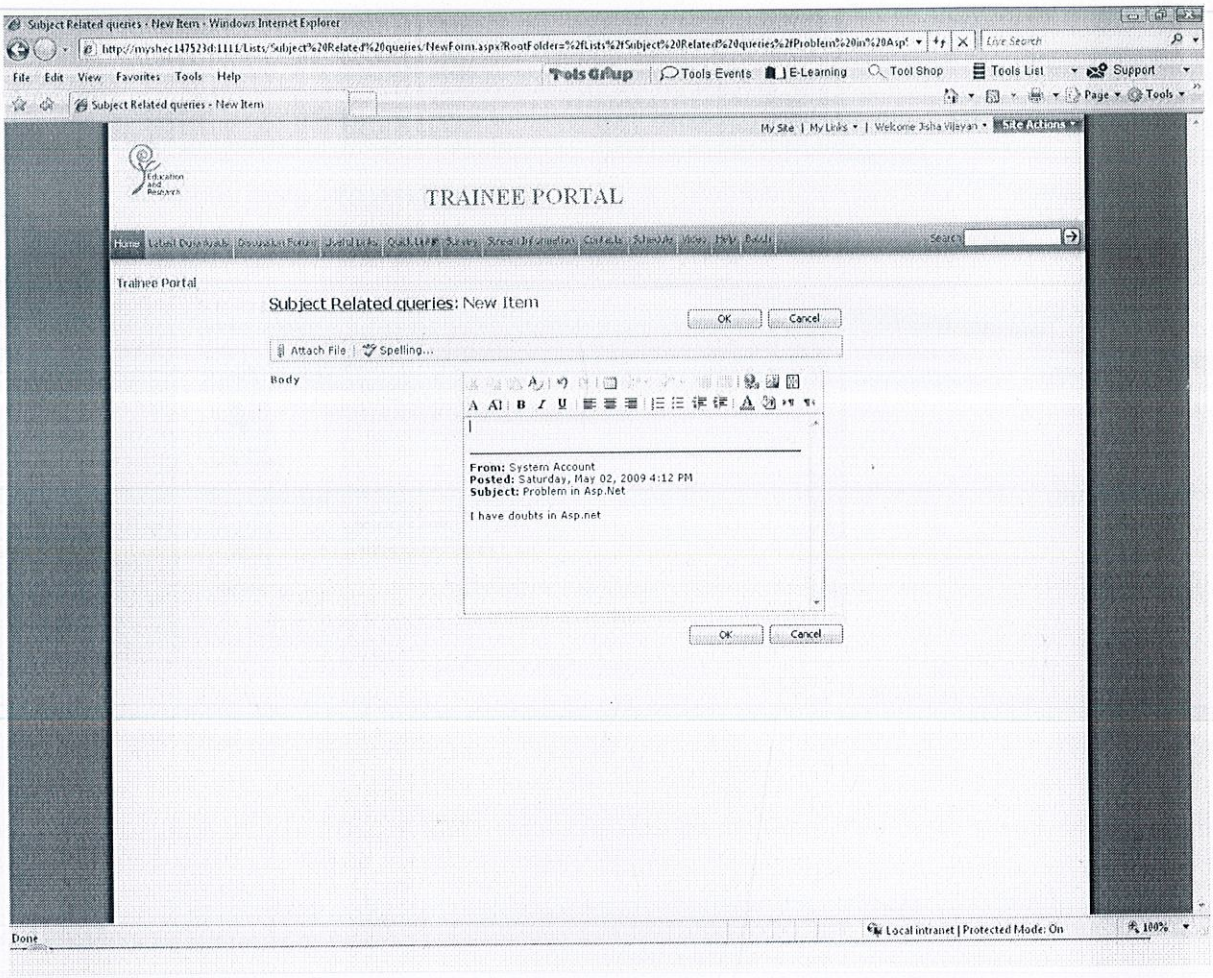

Figure 52.Screenshot of Adding New Query in Discussion Forum

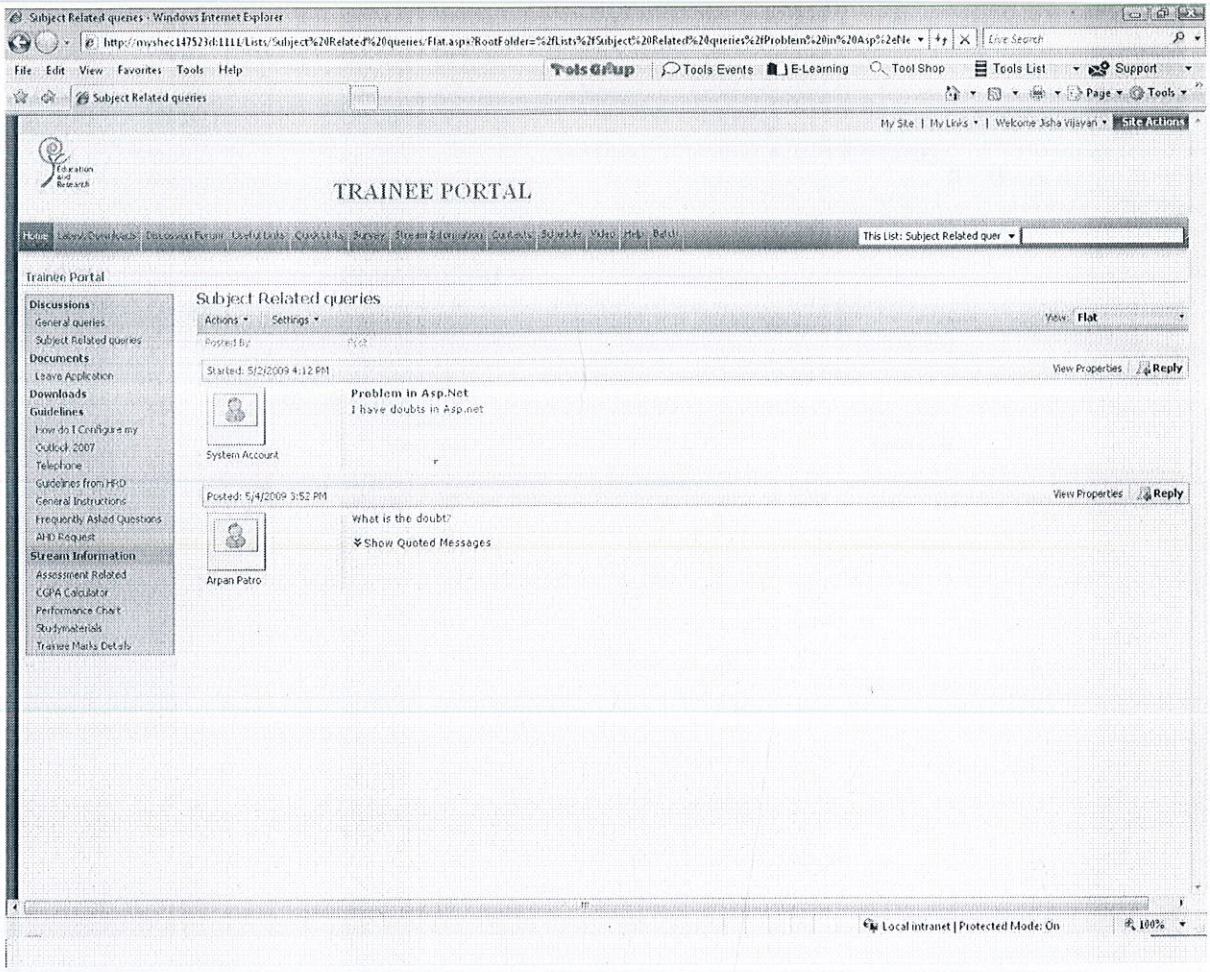

Figure 53.Screenshot of Subject-related Queries

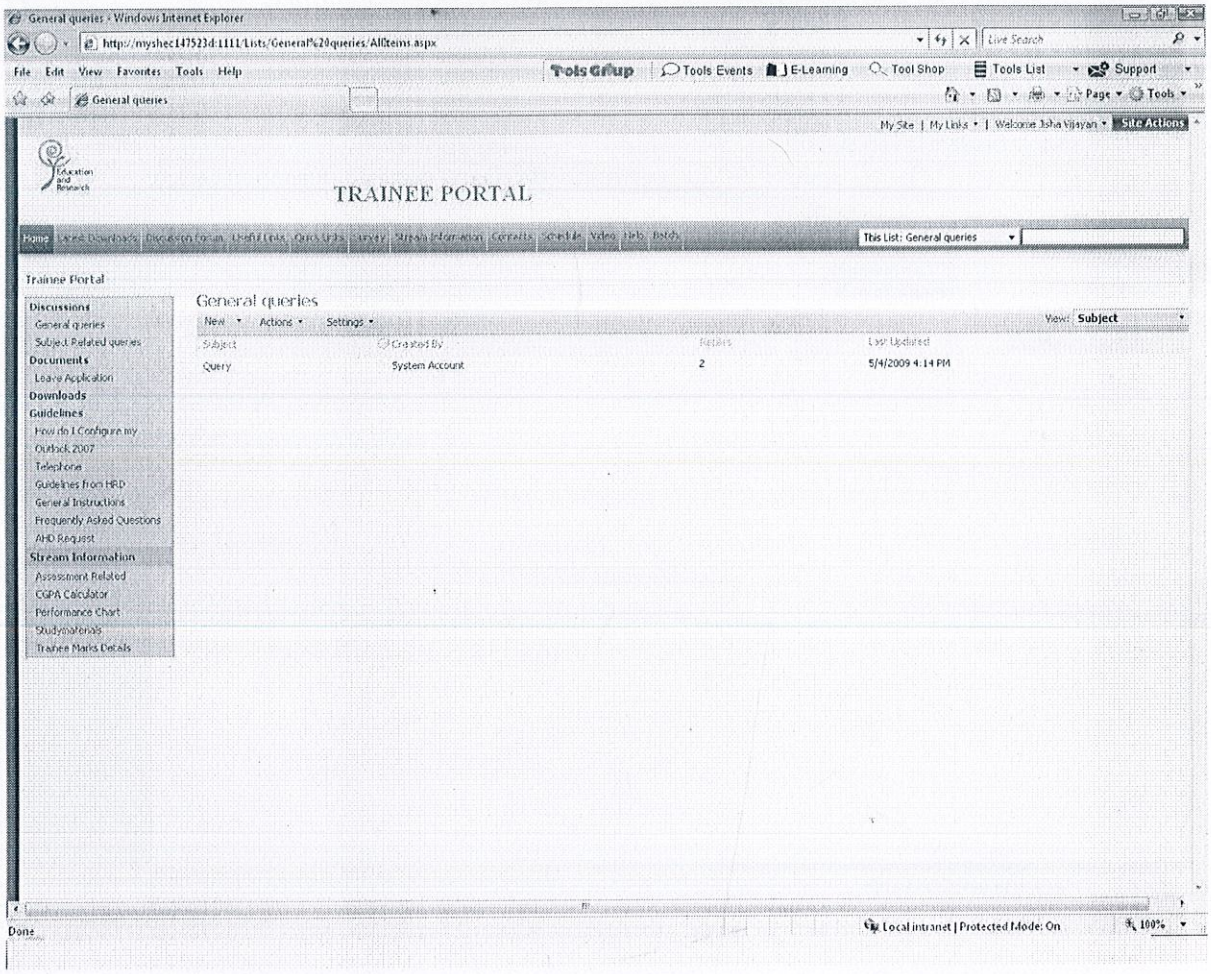

Figure 54.Screenshot of Discussion Forum (General Queries)

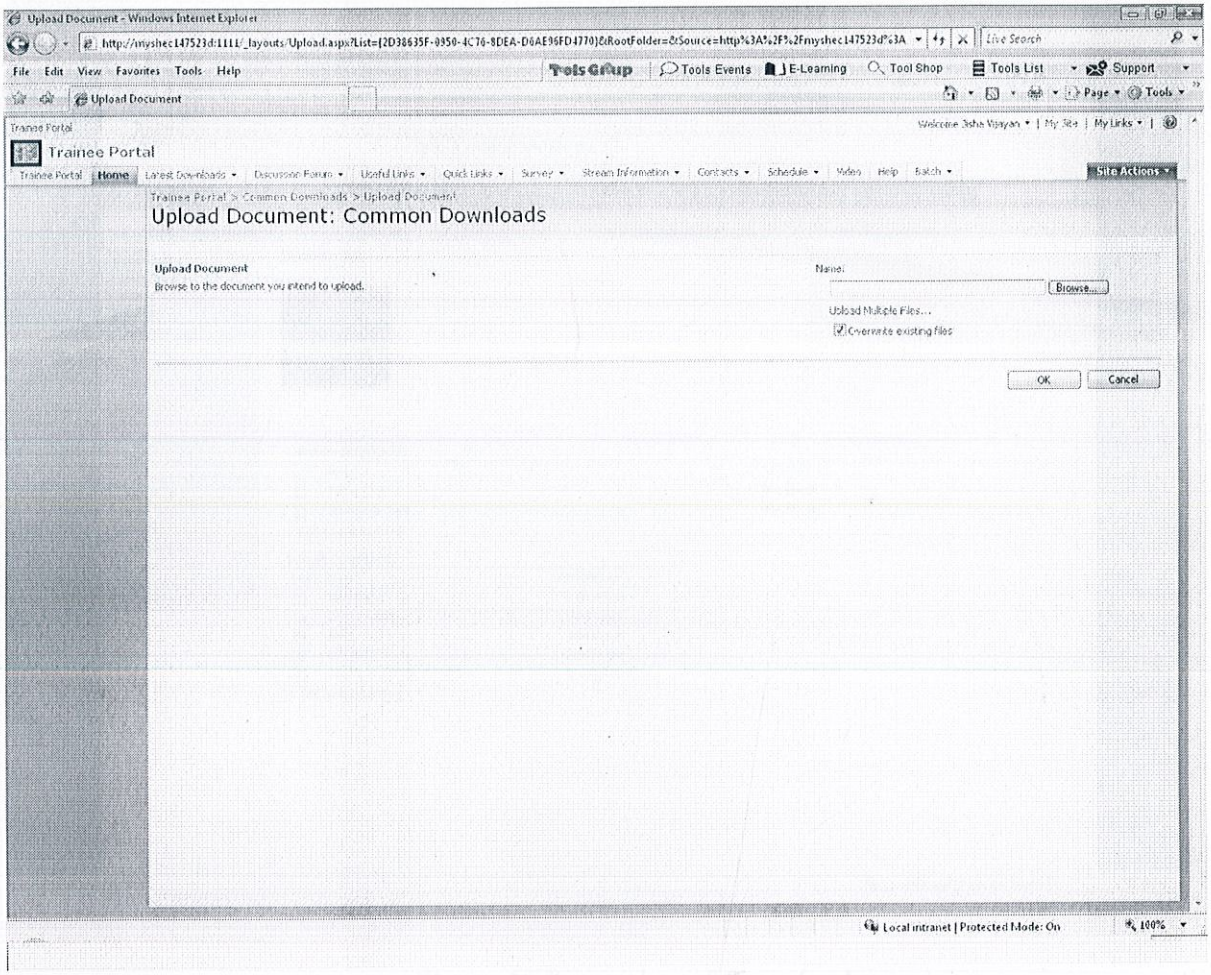

Figure 55.Screenshot of Uploading Documents

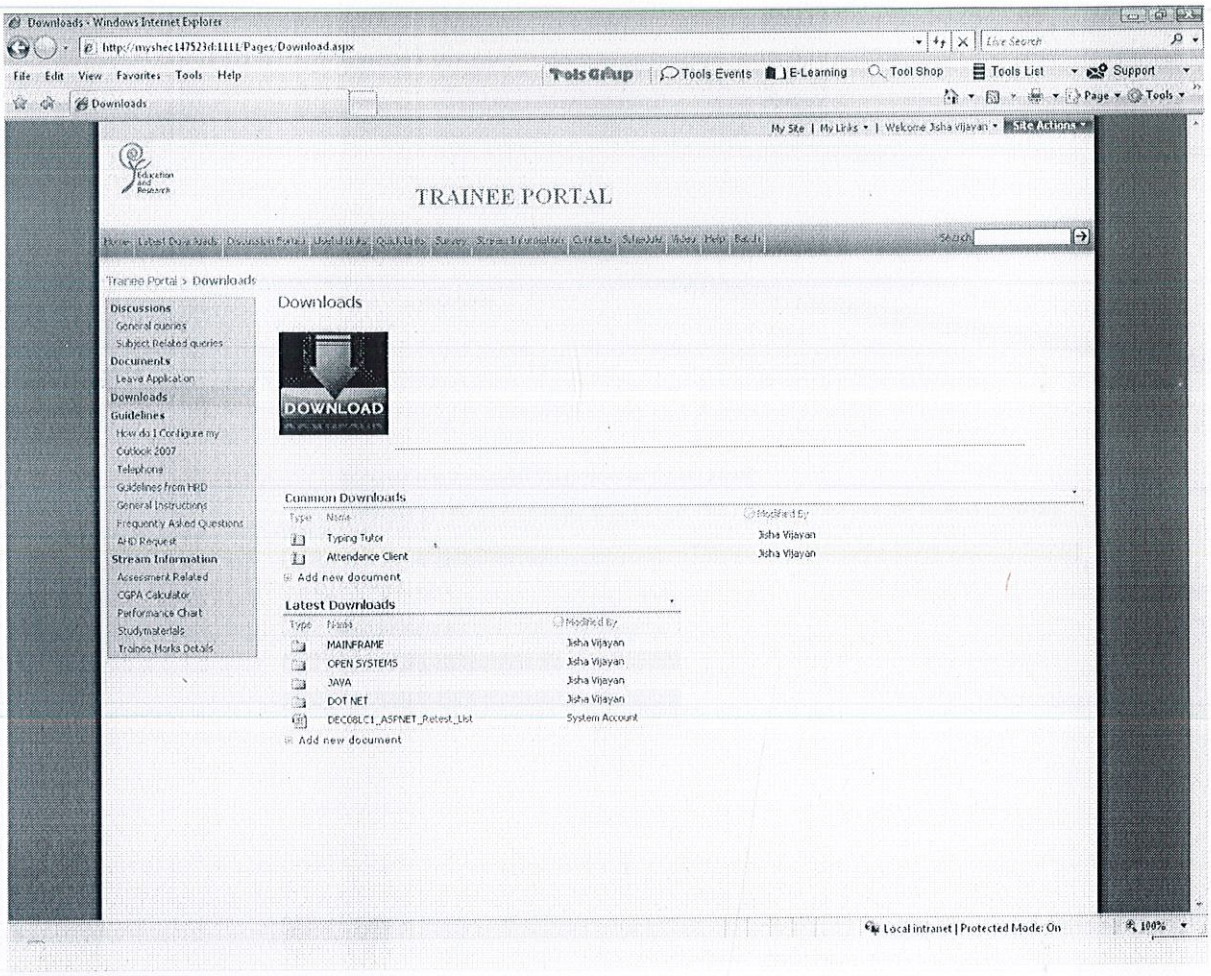

Figure 56.Screenshot of Downloads

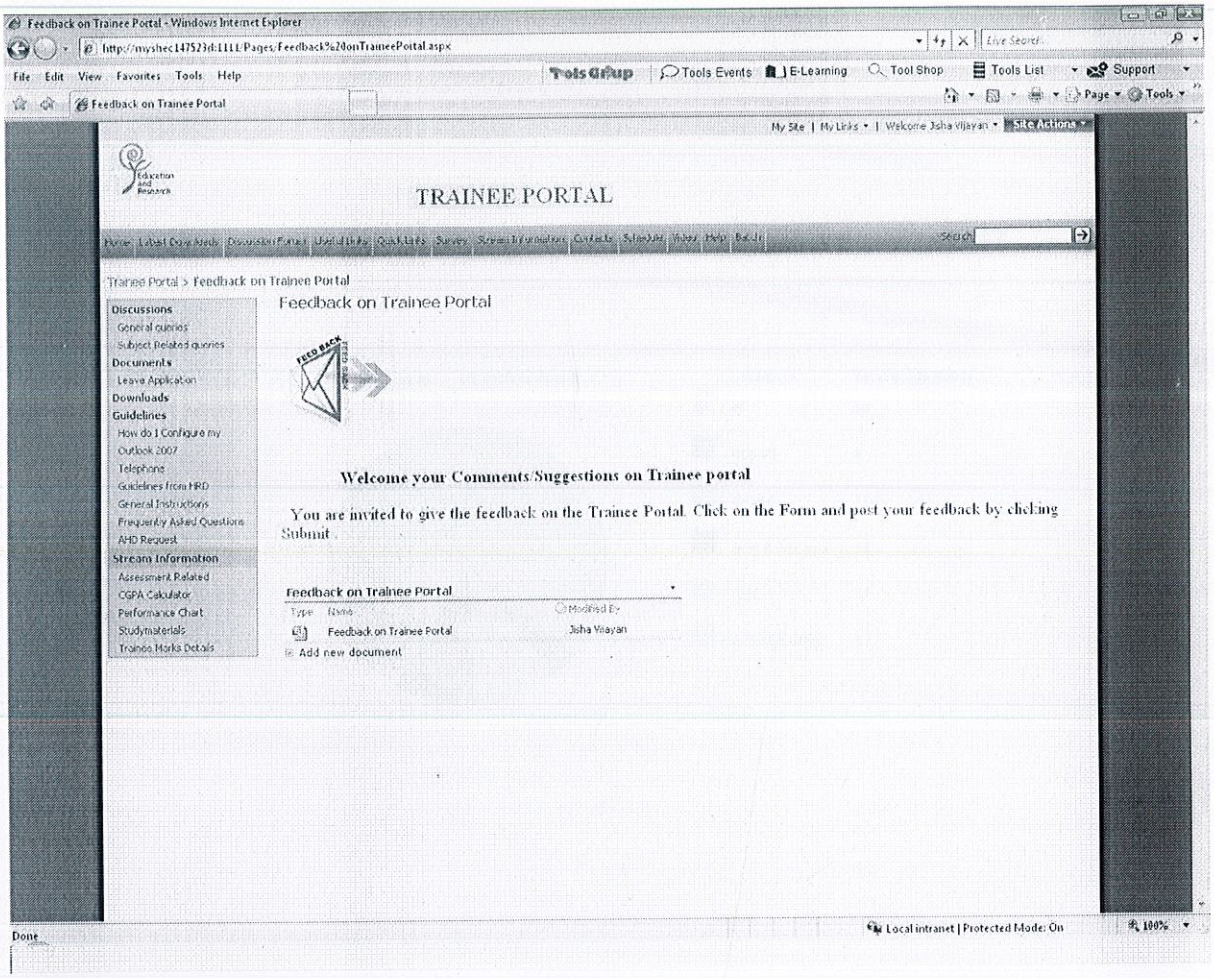

Figure 57.Screenshot of Feedback link

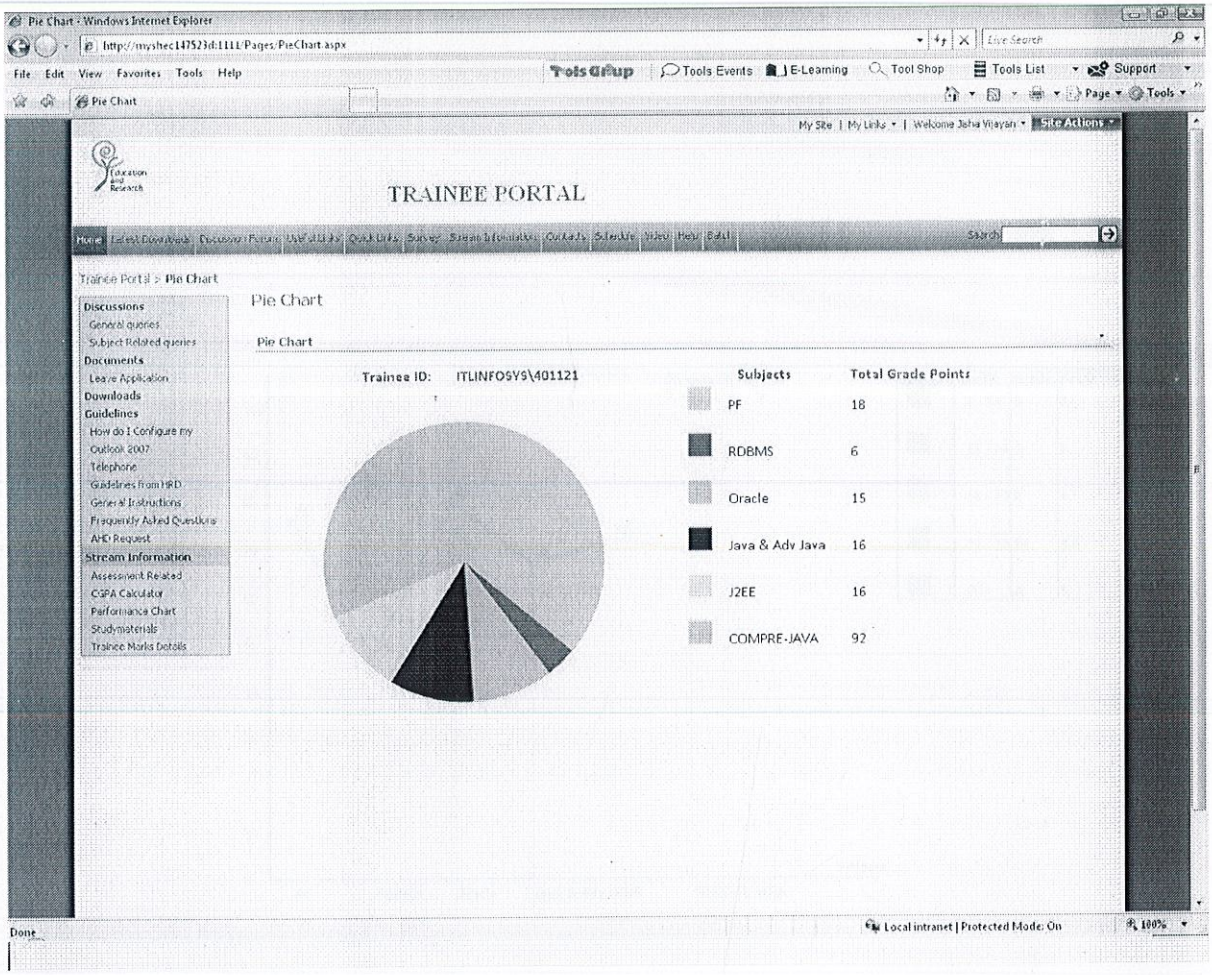

Figure 58.Screenshot of Pie-Chart Graph

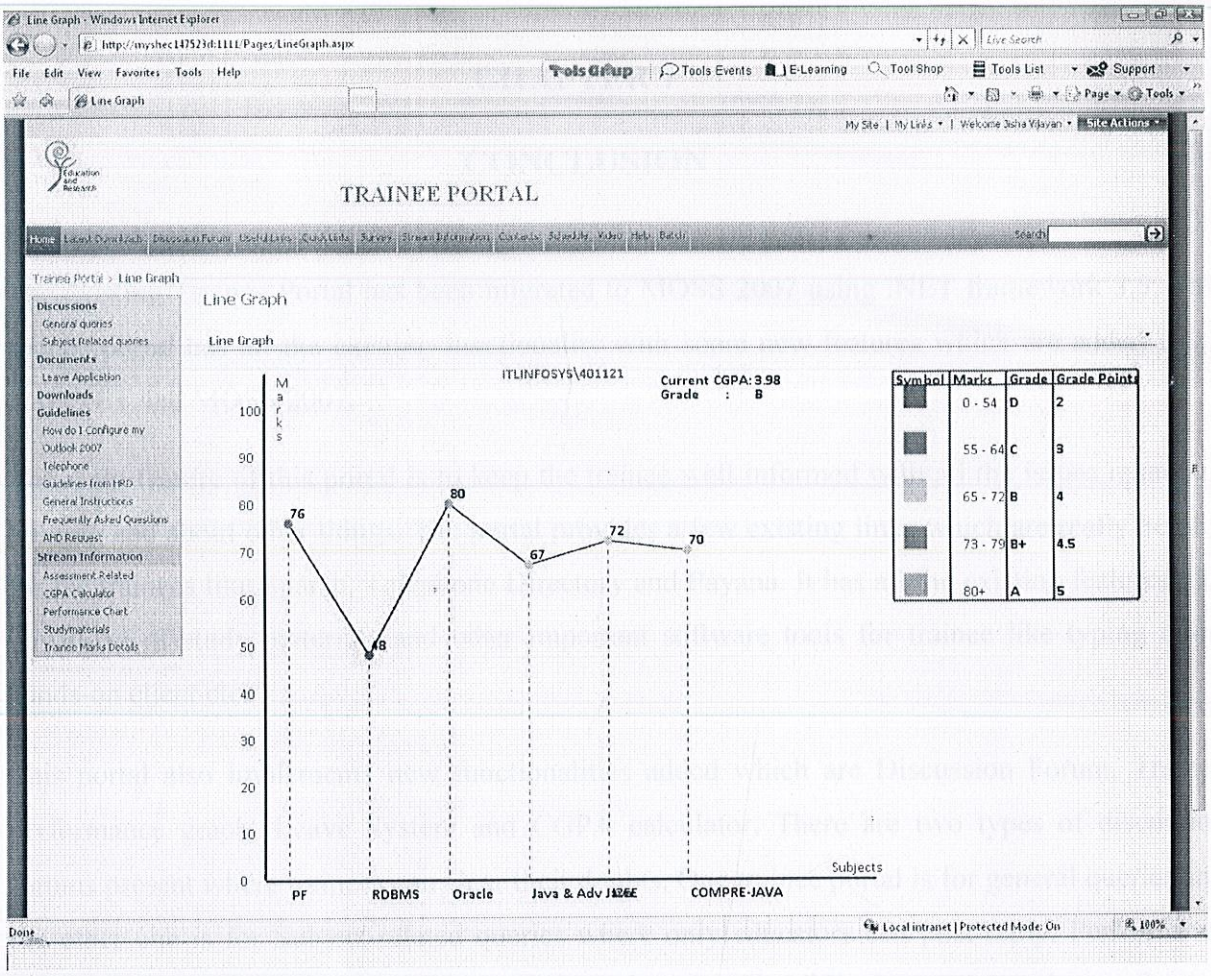

Figure 59.Screenshot of Trainee Performance Chart (Line Graph)

CHAPTER 7

CONCLUSION

The existing Trainee Portal has been migrated to MOSS 2007 using .NET framework 3.5. This trainee portal has all the existing functionality with some new features which are added using ASP.NET and MOSS 2007.

The main feature of this portal is to keep the trainee well informed with all the issues related to training and about other things. The portal provides a few existing links which are really helpful for the trainees like Sparsh, Telephone Directory and Payana. It has all the existing features like download of study materials and other important software tools for trainee like typing tutor, hands-on client etc.

This portal also implements new functionalities added which are Discussion Forum, Trainee performance graph, Leave System and CGPA calculator. There are two types of discussion forums present where trainees can clear their doubts. One trainee portal is for general queries and the other one is for Subject-related queries where only educators can post reply. Performance graph shows the graph based on trainee's performance in different modules. Leave System provides trainee with the application which trainee can use to apply for the leave to his Batch Owner. It has a calendar where trainee can view the information about different events to be taking place in the campus.

There is a common trainee portal having links to the trainee portals of different batches. Every batch has its own trainee portal having all the common links but with a different Home page and different downloads provided to them.

BIBLIOGRAPHY

- SharePoint 2007 User's Guide: Learning Microsoft's Collaboration and Productivity Platform
  By Seth Bates (Author), Tony Smith (Author)
- Beginning SharePoint 2007: Building Team Solutions with MOSS 2007
  By Amanda Murphy (Author), Shane Perran (Author)
- Microsoft Office SharePoint Server 2007 Best Practices
  By Ben Curry (Author), Bill English (Author)
- Microsoft® Office SharePoint® Server 2007 Administrator's Companion
  By Bill English (Author), The Microsoft SharePoint Community Experts(Author)

REFERENCES

http://www.microsoft.com/net

http://blogs.interknowlogy.com/jeffschroeder

http://technet.microsoft.com

http://msdn.microsoft.com

http://www.bizsupportonline.net

http://blogs.msdn.com/vsta

http://office.microsoft.com

http://www.bronios.com