

Corporate Portal Management System

Thesis submitted in partial fulfilment of the requirements for the degree of

Bachelor of Technology

in

Computer Science and Engineering

By

Guru Balakrishna.A

Bhargav Nilagiri

Ankit Gupta

Under the guidance of

Prof. Pabitra Mohan Khilar



Department of Computer Science and Engineering

National Institute of Technology Rourkela

May 2012

Dedicated to Our Parents and
Our Project Supervisor Prof. Pabitra Mohan
Khilar.



National Institute of technology, Rourkela

Department of Computer Science and Engineering

Rourkela-769008, Odisha, India.

Certificate

This is to certify that the work in the thesis entitled *Corporate Portal Management System* submitted by **A. Guru Balakrishna, Bhargav Nilagiri, Ankit Gupta** is a record of an original research work carried out under my supervision and guidance in partial fulfilment of the requirements for the award of degree of *Bachelor of technology* in Computer Science and Engineering, National Institute of Technology Rourkela, Neither this thesis nor any part of it has been submitted for any degree or academic award elsewhere

Place: NIT Rourkela

Prof. Pabitra Mohan Khilar

Date:

Dept. Computer Science and Engineering

National Institute of technology Rourkela

Odisha- 769008

Acknowledgement

We owe a great many thanks to many people who helped and supported us during the course of this project.

Our deepest gratitude to Prof. P M Khilar, NIT, Rourkela, for his support and guidance. He has taken pain to go through the project and make necessary correction as and when needed. Thanks and appreciation to the helpful people at IBM, for their support. We would also like to thank the generosity shown by Institute of Engineers, India for their financial aid and also for believing in this project of ours.

We would also thank our Institution and our faculty members without whom this project would have been a distant reality. We also extend our heartfelt thanks to all our well wishers.

A Guru Balakrishna
(108CS011)

Bhargav Nilagiri
(108CS055)

Ankit Gupta
(108CS051)

Computer Science and Engineering
National Institute of Technology
Rourkela

Abstract

Web Portal Software Systems have become a very effective communication medium for sharing. Our Portal Management System dramatically simplifies the creation and management of portals.

A corporate portal is a web-based platform to access with security a broad range of information, services, applications and expertise. The corporate portal management system platform offers a flexible and robust content management solution that allows employees, customers and partners to safely collaborate on, contribute to and manage business content anywhere around the world. It can be utilised as an extranet that serves both internal and external users or as an intranet for internal communication in an organisation. Corporate portals can also provide single sign-on capabilities between their users and various other systems.

The focus of our software is on presenting documents and content in an effective manner to individuals, groups, customers, partners and vendors. Portal content, services and applications can be customized and personalized to the need of different users or user groups. Content will be published on portal by a content management tool. Before publishing the content, it will be approved by management by using workflow.

The basic and the most important function of the Corporate Portal Management System is the routing of data using the concept of workflow along with the various features like scheduling, commenting module and other similar features which make the software using service highly interactive and communicative. The use of this software can result in a reduction in the number of man hours spent in moderating the content on any portal. It also provides an easy to understand and intuitive interface for users which greatly helps in adapting to the use of this software.

Contents

Certificate	iii
Acknowledgement	iv
Abstract	v
List of Figures	viii
List of Tables	ix
List of Abbreviations	x
1.Introduction	1
1.1 Introduction.....	2
1.2 Purpose	3
1.3 Scope.....	4
1.4 Thesis Organization.....	5
1.5 Conclusion	5
2.General Description	6
2.1 Introduction.....	7
2.2 Product Perspective	7
2.3 Product Functions	8
2.4 User Characteristics.....	8
2.5 General Constraints	9
2.6 Conclusion	10

3.System Analysis	11
3.1 Introduction.....	12
3.2 Functional Requirements.....	12
3.3 Use cases.....	13
3.4 Triggers Used	14
3.5 Conclusion	15
4.Analysis models.....	16
4.1Introduction.....	17
4.2 Work flow sequence	17
4.3 Work Flow chart.....	19
4.4 Use Case Diagrams.....	21
4.5Activity Diagrams.....	24
4.6 Conclusion	31
5.Technologies Used	32
5.1 Introduction.....	33
5.2Apache HTTP Server	33
5.3 PHP Scripting	33
5.4 MySQL	34
5.5 Drupal	34
5.6 Conclusion	35
6. Conclusions and Future Enhancement.....	36
Dissemination	38
Bibliography.....	39

List of Figures

1.1	The scheme of generic portal.....	3
4.1	Workflow chart.....	18
4.2	Use case Diagram: Writer.....	20
4.3	Use case Diagram: Manager.....	21
4.4	Use case Diagram: Super Administrator.....	22
4.5	Use case Diagram: Add New User.....	23
4.6	Activity Diagram: Login.....	24
4.7	Activity Diagram: Writer.....	26
4.8	Activity Diagram: Manager.....	27
4.9	Activity Diagram: Super Administrator.....	29

List of Tables

4.1	Workflow Transitions: Writer.....	16
4.2	Workflow Transitions: Manager.....	17

List of Abbreviations

CPMS	Corporate Portal Management System
CMS	Content Management System
SQL	Structured Query Language
LAMP	It is an acronym for a solution stack of free, open source software, referring to the first letters of Linux (operating system), Apache HTTP Server, MySQL (database software) and PHP (or sometimes Perl or Python), principal components to build a viable general purpose web server.
Cron	is a time-based job scheduler in Unix-like computer operating systems. The name cron comes from the word "chronos", Greek for "time".
ERP	Enterprise resource planning
KM	Knowledge Management
TCO	Total Cost of Ownership
PHP	Hypertext pre-processor

CHAPTER 1

Introduction

Introduction

Purpose

Scope

Thesis Organization

Conclusion

Chapter 1

Introduction

1.1 Introduction

A corporate portal is a framework for integrating information, people and processes across organizational boundaries. It provides a secure unified access point, often in the form of a web-based user interface, and is designed to aggregate and personalize information through application-specific portlets. One hallmark of enterprise portals is the de-centralized content contribution and content management, which keeps the information always updated.

A Corporate Portal is basically a secured website used by employees, manufacturers, alumni and even customers. The portal is the perfect starting point for everyday tasks that usually would consist of using many different types and sources of information and tools. By gathering all necessary information and tools in one environment, users save huge amounts of time.

Companies not only save time through their users, IT management costs and the TCO (total cost of ownership) can be much lower.

The role of corporate portals is not simply to help individuals make sense of the volume of information at hand. More important, portals help users cope with the breakdown in our ability to maintain the underlying connections between information sources--the basis of knowledge and knowledge sharing. The figure 1.1 shows the scheme of a generic corporate portal.

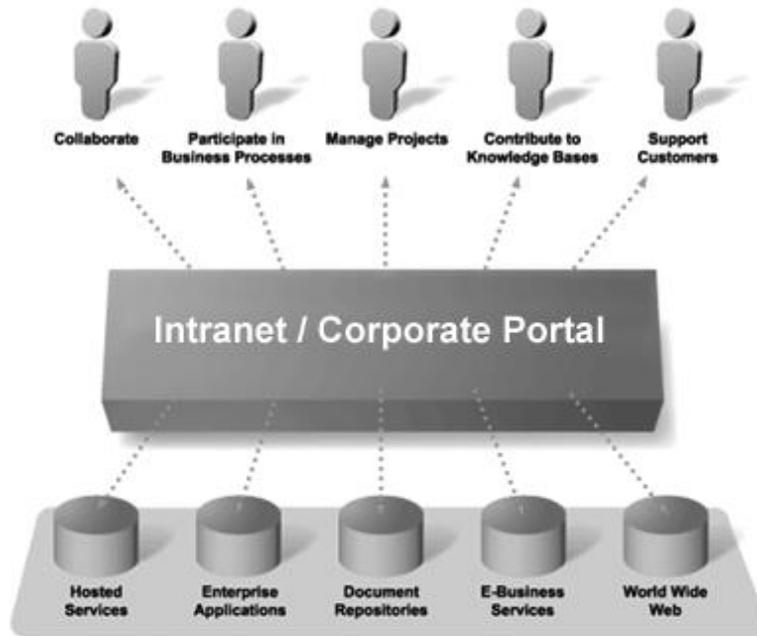


Fig 1.1 *A diagram indicating the scheme of a generic corporate portal*

For example, aircraft maker Boeing Co. has an intranet hosting more than 1,600 separate sites used by 160,000 employees. This incredible influx of readily accessible, yet completely disconnected, sources and streams of information makes it clear that the current means of navigating, organizing, and linking information with underlying business processes is woefully inadequate in most organizations. It is in this "middle-office" space that corporate portals promise the greatest impact.

A successful portal also incorporates existing applications such as legacy software and ERP applications. In fact, a Corporate Portal can make existing applications web-enabled.

Section 1.2 introduces the purpose of the project, 1.3 informs about the scope of the project, 1.4 reveals the thesis organization and section 1.5 concludes the first chapter.

1.2 Purpose

Design and develop a portal for a corporate environment. Content will be published on portal by a content management tool. Before publishing the content, it will be approved by the

management by way of using a workflow that we will design. The basic purpose of the project is to ensure the streamlined data flow of the portal using workflow management as well as designing the workflow itself. The portal can be used for multiple audiences.

If there is an ideal fit for corporate portals, it's at the intersection of the front and back office where negotiation, product differentiation, and competitive advantage thrive. While back-office functions focus on cost management and front-office functions focus on revenue enhancement, the middle office is where profit is maximized and risk is minimized by the efficiency achieved in coordinating the many information streams, people, and knowledge that create sound business. The middle office is where businesses ultimately succeed or fail.

The audience for corporate portals is best defined by the role and function of knowledge workers in this middle-office space. Though front- and back-office functions have reached a stage of relative equilibrium and parity across most industries--thanks to extensive enterprise resource planning applications and structured transactions--middle-office workers live in a dynamic and unpredictable world. The payback for any application of technology here is measured in orders of magnitude.

In the middle office, corporate portals create a single point of access. They integrate within one interface the highly unstructured nature of knowledge-work with the wide variety of ERP, document, and customer-relationship management systems in use. It is an interface that will ultimately render obsolete the contemporary, window-based metaphors we use today.

1.3 Scope

This Corporate Portal Management System can be used in various scenarios like:

Knowledge Management Portals: Knowledge management software (KM Software) is a subset of corporate content management software and which contains a range of software that specializes in the way information is collected, stored and/or accessed

Customer portals: A customer portal is an extranet that is deployed by an organization in order to service their customers, showcase their company and its products, run customer support operations, etc.

Employee portals: An employee portal is an intranet run by an organization for their employees in order to let them exchange information with each other, access internal information, etc.

Online blogs: A blog is a personal journal published on the World Wide Web consisting of discrete entries typically displayed in reverse chronological order so the most recent post appears first. Blogs are usually the work of a single individual, occasionally of a small group.

1.4 Thesis Organization

Thesis is organized as follows. Chapter 1 gives a brief introduction to Corporate Portal Management System, the definition purpose and the scope of the system. In chapter 2 we discuss about the General constraints, Product Prospective and User characteristics etc. Later in chapter 3 we discuss about the functional requirements, Use cases and Triggers. Then in Chapter 4 i.e. Analysis models we discuss the work flow transitions, various use case scenarios and activity for different levels of users in a diagrammatic fashion. In Chapter 5 we give a brief note about the technologies used by us in developing the portal.

1.5 Conclusion

The conclusion here is that a Corporate Portal Management System can be a powerful and indispensable tool for any corporate environment. But due to the simplified and easy-to-understand nature of our project, it gives a chance to smaller organisations like online newsletters and online magazines to enjoy the varied benefits that are provided by such a system.

CHAPTER 2

GENERAL DESCRIPTION

Introduction

Product prospective

Product functions

User characteristics

General constraints

Conclusion

CHAPTER 2

General Description

2.1 Introduction

The portal manages to control the flow of the information according to the choice of recognized authorities by way of staged processing which is enabled through the workflow we have designed. The management system is robust and can be put to use in situations where it will be required to be accessed by multiple users simultaneously. The management system gives an all over ease in the working, managing and day-to-day functions of the portal in an easy way through an intuitive interface that makes it easy for everyone to utilize it fully and is virtually maintenance free.

The subsection 2.2 explains the product perspective, 2.3 explains the functions of the product. Section 2.4 explains the various types of user types and characteristics. Section 2.5 explains the constraints and requirements while section 2.6 concludes the chapter.

2.2 Product Perspective

Our Portal Management System dramatically simplifies the creation and management of portals. The focus of our software is on presenting documents and content in an effective manner to individuals, groups, customers, partners and vendors. Portal content, services and applications can be customized and personalized to the need of different users or user groups.

The payback for a knowledge-based organization using corporate portals can be summed up in one word: continuity. The challenge of knowledge work is not so much dealing with the pace of the work, but more important, dealing with the pace of knowledge workers. As workers move from task to task, job to job, and company to company, their basic work context travels with them.

Corporate portals capture the integral patterns of work in the form of a permanent personalized desktop. The process goes well beyond simply customizing the graphical presentation of information, as you would with a commercial portal such as Net-centre. What's needed is a capture of the relevancy inherent in the way an individual works with applications and information. An example is a self-service desktop that addresses the very individualized needs of knowledge workers, as opposed to a general-purpose desktop environment.

2.3 Product Functions

The basic and the most important function of the Corporate Portal Management System is the routing of data using the concept of workflow along with the various features like scheduling, commenting module and other similar features which make the software using service highly interactive and communicative. These features make the software highly attractive.

2.4 User Characteristics

The portal has two user types that can be assigned viz., Writer and Manager apart from the Super Administrator. Here is a summary of the permissions enjoyed by the different users:

Writer:

- The writer logs in through his account and gets and may create content by adding images or articles.
- The writer may send the content to any of the workflow states, i.e. 'ready for review' state or 'draft' state.
- Apart from the writer, the manager also has the authority to create content.

Manager:

- The manager supersedes the writer and cross checks the content created by the writer and sends the content to the required workflow state.
- The manager also has the authority to create content.

- The final articles published on the portal are done by the consent of the manager.
- The poll creation authority is with the manager.

Super-administrator:

- The super-administrator has the supreme authority.
- The super-administrator has all the powers of the writer along with all the powers of the manager.
- The page creation can only be done by the super-administrator.

The super-administrator has special access to the administrator section of the portal.

2.5 General Constraints

The general constraints identified in the system are of 2 types

a) Hardware Constraints b) software constraints

The Hardware constraints in the system are nothing but just 15 Megabytes of Disk space in the server. And the software constraints are as follows.

Some constraints identified are explained as follows:

Server side:

Web server: Apache 1.3, Apache 2.x, or Microsoft IIS

Database server: MySQL 4.1 or higher

Note: Microsoft SQL Server and Oracle are supported by an additional module

PHP: PHP 4.4.0 or higher (5.2 recommended)

Client side:

Any network enabled device able to connect to the server and running the supported browser.

Recommended Browsers

- Internet Explorer 7 and above
- Google Chrome
- Mozilla Firefox
- Opera

2.6 Conclusion

In this chapter, a basic introduction is given about the product. The functions to be carried out by the product are discussed. The various user types are also introduced and explained. The powers held by the users are also explained. The hardware and software constraints for the project have been explained.

Chapter 3

System Analysis

Introduction

Functional requirements

Use cases

Triggers

Conclusion

Chapter 3

System Analysis

3.1 Introduction

The corporate portal management system works on multiple factors and has got many features. These features increase the richness of the product. The product has got varied applications which are demonstrated by taking the use cases. The analysis of the project clearly highlights the features like workflow based operations, notifications, multilevel permissions etc.

The use case of a online magazine is considered and the management system is implemented in the portal to ease its functioning. The section 3.2 introduces the functional requirements and features. Section 3.3 contains the test use case of the management system in an online magazine. Section 3.4 discusses the triggers involved and gives an insight about their working while section 3.5 concludes the chapter.

3.2 Functional Requirements

Content publishing: The portal's foremost function is the publishing and therefore sharing of the information with the other users of the website. Since this is the major function of the website, our foremost priority is to make sure this functionality is not hindered in any way whatsoever.

Workflow based operation: To streamline the flow of content from creation to publication, we have designed a workflow for this purpose. The aim was to design a workflow that allowed for staged processing of the content and allowed for moderation of content by the management.

Workflow notifications: Whenever a manager's moderation is required to further the content from one workflow state to another, a notification should be sent to the manager intimating him of the status of the content and of the action required on his part. This notification system is realized using emails as the medium of sending notifications.

Multi-level permissions: To realize a portal incorporating such complex functionality, we need user levels with multiple permission levels. All users cannot be trusted and given all the permissions to configure the portal, determine the content for publishing and other administrative tasks. Hence a permission system that grants different sets of permissions to different groups of users is designed so as to give total control of the website to only a few trusted users and also giving all the permissions required for the other users to perform all the required functions.

Unified Login system: A unified login system that presents the same login form to all the users, irrespective of their access levels is designed so as to simplify the interface. A user, irrespective of his access levels, can login through the form and he will be automatically directed to a landing page that only displays the links to areas he has access to.

3.3 Use cases

3.3.1 Use Case 1:

Name of use case: Online magazine

Description: The corporate portal management system is used to create an online automobile magazine. The magazine is divided into various modules and different roles are assigned to various people, e.g. Writer, Manager, etc. The workflow used important in determining the proper flow of data. The portal also has added features like polls, images etc. along with administered comment system which make the portal a means of two way communication. The portal has also been added with multiple features like scheduling, triggers etc. which make the portal more robust and more reliable.

Preconditions: The system should have preinstalled web browser and should be connected to either the internet or any local area connection.

Normal Flow of events:

- 1] Creation → Draft / Ready for Review
- 2] Edits Required / Draft → Ready for Review
- 3] Ready for Review → Draft
- 4] Creation → Published
- 5] Ready for Review → edits required/ published

3.4 Triggers Used

Trigger 1

- Trigger 1: When *story* moves from *Publishing: (creation)* to *Publishing: Ready for review*

Action: Send e-mail to Manager upon Ready for review.

This trigger is part of the notification system and sends an email to the manager informing him when a *story* has moved to the *Ready for review* state.

Trigger 2

Trigger 2: When *story* moves from *Publishing: (creation)* to *Publishing: Edits required*

Action: Send e-mail to author on entering "sent for edits" state.

This trigger is part of the notification system and sends an email to the manager informing him when a *story* has moved to the *Ready for review* state.

Triggers 3-6

Trigger 3: When *story* moves from *Publishing: (creation)* to *Publishing: Published*

Trigger 4: When *story* moves from *Publishing: Draft* to *Publishing: Published*

Trigger 5: When *story* moves from *Publishing: Ready for review* to *Publishing: Published*

Trigger 6: When *story* moves from *Publishing: Edits required* to *Publishing: Published*

Action: Publish post and save post.

This trigger is part of the content publishing system that publishes content approved by the manager onto the frontend of the website.

Trigger 7

Trigger 7: When *story* moves from *Publishing: Edits required* to *Publishing: Ready for review*

Action: Send e-mail to Editor upon Ready for review.

This trigger is part of the notification system and sends an email to the manager informing him when a *story* has moved to the *Ready for review* state.

3.5 Conclusion

In this chapter, we discuss the multiple functional requirements that are required for the implementation of the project. It throws light on the salient features of the management system. It also describes one of the use cases. The triggers that are being used in the project have also been explained in detail.

CHAPTER 4

Analysis Models

Introduction

Work flow sequence

Work flow chart

Use case diagrams

Activity diagrams

Conclusion

Chapter 4

Analysis models

4.1 Introduction

In the chapter we describe the various scenarios of different levels of users using use case diagrams and activity diagrams. In the beginning of the chapter we define how the work flow sequence is used to make different transitions by users of various levels. Later we discuss the use cases and activities of the writer, manager and super administrator using diagrams and flow charts.

The section 4.2 describes the working sequence in terms of transition from one state to another and explains the workflow sequence. The transfer of content in between the states is explained in the section 4.3. Detailed use case diagrams are shown in the section 4.4 and detailed activity diagrams are shown in the section 4.5 before the conclusion in section 4.6.

4.2 Work flow sequence

Workflow sequence represents in a tabular way how the states of the content can be changed depending on the action on the content.

The table below explains the workflow transitions from one state to another. They define the movement of content from one state to another and one what basis the content created is moved from one state to another. The first step is the content creation. If the content is not fully ready he can save it, we can call this stage as a draft state. If the content is fully ready he can send it to the manager for review. This stage of the content can be called *Ready for review* state. This stage can be reached after a number of cycles of creation and draft stage. The writer can also edit the content which needs to be edited after the review of the manager. He has a list of comments using which he edits the content sent by the manager. And again he sends back to the manager for review and this cycle continues till the content state is published.

From		To
(creation)	→	Draft
(creation)	→	Ready for review
Draft	→	Ready for review
Edits required	→	Ready for review
Ready for review	→	Draft

Table 4.1 Workflow transitions: Writer

When the manager sends back the content to the writer to edit, the state of the content can be called Edits required.

The manager can create content and directly publish it to the portal. If he wants to edit the content later and then publish, he can put it in draft state.

From		To
(creation)	→	Published
Ready for review	→	Edits required
Ready for review	→	Published

Table 4.2 Workflow transitions: Manager

He can also check the content which is in ready for review state and see if it's correct and publish it to the portal. If the manager feels that the content is not completely correct he sends the content back to the writer with few comments for where he needs changes and puts it in edits required state.

4.3 Work Flow chart

The work flow diagram shown below is the crux of corporate portal management system. It determines the sequential flow of data from one state to another. Fig.4.1 shows the work flow diagram. As mentioned earlier, there are 3 basic users, the writer, manager and the super administrator. The content to be published on the portal goes through a proper pathway before being published onto the frontend. There are various states through which the content is passed before being published. The states are as follows-

- Draft
- Ready for Review
- Edits required
- Published



Figure 4.1 work flow chart

Draft – This is the content that is created by the writer, manager or the super administrator. This content is unedited and is unchecked. It is the basic article that undergoes a few phases of scrutiny before being published on the frontend.

Ready for Review – In this state, the article is to be reviewed by the concerned people. It is not necessary that only a draft can be reviewed. Any content can undergo multiple rounds of reviews, but it finally comes to the ready for review state before it goes to the review by the manager or the super administrator.

Edits required - This is the state when the article is not approved to be published on the frontend of the portal. The content that is being reviewed, if not approved for publishing, goes to the edits required state. Then the content is edited and again forwarded to the ready for review state for another review.

Published- This is the final state of any content. This is the final approved content that is put up on the portal. Any content that is to be published, when finally published on the frontend, goes via the published state. This is done by either the manager or the super administrator.

The whole procedure starts with the creation of the draft. The draft can be created by either of the writer, manager or the super administrator. The draft created is send to the ready for review state. The article can be approved either by the manager or the super administrator. If the draft of the content is approved, it moves from the ready for review state to published state, and the content is published on the frontend of the portal. If the article is not approved by the manger or the super administrator, the draft is moved to the edits required state. The draft then undergoes the required changes that can be done by either of the manager, writer or the super administrator. Then the edited draft is again sent from the edits required state to the ready for review state. Then the draft is reviewed again and so on. This is the cycle for the functioning of the corporate portal management system. It is a relatively simple but highly effective technique for the management of content on any portal.

4.4 USE CASE DIAGRAMS

Use case diagrams are a simple diagrammatic representation of a user's interactions with the system. It shows different types of users and various ways that these users can interact with the system.

4.4.1 Use case diagram: Write

Figure 4.2 shows the use case diagram for a writer. It shows all the possible ways in which a writer can use the portal.

Every user including the writer can read the content from the front end. The writer after logging into the system can write content he wants to post to the portal. If he thinks his work is complete then he can send it to the next state or can save it as a draft so that he can resume his work later. Once the writer is satisfied with his work he sends it to ready to review state making it available for the manager to review. Though he has put it in ready to review state he can edit the content and when the manager sees it he sees the final edited version and checks it for correctness.

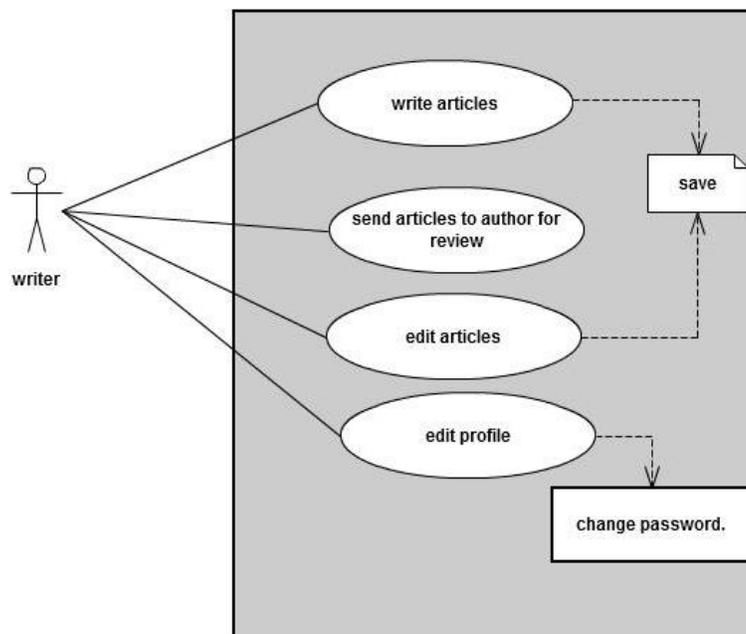


Figure 4.2 Use case diagram: writer

As mentioned before writer can always edit the content he has saved as a draft or sent to the review. He can also edit the content which has been put by the manager reviews required. This cycle goes on until the manager and writer is satisfied.

The writer has the flexibility to edit his profile. He can change his password and he can even change the e-mail he has been linked to with the portal. He can also change the name that has to be displayed.

4.4.2 Use case diagram: Manager

Figure 4.3 shows the use case diagram for a manager. The manager has superior rights over the writer. He can perform all the activities that a writer can do. He can write content. He can save the content which is not completely ready, for future review. In addition to this the manager has a power to review the articles written by the writer. Without the approval of the manager the content cannot go to the published state. The manager is responsible for an article to be published. He decides the time when the content has to be published on the portal and when the content has to be unpublished and removed from the portal. If the manager is not satisfied with the content he has been sent by the writer for review he can send it back to edits required state with some comments to writer

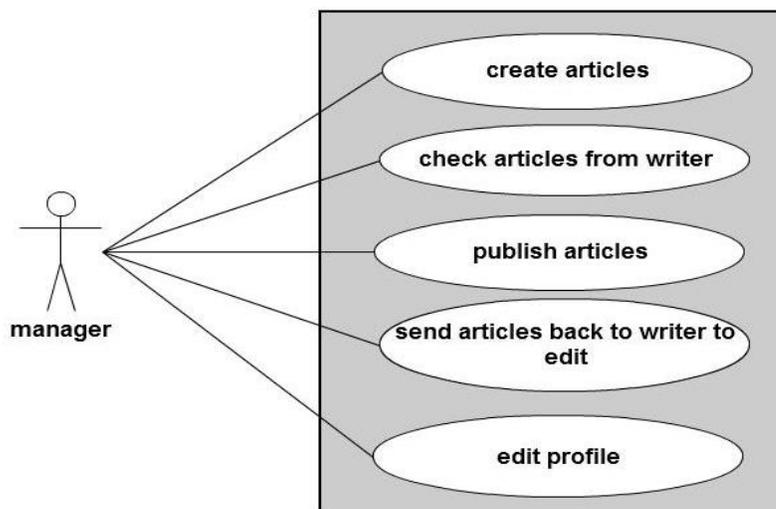


Figure 4.3 Use case diagram: Manager

The manager can also edit his profile like changing his display name, changing his password, changing the e-mail address he has been associated with.

4.4.3 Use case diagram: Super Administrator

Figure 4.4 shows the use case diagram for a super administrator. The super administrator has the supreme authority over the portal. He has all the powers of the writer and the manager. He can write and publish an article. In addition to this he can add new sections to the portal, delete unwanted sections. The super administrator also has the unique power to revoke the powers of other users. He can add or remove the users. The super administrator is responsible for the visuals of the portal. He can edit the visual modules to improve the look of the portal. He can also edit his profile like changing his name, changing password, changing e-mail.

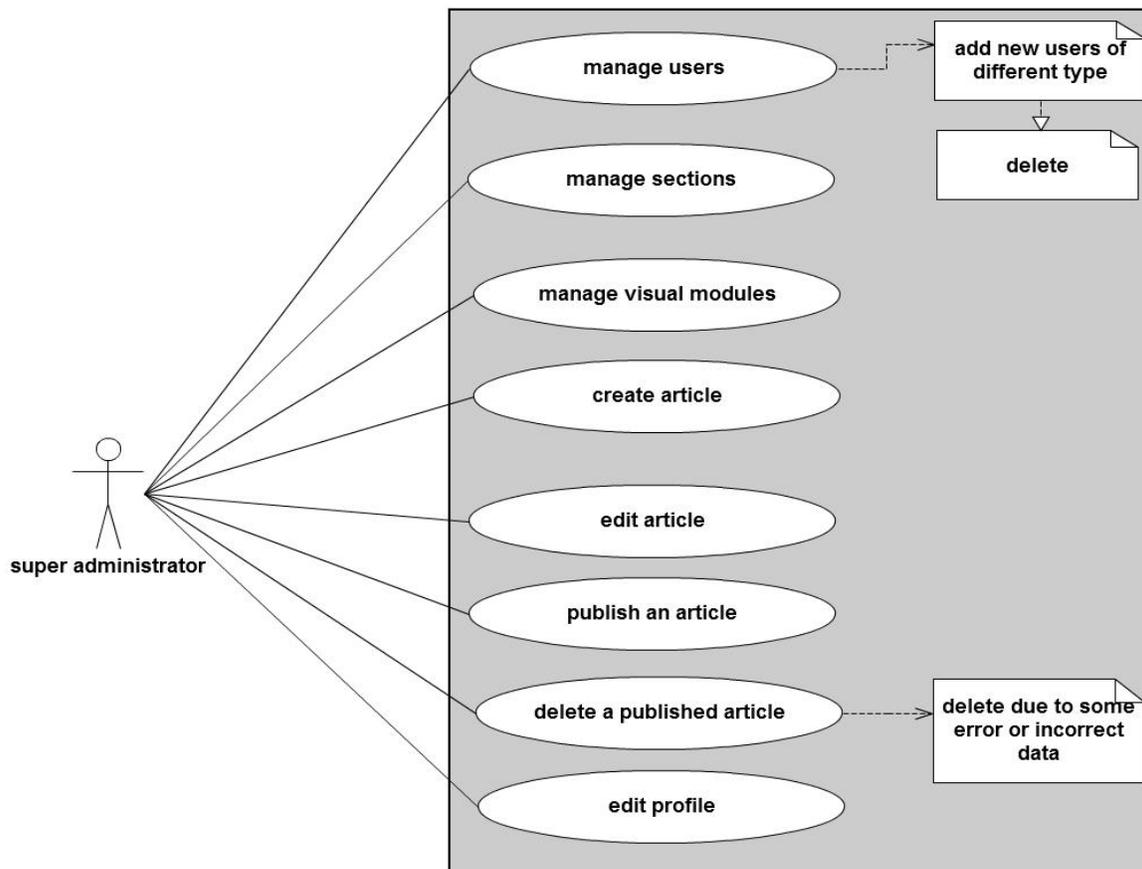


Figure 4.4 Use case diagram: Super Administrator

As mentioned before the super administrator has the unique power to add new users to the portal. The super administrator sends a mail to the user depending upon his user level with a login id and password to the mail he has to be linked with. The user logs in with this data and edits his profile to get started with. The super administrator has the right to set rights for a user.

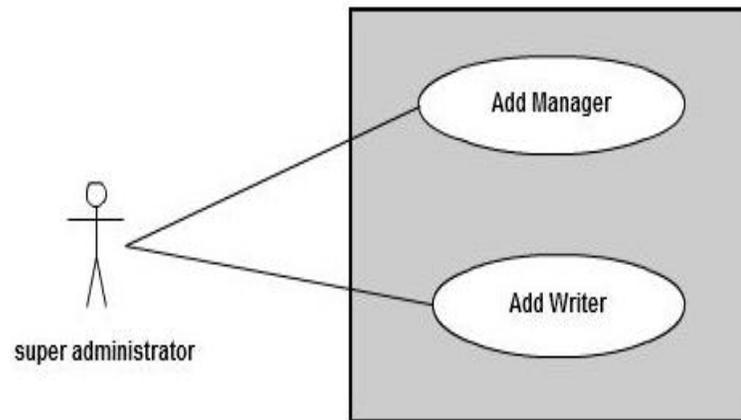


Figure 4.5 Use case diagram: Add New User

4.5 Activity Diagrams

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system.

4.5.1 Activity diagram: login

The figure 4.6 shows the activity diagram of the login session of portal. The login page is unified and is common for multiple users. There is no separate login for the various types of users. There is a common login page for all the three types of users, i.e. the writer, manager and the super administrator, apart from that of any user. All the various types of users are separated from each other with their ids.

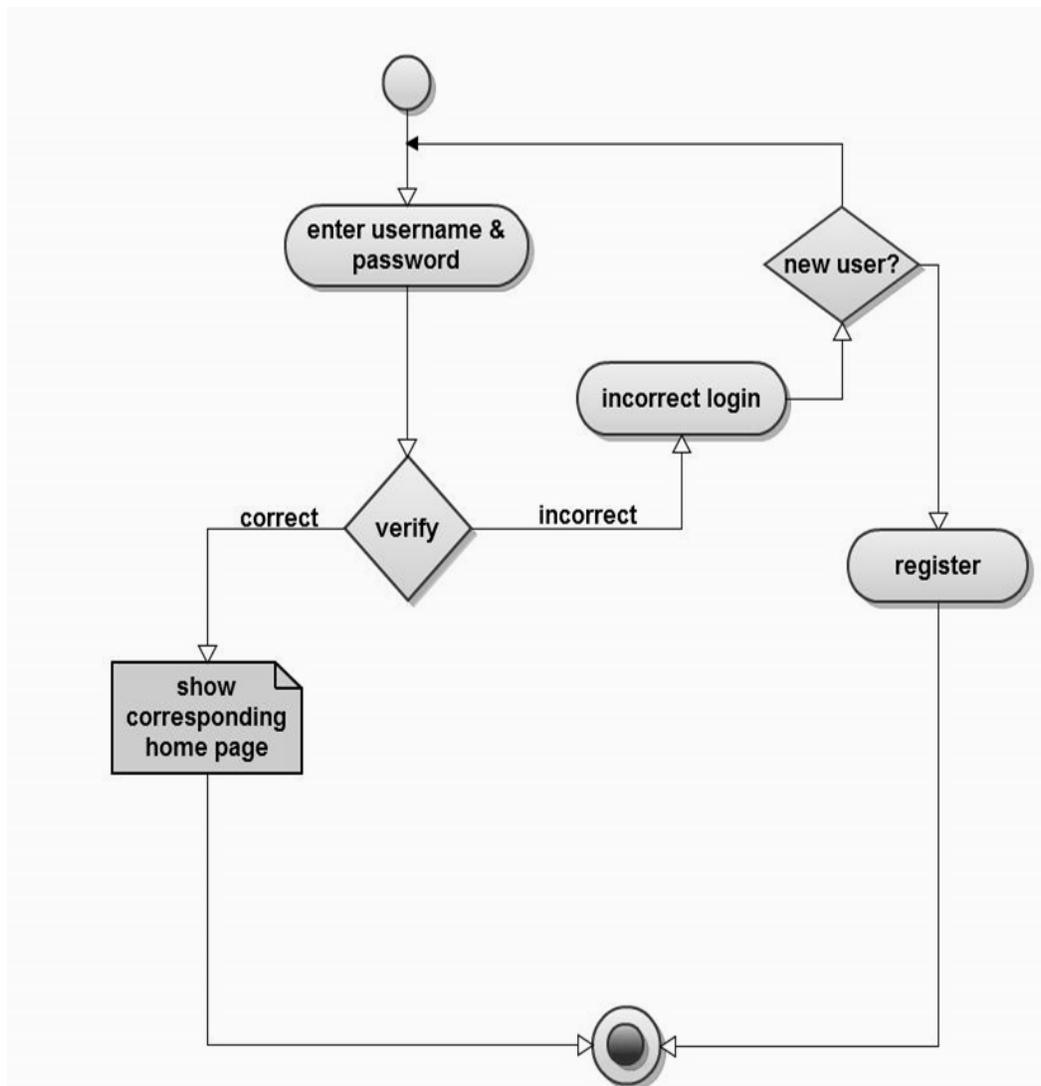


Figure 4.6 Activity Diagram: Login

In case if the user is a new user, the new user is registered to the system. The required information about the user is collected through the registration procedure and all the information is stored in the database. The data entries in the database can be manipulated later as per requirement of the user. After registration, the user is redirected to the respective page to which it has been registered for.

In case of an existing user, the login credentials entered by the user are matched with those that are stored in the central database of the system. In case of a match, the user is directed to the respective landing, i.e. the writer landing, the manager landing or the super administrative landing. The corresponding homepage that appears after a procedural proper login has the specific properties.

In case of an improper login, the message is displayed along with the option of a new user. If proper login id and password are entered again, the system logs into the respective home page of the user, else it repeats the cycle.

4.5.2 Activity Diagram Writer

The figure 4.7 shows the activity diagram of the writer. The writer login leads to all the options of that of the writer. Its basic function is that of content creation. The content need not be in text format but can be in the form of images etc. also. The process starts with the naming of the content to be published. Then the main content or the body of any article is added on. This content is added on with the help of any available tools available. The created articles are then saved and forwarded to the concerned authority for the review and approval. Any article created by the writer is added to the draft stage, which on further additions and deletions, is published. The next step is either to create another article or to logout.

In case if the article comes back from either of the manager, or the super administrator the required changes are done to the edit as per the requirement of the concerned personal and further changes are saved. The writer may create a new article or may logout of the page.

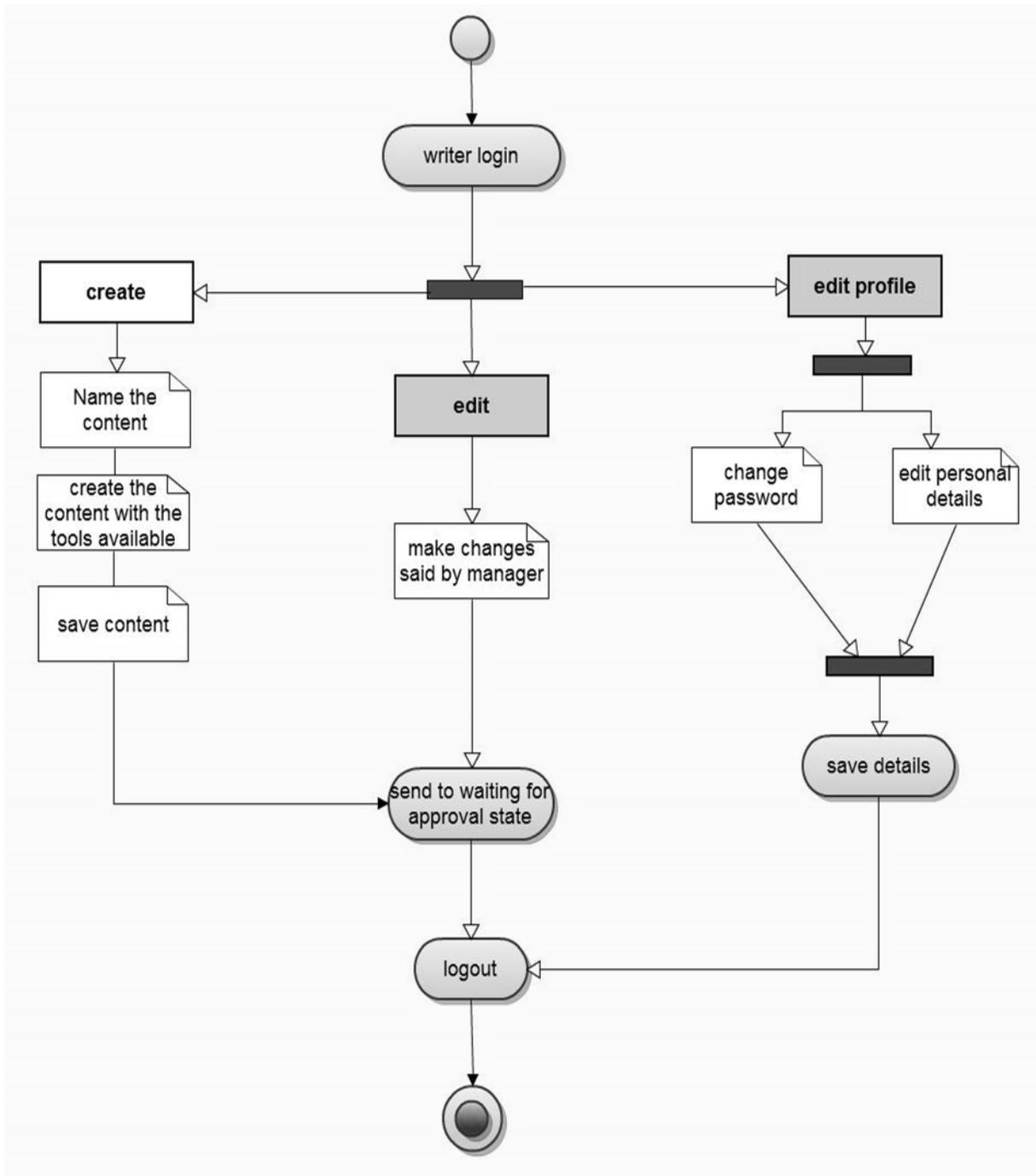


Figure 4.7 Activity diagram writer

Another basic change is that in the profile of the writer. The password and the other personal relevant details of the writer can be changed and edited as per his choice and the changed data is saved for future reference. The writer then either logs out or goes back to repeat the given set of steps.

4.5.3 Activity Diagram: Manager

The figure 4.8 shows the activity diagram of the manager. The manager landing consists of all the powers of that of the writer along with a few added powers of that of publishing an article on the portal. The content that is created by the writer can be published by the manager. If the article is approved by the manager, it is checked for the remaining errors and sent to the published state, leading to the publishing of the article on the frontend of the portal.

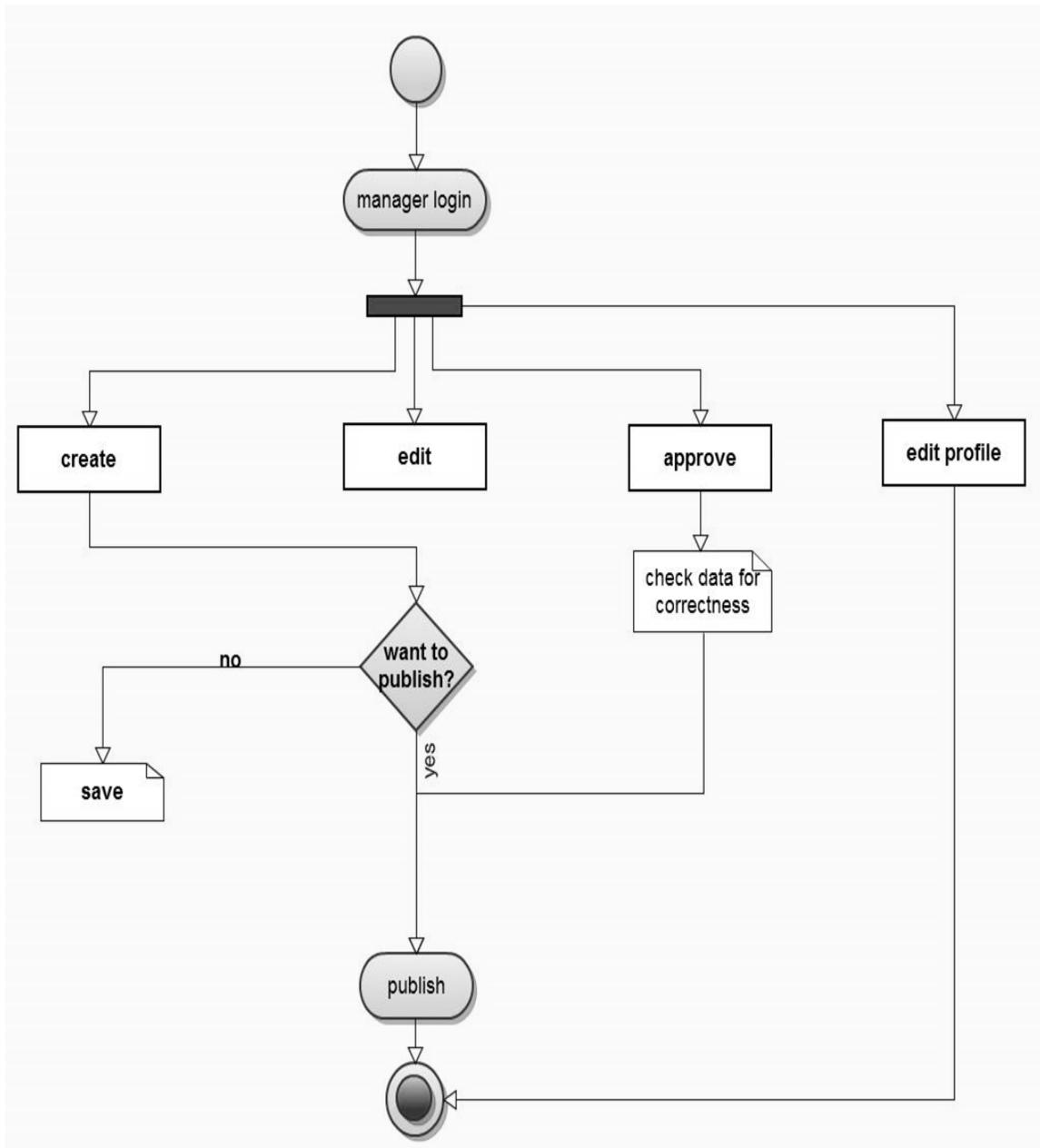


Figure 4.8 Activity diagram: Manager

In case if the article is not approved by the manager, the content created is edited as per the requirement and then published on the frontend. The editing can be done either by the manager or the writer himself.

The content created is sent back to the writer to be edited with the set of instructions. The triggers are continuously used to ease the flow of data. The notifications are sent to the various users when any articles shifts from one state to another. The date of publishing and removing of the article can be set by the manager.

Apart from that, the manager can also create articles which can be published on the frontend without any further checking. The manager can also edit his personal information like changing password, personal details etc. as and when required.

4.5.4 Activity Diagram: Super Administrator

The figure 4.9 shows the activity diagram of the super administrator. The super administrator has got the maximum powers of all the users. It has the more powers than that of the writer and the manager combined. Starting with the powers of the writer, the super administrator can create articles. He can also edit the articles that are already up on the frontend.

New articles can be created and published only at the will of the super administrator. The articles that are created by the manager and the writer can also be edited and published onto the frontend by the super administrator. The super administrator can also edit the saved content and along with that, he can also edit and save the content. The super administrators also have a lot of additional powers.

The super administrators handle the sections of the portal. They can add and edit the sections and subsections of the portal. The existing sections and the subsections of the portals can also be edited and deleted, if required, by the super administrator. The super administrators also handle and manage the users. They can create new users and delete existing users. The powers that are given to the various users are also decided by the super administrators. The super administrator also holds the power to edit the powers of the existing users.

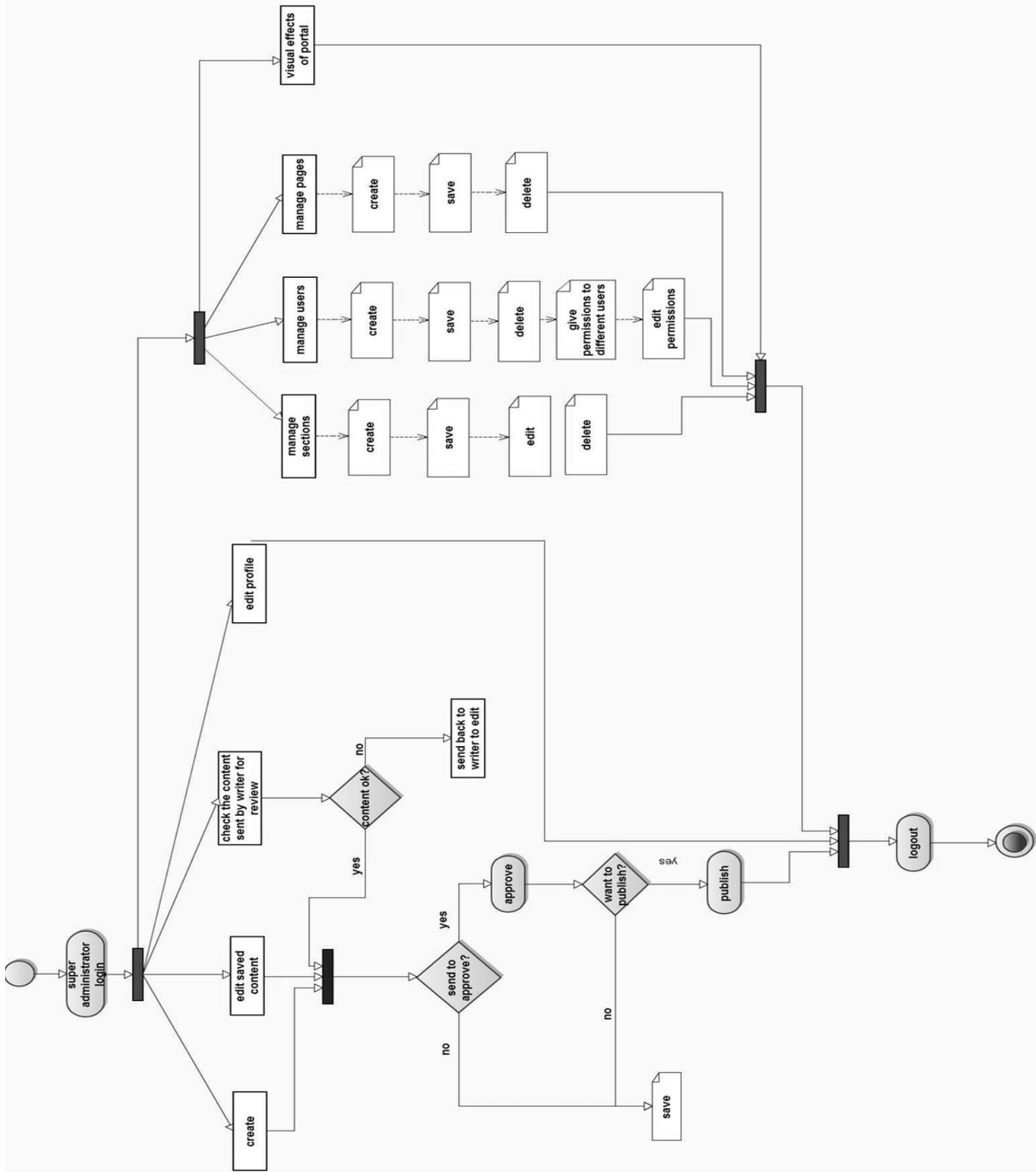


Figure 4.9 Activity diagram: Super Administrator

The management of the pages of the portal is also a function of the super administrator. The addition, deletion and editing of pages as per the requirement and timely change is all in the hands of the super administrator. The modeling of the pages and their looks is also decided upon by the super administrator. The small level details like the color scheme, theme etc. are also decided by the super administrator. The visual effects of the portal are managed and configured by the super administrator.

4.6 Conclusion

In this chapter, we discussed the working of the corporate portal management system. We explain the dataflow model and analyze the various activity diagrams and use case scenarios. The workflow sequence is properly checked in a step by step procedure leading to a clear understanding of the working of the corporate portal management system.

Chapter 5

Technologies Used

Introduction

Apache HTTP Server

PHP Scripting

My SQL

Drupal

Conclusion

Chapter 5

Technologies Used

5.1 Introduction

There are many technologies using which we can develop the corporate portal. But in this project we have selected particular technologies using which the efficiency of the portal can be improved. Drupal was particularly selected because it allows the developer to select various hierarchical levels of users and has the flexibility of deciding the rights of individual level of user very precisely. This chapter briefly puts light on the various technologies that have been used to develop the portal. 5.2 throws light on what Apache HTTP server is all about, unit 5.3 gives a brief description about PHP scripting which was used to give a good front end look to the portal. Unit 5.4 describes what MySQL is about. We used MySQL to manage the database. Finally in section 5.5 we describe about Drupal, which is the content management system which was used.

5.2 Apache HTTP Server

The Apache HTTP Server, commonly referred to as Apache is web server software notable for playing a key role in the initial growth of the World Wide Web. A web server can be referred to as either the hardware (the computer) or the software (the computer application) that helps to deliver content that can be accessed through the internet. Most people think a web server is just the hardware computer, but a web server is also referred to as the software computer application that is installed in the hardware computer. A web server is what makes it possible to be able to access content like web pages, or other data from anywhere as long as it is connected to the internet. The hardware part is what houses the content, while the software part is what makes the content accessible through the internet.

5.3 PHP Scripting

PHP: Hypertext Preprocessor is a widely used, general-purpose scripting language that was originally designed for web development to produce dynamic web pages. For this purpose, PHP code is embedded into the HTML source document and interpreted by a web server with a PHP processor module, which generates the web page document. As a general-purpose programming language, PHP code is processed by an interpreter application in command-line mode performing desired operating system operations and producing program output on its standard output channel. It may also function as a graphical application. PHP is available as a processor for most modern web servers and as a standalone interpreter on most operating systems and computing platforms.

5.4 MYSQL

MySQL is a relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases. The SQL phrase stands for Structured Query Language.

5.5 Drupal Content Management System

Drupal is a free and open source content management system (CMS) written in PHP and distributed under the GNU General Public License. It is used as a back-end system for over 1% of all websites worldwide ranging from personal blogs to corporate, political, and government sites including whitehouse.gov and data.gov.uk. It is also used for knowledge management and business collaboration.

The standard release of Drupal, known as Drupal core, contains basic features common to CMSs. These include user account registration and maintenance, menu management, RSS-feeds, page layout customization, and system administration. The Drupal core installation can be used as a brochure ware website, a single- or multi-user blog, an Internet forum, or a community website providing for user-generated content.

5.6 Conclusion

In this chapter, we discuss the various technologies that have been implemented for the creation of corporate portal management system. The technologies that were used in developing exclusively help in implementing the workflow and other qualities which make this particular design of portal management system unique.

Chapter 6

Conclusion and Future Enhancements

Conclusion

The corporate portal management system is a very effective and multifunctional tool which can be used to a great and extensive use. The extent of the software is massive and which can be tapped and used as per ones requirement.

The software is also highly scalable, both in content handling and user handling capabilities, as it is built on a robust core of Drupal which is used in around 10% of all the websites around the world.

The use of this software can result in a great reduction in the number of man hours spent in moderating the content on any portal. It also provides an easy to understand and intuitive interface for users which greatly helps in adapting to the use of this software.

The institute newsletter Monday Morning has built their new portal with an implementation of this workflow and has seen a substantial reduction in the workload of their editors and technical co-ordinators.

Future Enhancement

The portal can be further evolved and can be used for an even wider audience. The portal management system can be used for transfer of data in between multiple servers which could increase the functionality of the project substantially.

Dissemination

Awarded

The Institution of Engineers (India) has sanctioned Grant-in-Aid for the project “Corporate Portal Management System” for the year 2011-12

Awarded

IBM India University Relations has mentored the project “Corporate Portal Management System” under the IBM Remote Mentoring Program.

Bibliography

- [1] Boye, Janus. "Portal Software: Passing Fad or Real Value?". CMS Watch. January 18, 2005
- [2] Knorr, Eric. "The new enterprise portal". InfoWorld. January 9, 2004
- [3] Urbach, Nils. "An empirical investigation of employee portal success". Elsevier. November 19, 2009
- [4] Koulopoulos, Thomas. "Corporate Portals: Make Knowledge Accessible To All". InformationWeek. April 26, 1999
- [5] Lee, James; Brent Ware. "Open Source Web Development with LAMP: Using Linux, Apache, MySQL, Perl, and PHP". Addison Wesley. December 2002
- [6] KMWorld.. "100 Companies That Matter in Knowledge Management". 1 Mar 2006. KMWorld. March 1, 2006
- [7] Blood, Rebecca. "Weblogs: A History And Perspective".September 7, 2000
- [8] Drupal Documentation, Installation Guide, Administration Guide, Structure Guide, Site Building Guide and Theming Guide.