

SMART OFFICE SYSTEM

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Masters of Science in Computer Science and Engineering

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APPROVAL

This Project titled “**Smart Office system**”, submitted by **Kuntala Gope** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of M.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 31, March, 2018.

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I hereby declare that, this project has been done by us under the supervision of **Prof. Dr. Syed Akhter Hossain, Professor & Head, Department of CSE**, Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

At the modern age the main challenges is the maximum utilization of time. At our professional life we are engaged with official environment. We can do the maximum utilization of time by digitalize our systems. We can provide these supports from our online Smart Office system to the users. Here all users can manage their jobs, maintain their daily calendar, upload and share their necessary documents etc. Managers can distribute their tasks properly. It is easy to monitor and follow up the distributed tasks. Team members are able to update their real time working progress. They can also ask for help from co-workers and everything will be stored in database. Management can view every individual contribution of work and assess their performance. Management can integrate all bio-metric devices with the system. It will help to monitor all staffs attendance performance. To implement Online Smart Office system, exclusive & high pricing hardware and software system is not mandatory for the organizations. Computer system and internet connection is the only requirement. By a login system, Organizations can operate this system from everywhere through applications & centrally controlled database. It is a unique system that usually every operator can operate from everywhere by a valid internet operative system.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The title of the project is “Smart Office system” and named to “Active Boss”. This project will handle whole activities of an office. SOS offers the basic utilities that a corporate office wants to delicate its regular jobs. It generates capabilities to keep the database of tasks, document sharing, analytical job traceability and communications with all their required details. Different types of reports can be easily executed by SOS, which are required by them an during basic official operations to operate the office effectively. SOS tries to fulfill the common activities within an organization. Now a day’s job tracking is a basic need of an organization and SOS is providing this solution very effectively. It is very easy to use and more informative. Our file sharing solution is also an effective solution for an office. Users can share their file within whole office, department wise and also can archive important documents. It will help all documents from virus attack. Hope SOS system can give comfort to all users and help to manage office effectively. It will save time and give maximum benefits of time. Office automation relates to the different computer hardware and software used to digitally produce, accumulate, generate, govern, and transmit information required for executing basic activities. Rough data collect, electronic deliver, and the authority of electronic business information involves the core operations of an office automation system. it guides in assuring or automating modern office decorum.

1.2 Motivation

The customers exercise MS Excel, and sustain their data, yet it is not feasible them to share the records from compound system in multi user atmosphere, there is a lot of similar work, and speculation of errors. Regular updating of every single excel file is required when any changes are happen in the database. No option is left to track and print earlier recoded data. There is no assurance; anyone can operate any record and personal data. This Office Automation Management System is employed to master the total difficulties which they are confronting in recent time, and making fully transformation from manual to digital. The employee can comfortably pursue the time (and materials) they consumed on the job using the cellular (web) app by simply starting and stopping a timer. Here all users can manage their jobs, maintain their daily calendar, upload and

share their necessary documents etc. Managers can distribute their tasks properly. It is easy to monitor and follow up the distributed tasks. Team members are able to update their real time working progress. They can also ask for help from co-workers and everything will be stored in database.

1.2 Objectives

The overall aim of the project was to develop an Smart Office system which is applicable to all type of organizations and to improve the effectiveness of official activities according to demands of the knowledge based society. The specific objectives were: To provide a new management methodology for office, managers to improve their management skills and competences.

The mission and opportunity of Smart Office system is to register the contents of different activities of operators. It will ease the task and diminish the paper work. During accomplishment every user will be given actual preparation to adapt their requirements. Particular assist will also be served at actual points within the academic fiscal year. Day to day training will be given on regular basis and it will give the operator responsibility for the Office Automation Management System . The system is very user friendly and it is anticipated that functions of the system will be easily accessed by all kind of users such as administrator, managers, executives etc. The key objectives are:

- To manage every job effectively
- Use the maximum benefits of time
- To simplify operations and minimize computational errors
- To improve quality of output in terms of presentation and reduction in processing time
- Data management
- Planning of activities
- Dissemination of Information
- Easy Communication
- Office automation can get many tasks accomplished faster
- Less storage is required to store data.
- Multiple people can update data simultaneously in the event of changes in schedule

1.4 Features

- Job Tracking System
- Meeting Management System
- Daily Work Log
- Memo/Notes
- Calendar
- Movement Register
- File Sharing System
- Archives Documents
- Video Gallery
- Email System
- SMS System

CHAPTER 2

BACKGROUND

2.1 Background

At our busy society we are very much busy with our official job. Lot of activities we have to do within a short time, we need to communicate with others such as colleagues, suppliers, service holders etc. for information sharing. Managers need to monitor and follow-up team members activities. As well as document storing, document sharing and archiving is also an important part of an organization. To maintain all of these activities, an organization needs a big IT setup with costly hardware resources, reliable networking system, skilled IT people etc. They need to spend a lot of money to manage everything. To solve all of these problems we have decided that we will reduce the complexity within an office by making a system that will be very easy to use and it will also be a business viable product. And this is the main thinking behind the system being developed. This is a web application where every member communicates with each other, work together in a single common platform where conversations can be well knitted & well connected. Unknown office members of remote teams can be jointly work together and their sharing, communicative feeling is awesome.

2.2 Related Work

A web application typically contains some modules and those are connected with each other to share every data uniquely, and have some other coherent method of navigation. The most important web application has some features that help people to make their regular works easier. To manage an office many office management web applications are available in the world. Some are used for job tracking system, some are used for project management system, and some are used for communication. But there is no common platform to manage whole office in the world.

Different teams with common requirements like resource, application & services can be built together with Slack. People all over the globe access Slack to make a common platform for every team's work place. This is a web application where every member communicates with each other, work together in a single common platform where conversations can be well knitted & well connected. It has meeting management facilities that help an organization to manage every meeting. Slack can make a researching data-storage of each team's communications, verdict, and

effort to create more accessible with machine readable and sharing knowledge with each other.

Limitations: Slack has some limitations also. User cannot get all facilities that are needed within an office to perform daily activities. There is no suitable file sharing features are available in Slack. There is no medium to connect the biometric machine with the system. Some other features also absent in Slack.

2.3 Comparative Studies

Frames are the main reasons for disturbance with web connectivity, proprietorship, exploration, and printing and browser rankings. Now they are not as used as in the 90s.. Both SSIs and frames offer a lot of resources which introduces on many pages, such as page exploration or page headings, to be repeated without corresponding with the same HTML in many files. The W3C and Frames are advised to alter in 2000, the <object> tag, also offers some resources to remain in one area while other resource can be navigated using common scrollbars. Upgraded CSS and JavaScript client-side methods can also be stored with all of these goals.

While making a web application, it is mandatory to declare it adapts to the WWW Consortium (W3C) standards for HTML & XML, CSS and other same platform. The W3C orthodox is in place to define all search engine which ensure to their class can show corresponding content without any distinctive reflection for copyright perception methods. A well decorated web application is going to be executable to many various search engine old as well as new alike, show tenacity, as well as those audiences with acoustic or visional impairments.

2.4 Scope of the Problem

Normally, Web pages are very dynamic in today's world. They are vigorous, which is produced from the server-side when asked to do so, and then serve the end user. A fixed link and a fixed address are not generally associated with these types of Web pages. Today, it is used in much common web application like online shopping, outsourcing even on Wikipedia. This procedure is executed to minimize the amount of fixed pages instead of depository with similar info in the database pages. Many browsers may have problems in identifying web pages and dynamic web pages, so it can shoe fixed pages in those cases.

The problem currently facing many organizations is the management of jobs. Proper job creation,

project management, job distribution and job monitoring is the biggest challenge of the managers. This is so complex task to manage it within a standard way. During implementation of the project we have to face the problem that users are not ready to use the system or the organization is not ready to run the system. Another problem we may face that users are not ready for the system. Either they cannot familiar with the web application system or they have not available resource to operate it.

Finally, office automation system is generally very costly in first time investing in software and hardware. Old aged as well as less-skilled workers faces many difficulties to handle and operate this modern technique instead of old manual methods. Proper training and counseling activities can be helpful to reduce these problems. But it is costly and time time-consuming. There must left an alternative option to execute the system with old manual methods when the power supply or electricity is cut off or interrupted.

2.5 Challenges

The big challenge of the system is to provide data security. Now a days data centers are the first choice oh hackers. Always they try to hack important data and damage it. So data security is the biggest challenge of the system. It can be slow while data volume will increase. To develop the system we have chosen PHP programming language in order to be available resource and easy to manage. But this is a scripting language and it is slower than other programming language. This project is user friendly with suitable operating system. The programming language can be changeable and it has a open source relating to the actual need of any professional firms or organizations. Other disadvantage of this system is its lack of limit of accessibility and accountability to a few employee to a free version. This issue can be solved by providing more upgraded version where users find many more facilities to negate the “free and open source” solution you were looking for. So, as long as an organization falls at or below 20 employees, it can be a fit for you as free. Finally the summary of challenges is

1. Integration with existing systems and tools is too difficult
2. Data security is too tough job
3. Manual systems are not well defined or mature enough for automation
4. Too complicated to implement and expensive
5. Automation makes us lose control over processes

6. Automation will eliminate IT jobs

CHAPTER 3

REQUIREMENTS SPECIFICATION

3.1 Business Process Modeling

The study scope of this paper is Smart Office system. With the help of information technology, we reviewed the situation of organization to considered organization's culture and analyze SWOT (Strength, Weakness, Opportunity, and Threat) of organization. I have visited different type of organization to understand their business processes and summarize some features. The initial concurrence was achieved through continuously interviews, communication and discussion. My main concentration was on three imperative factors: cost, time, and quality, I have integrated on the system. In addition, using electronic mails to transmit letters or messages, synchronous management of groups' calendar, and using distributive database management process are all the ways to let different users share information. We applied a process tree to describe the project features.

- ✓ Attendance
- ✓ Product service
- ✓ Project/Service
- ✓ Blog
- ✓ Video Gallery
- ✓ Email Service
- ✓ Calendar
- ✓ SMS Service
- ✓ Appraisal
- ✓ File server
- ✓ Analytical
- ✓ Notice board
- ✓ Project Mgt.
- ✓ Meeting Mgt.
- ✓ Job Mgt.

3.2 Requirement Collection and Analysis

This chapter shows a full description of the system and its customer. After fix idea the most important objective, requirement analysis was adopted using different tools such as sequence diagram and activity diagram, use-case diagram,. Then it is the functional and non-functional properties that have been using several methods from, interview and e-surveys, brainstorming,

Smart Office system (SOS) is a system are serving to all the employees are working within an organization. This Web application electronically work where of a system, the idea of this project enable the employees it manage their jobs, scheduling, email, daily activities etc.

3.2.1 Scope of Works

The original objective of the Smart Office system is keep information or control all employees work schedule. Individual office authority is able to get any kind of information instantly and accurately by using this system. Regarding these information the sub-scopes in this system are defined as below

3.2.1.1 Scopes

- Dash Board
- Job tracking System
- Movement Register
- Meeting Management
- File Sharing
- Post Public Message
- Memo/Notes
- Daily Work Log
- Calendar
- Job Responsibility
- SMS System
- Email System

3.2.1.2 Details of sub-scopes

Details of these sub-scopes are described in bellow

1) Dash Board

- i) Common notice board for public message posting
- ii) Profile picture
- iii) Login time
- iv) Total late summary
- v) Average working time on current month
- vi) Link for viewing total attendance summary
- vii) New job request counter
- viii) New comments counter
- ix) SMS sending link
- x) Department Member List
- xi) Job related member list
- xii) To-Do List
- xiii) Doing List
- xiv) Flagged Task List
- xv) Personal archive files with search panel
- xvi) Public shared files with search panel
- xvii) Departmental shared files with search panel

2) Job tracking System

- i) Request for job
 - (a) Assign to single person
 - (b) Assign to group of peoples, one will be the responsible person.
 - (c) Anyone can job request to others
 - (d) Before request a job check job responsibility
 - (e) Job request can be project base
 - (f) It will take start date and end date
 - (g) Sender can attach file with the task job request
- ii) View Job
 - (a) Jobs comes to TO-DO list first

- (b) When assigned person start the job it will go to the Doing list.
- (c) Assigned person can add additional people with the task
- (d) Related persons can comment under the job
- (e) Related person can share file with comments

3) Movement Register

- i) Moving employee will auto selected from login
- ii) Move time require
- iii) Back time require
- iv) Select authentic purpose from company predefined list
- v) Describe about purpose

4) Meeting Management

- i) Meeting topic write-up
- ii) Meeting venue selection
- iii) Project selection if necessary
- iv) Department selection
- v) Meeting agenda list
- vi) Meeting Participants
- vii) Meeting closing summary with activities
- viii) Assign task to related persons from meeting summary

5) File Sharing

- i) File Title
- ii) Select file
- iii) Select sharing type (Public Share, Private Archive, and Departmental Share)
- iv) Multiple file uploading facility

6) Post Public Message

- i) Message Text
- ii) Uploading system for attachment

7) Memo/Notes

- i) Write note
- ii) Add new notes with existing one.
- iii) Every notes has updated time
- iv) Multiple notes can be added

- v) Collapse can be on/off
- 8) Daily Work Log
 - i) Write task detail
 - ii) Perform date
 - iii) Duration of work to be done
 - iv) Data grid for previous record
 - v) User can update previous records
- 9) Calendar
 - i) Set Calendar
 - (a) Write tasks
 - (b) Set start date and time
 - (c) Add task to the TO-DO list automatically
 - ii) Daily List
 - (a) Check everyday list
 - (b) Update check list using tick mark after work done
 - iii) Calendar Summary
 - (a) Check calendar summary by given date range
 - (b) Reschedule task if necessary
- 10) Job Responsibility
 - i) Enter core jobs
 - ii) Enter extended job what is performed by user randomly
 - iii) Check co-worker responsibilities before assign a job
- 11) SMS System
 - i) Individual SMS
 - (a) Search employee
 - (b) Select contact number
 - (c) Write text and send
 - ii) Group SMS
 - (a) Select group
 - (b) Write text and send
- 12) Email System
 - i) Rich Text entry screen

- ii) File uploading system for attachment
- iii) Send email

3.2.1.3 Input Forms

- Status
- Job Posting
- View Job
- Daily Work Log
- File Uploading
- Public Message Post
- Movement Register
- Video Gallery
- Memo/Notes
- Calendar
- Friendly Management
- Email
- SMS
- Job Description
- Meeting Agenda

3.2.1.4 Reports

- Dali List
- Calendar Summary
- Work Report for management
- Meeting Agenda
- Meeting Minutes
- Movement Register

3.2.2 System Requirement

Before produce any web application, it is important to show the structure, design and all properties intended. Requirements are the necessary attributes in the system, a statement that identifies a capability, characteristic or quality factor of the system in order to have and usefulness to the users. Once the demand is set, fabricator scan start the other system work which include design system, update, tryout, execution, and performances. In additional, how users will connect with every page and icon and how the software should work (behavior, load time etc.).

3.2.3 Functional Requirement

Admin

- produce, edit and remove employee account
- produce, edit and remove all department information
- produce, edit and remove designation information
- Post public notice, message to wall
- Manage video contents for employees
- Change user information

Other Users

- Search individual job responsibility
- Job request to others
- Post public message
- Store and share files
- Send email and SMS
- Keep daily working records
- Keep analytical records
- Keep movement track
- Keep meeting information

3.2.4 Non-Functional Requirement

Security

The software has accounts for its follower and only spatial users can use the software with username and password. The passwords are code using a PHP function md5().

Performance

Very easy following of information and renovating can be done.

Availability

The software are ready to users ever, anywhere, just take a PC and network. Also this system effort in many web browsers.

User Friendly

SOS has a cordial user bond and the software very communal

3.3 Use Case Modeling and Description

This part contains the use case of Smart Office system

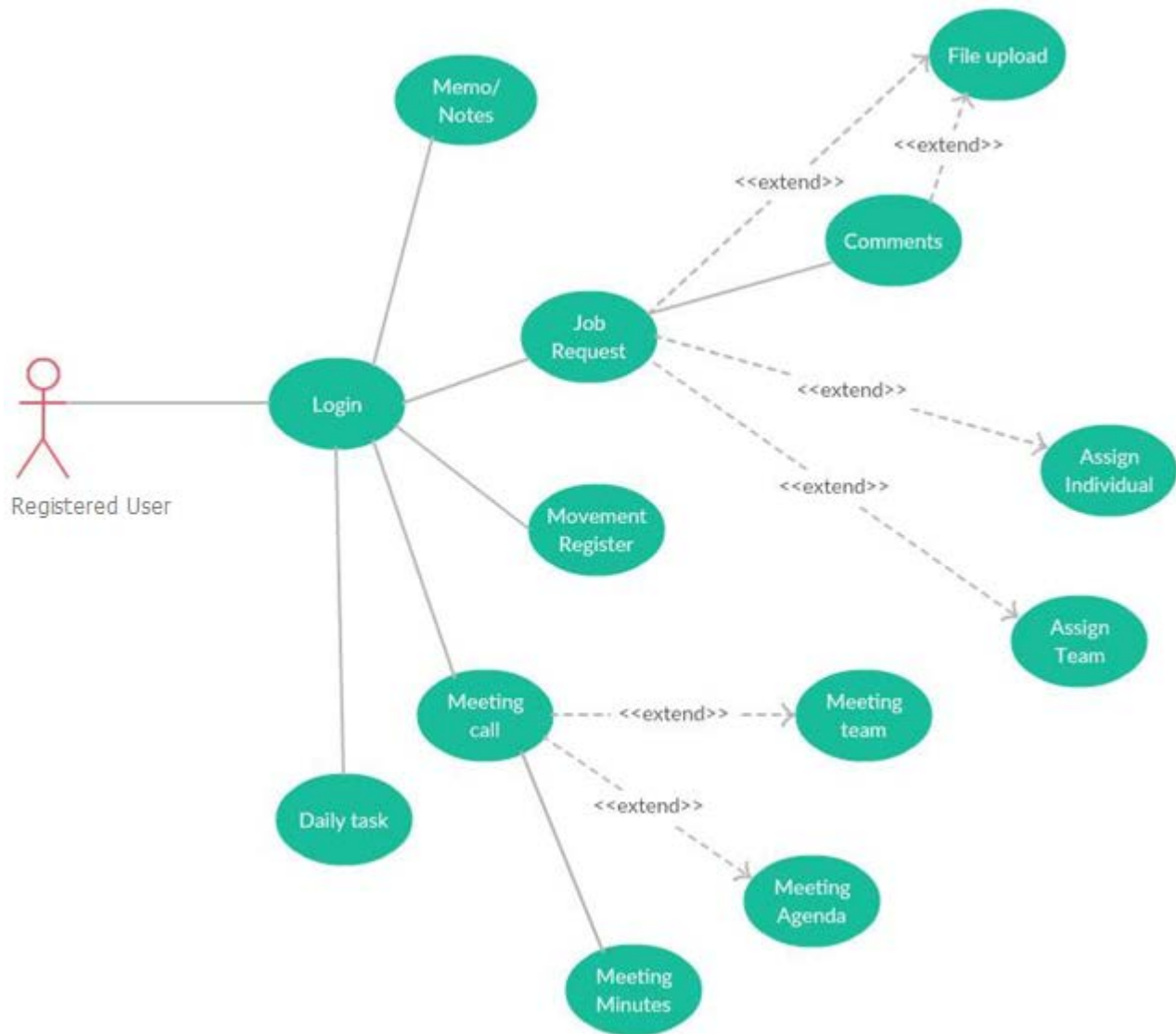


Fig: 3.2 Use-Case Diagrams

3.4 Use-Case Detail

Brief Description

This is use-case of Smart Office system. Here lots of functionalities are shows bellow

Actors

Registered Office Staffs

Preconditions

1. Need Internet Connection
2. Need computing system such as Desktop, Laptop, Mobile, TAB etc.
3. Active User

Basic Flow of Events

1. The user will post public message. It can be notice, important alert, gratings etc.
2. The user will send job request to other colleague.
3. The user will check employee job responsibilities before sending a job request.
4. The user will view incoming job
5. The user will update working progress status
6. The user will share files with others
7. The user will archive files
8. The user will send email
9. The user will send SMS
10. The user will set calendar
11. The user will update calendar by checking
12. The user will keep daily working log
13. The user will keep analytical data as note.

Alternative Flows (In case of any error)

1. Log out from system when tries by wrong username and password
2. Contact with administrator

Key Scenarios (Common Problems)

1. Internet connection down
2. Server down
3. Wrong username and password

Post-conditions (Actions After completion of the use case)

1. Send confirmation SMS to user
2. Send confirmation Email to user

3.5 Programming Tool

The software are progress using web development skill. The following resources are used to develop it. The resources are:

Programming Language: PHP 5

Visualization: HTML 5/CSS

Scripting: Javascript, JQuery 1.9

Database: MySql 5.5

IDE: AdobiDreamwaver CS5

Software Architecture: MVC

3.6 Design Phase

Throughout the plan phase, the correlation between classes was plan and inspect using the class diagram. Next decorate the mapping of the data the database schema was progress.

3.7 Class Diagram

To decorate the correlation and source code turn on among classes, class diagram was update. In this factor, the class defines the rool and variables of object, which is a fix entity in a project or the unit of code showing that.

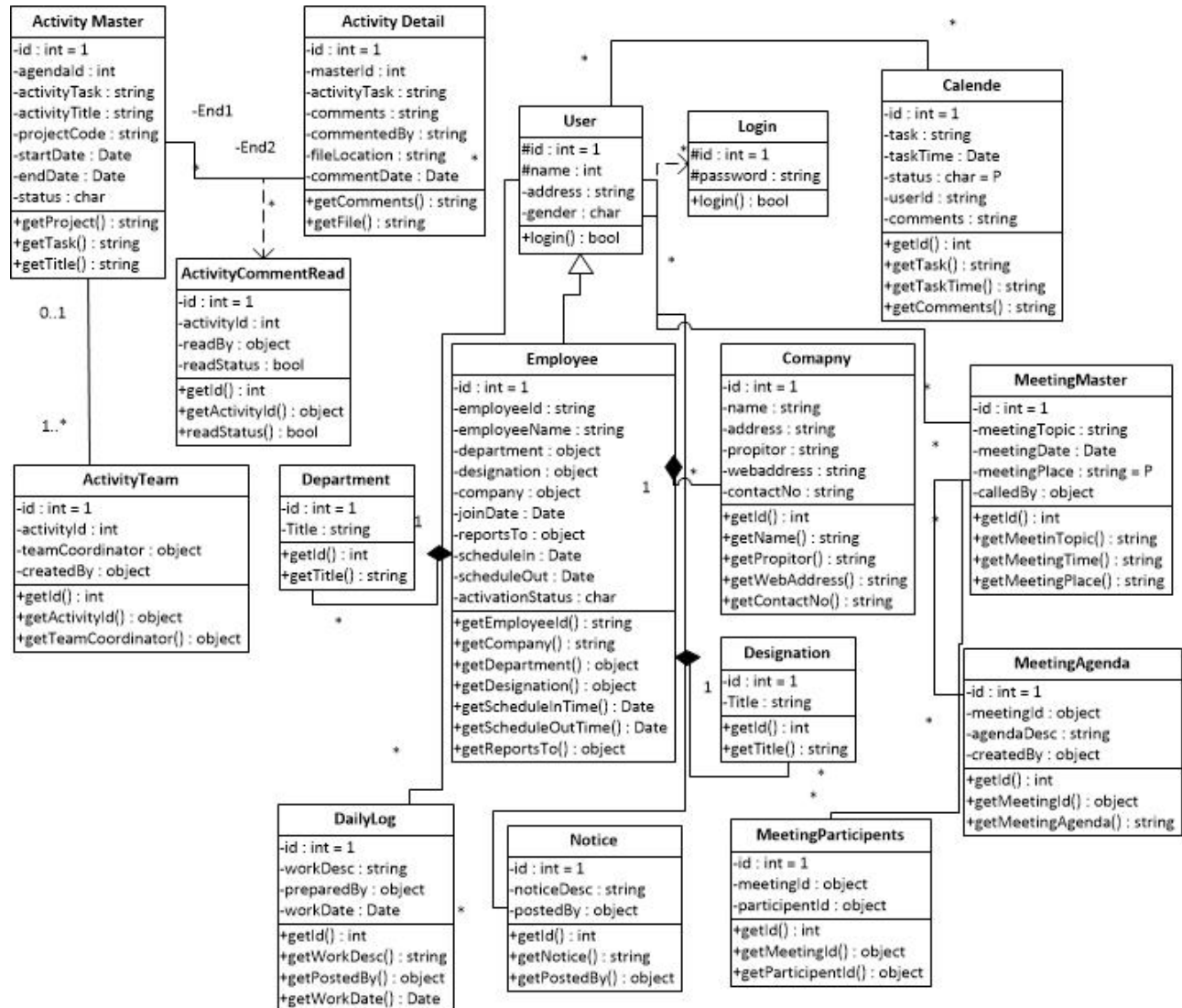


Fig: 3.3 Class Diagram

3.8 Database Design

A database is easily an arranged selection of same data, typically restored on disk, and reachable by perhaps many simultaneous users. Databases are originally unrelated into solicitation areas. For example, database may carry HR (employee and payroll) data; other may carry sales data; another may involve accounting information; and etc. Databases are control by a data base management system.

3.8.1 Database Knowledge

Most businesses Microsoft Access make lage use of Microsoft Excel and to control data. These are strong and effectual tools that divide data that these implement were not planned to address.

Excel and Access are planned for one customer use to entire paper. The a second worker try to use the same paper, a message “Open for Read-Only?” pops up. The link of this information is to sure information integrity is control. A business doesn’t have to create more before these messages from a mere irritation to a full problem. this is more worldly, is designed to resolve. It sways use at the save level - such as a one row within a paper.

A secondly it is often copy several times in many document. Over time these document involve into many update versions because they are not all new as the underlying information changes. . Similarly, when a last-time adaptation is unevenly use, it control to many revenue graphs being offer for the similar time.

3.8.2 Table/Entity

In relational databases, and flat file databases, a table is a set of data elements (values) using a model of vertical columns (identifiable by name) and horizontal rows, the cell being the unit where a row and column intersect. A table has a specified number of columns, but can have any number of rows.

3.8.3 Keys

Keys are very important part of Relational database. They are used to establish and identify relation between tables. They also ensure that each record within a table can be uniquely identified by combination of one or more fields within a table ^[1].

3.8.4 Normalization

Normalization is the process of making a database fit “good database design” rules. We talk about normalization in terms of “normal forms” (NF). The normal forms are cumulative, i.e. for a database to be in 2NF (second normal form), it must also meet the requirements of 1NF.

The normal forms are defined as follows:

1. First normal form (1NF) sets the very basic rules for an organized database:

- a. Eliminate duplicative columns from the same table.
- b. Create separate tables for each group of related data and identify each row with a unique column or set of columns (the primary key).

2. Second normal form (2NF) further addresses the concept of removing duplicative data:

- a. Remove subsets of data that apply to multiple rows of a table and place them in separate tables.
- b. Create relationships between these new tables and their predecessors through the use of foreign keys.

3. Third normal form (3NF) goes one large step further:

- a. Remove columns that are not dependent upon the primary key.

4. Finally, fourth normal form (4NF) has one requirement:

A relation is in 4NF if it has no multi-valued dependencies ^[2]

3.8.5 Database Model Diagram

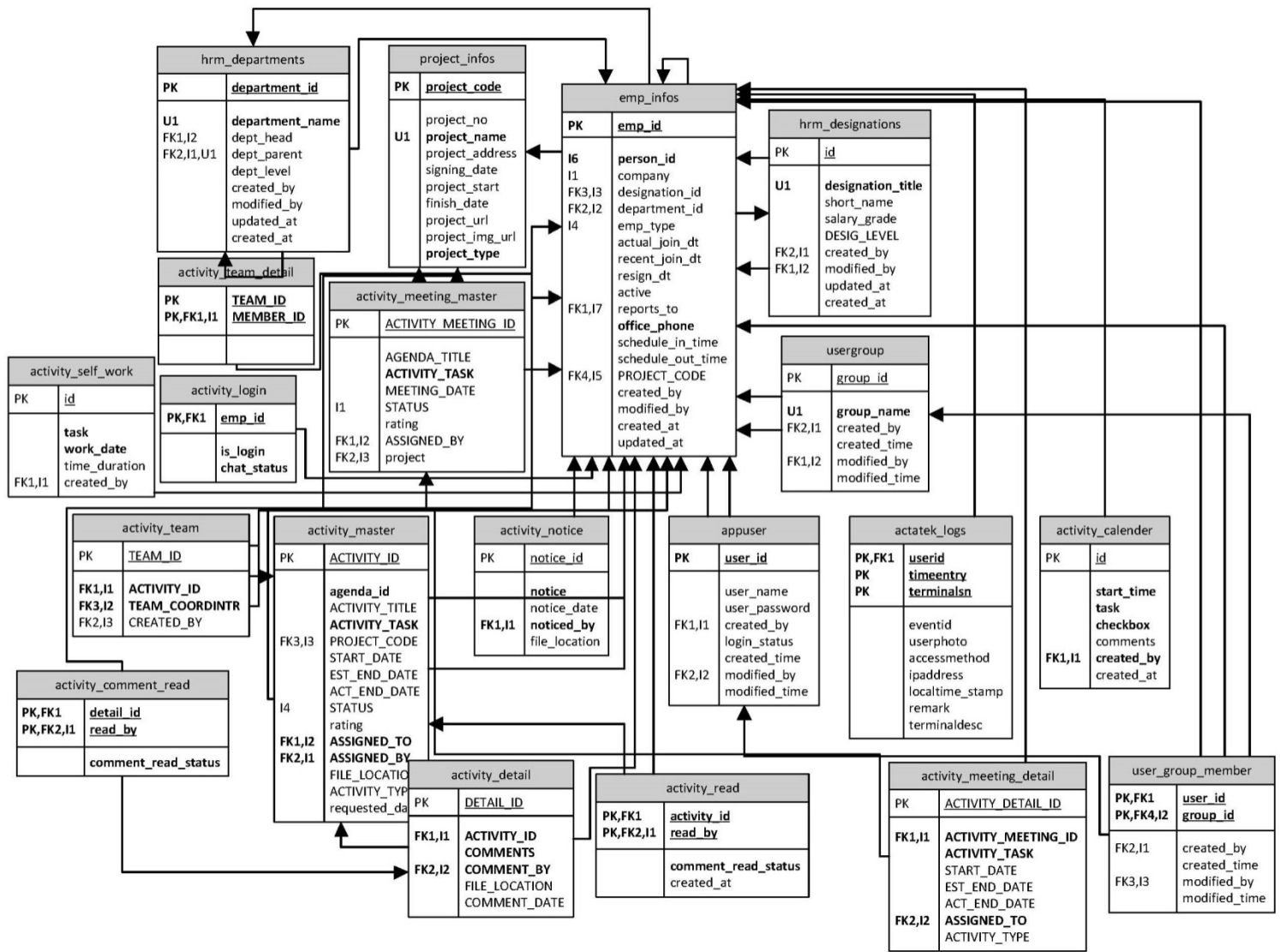


Fig: 3.4 Database Model

CHAPTER 4

SYSTEM DEVELOPMENT PROCESS

4.1 Introduction

A computer system means an automated data-processing system that uses a programmable electronic device to store, retrieve, and process data. This system consists of a set of hardware and software components which processes data in a meaningful way. Here I am discussing about the software. The topics are:

- Software
- Steps of a software development process.

4.2 Software

Software is a component of a computer system that has no physical shape but works together as a heart (life) with the physical hardware system. If we consider humans survive body and a dead body, what is the difference between them? The difference is that the survive body can do everything (i.e. moving, walking, talking, thinking etc.) but the dead body cannot do anything. So the question is what is making this difference? The answer is life. The source of power to doing something by the physical body is Life. Similarly software is the life of computer. Sometimes one can say electricity. But it is wrong because electricity is like human blood. This software projects are responsible for controlling, integrating, and managing the individual activities within an office. This Software project is created with programming languages for example PHP and JAVASCRIPT and related utilities Database connector mysql and oracle. Good software project must be based on good architecture, design and methodology which I have maintained. Knowledge is important for the software to be usable and intuitive.

We have used Agile methodology for development

4.3 Agile

Agile software development describes a set of values and principles for software development under which requirements and solutions evolve through the collaborative effort of self-organizing cross-functional teams. It advocates adaptive planning, evolutionary development, early delivery, and continuous improvement, and it encourages rapid and flexible response to change. These principles support the definition and continuing evolution of many software development methods.

The term agile (sometimes written Agile) was popularized by the Manifesto for agile software development, which defines those values and principles. Agile software development frameworks continue to evolve, two of the most widely used being Scrum and Kanban.

4.4 The Manifesto for Agile Software Development

Based on their combined experience of developing software and helping others do that, the seventeen signatories to the manifesto proclaimed that they value:

- Individuals and Interactions over processes and tools
- Working Software over comprehensive documentation
- Customer Collaboration over contract negotiation
- Responding to Change over following a plan

That is, while there is value in the items on the right, they value the items on the left more

4.5 Agile software development principles

Principles of Agile Software Development

The Manifesto for Agile Software Development is based on twelve principles

- a) Customer satisfaction by early and continuous delivery of valuable software
- b) Welcome changing requirements, even in late development
- c) Working software is delivered frequently (weeks rather than months)
- d) Close, daily cooperation between business people and developers
- e) Projects are built around motivated individuals, who should be trusted
- f) Face-to-face conversation is the best form of communication (co-location)
- g) Working software is the primary measure of progress

- h) Sustainable development, able to maintain a constant pace
- i) Continuous attention to technical excellence and good design
- j) Simplicity the art of maximizing the amount of work not done is essential
- k) Best architectures, requirements, and designs emerge from self-organizing teams
- l) The team reflects on how to become more effective and adjusts accordingly ^[3].

4.6 Steps are followed to develop the Software Project

4.6.1 Communication

Communication is the initial part for a software builder. By collaborating user and end-user business elements for the program are select in the company. Here software builder and customer should to maintain a better communication. If the communication processes are not satisfied the requirements will not fulfill and something must be go-back. It is harmful to build a software project for the company. Because after finishing it will see that software runs but it does not give the appropriate output.

Some principals we have to follow to communicate with the customer:

- Listening: We should to focus on the speaker's words, rather than formulating our response to those words. And also try to ask for clarification if something is unclear.
- Preparing before our communication: We need to spend time to understand the problem before meet with others.
- Someone should facilitate the activity: Every communication meeting should have a leader to keep the conversation moving in a productive direction.
- Face to face communication
- Striving for collaboration: Collaboration and consensus occur when the collective knowledge of members of the team is combined to describe product or system functions or features.

- Taking notes and document and document decision: Someone should to participate in the communication should serve as a recorder and write down all important points and decisions.

4.6.2 Requirements Analysis

Extracting the requirements of a desired software product, this company is also performed task in creating software. While customers probably believe they know what the software is to do, it may require skill and experience in software engineering to recognize incomplete, ambiguous or contradictory requirements. The requirements analysis should begin with business or organizational requirements and translate those into project requirements. If meeting stated requirements will be unreasonably costly, or take too long, the project requirements may have to be negotiated down, down-scoped or down-sized, in discussions with customers or sponsors. It will be risked for the company. The requirements should be documented, actionable, measurable, testable, traceable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design ^[4]

Any discussion of requirements analysis methods will quickly become specific to the type of project effort. Many industry areas have specific, proven techniques for obtaining thorough and accurate definition of requirements. Sometimes it is useful to write a draft user's manual as a way to define requirements. While the methods may differ, the principles remain the same across all types and sizes of projects. The requirements analysis should cover the whole scope of the project.

It is easy to leave scope out of a requirements analysis or to omit necessary clarity or detail thereby making the requirements definition ambiguous. The completed requirements analysis should be reviewed and approved by the customer or project sponsor before work continues. On large projects, the first formal design review is actually a requirements review. By summarizing the basic points we get:

- Examine the Business Need or Opportunity
- Write a Clear Statement of Project Objectives
- Know the Difference Between Wants and Needs
- Negotiate the Requirements Definition Interactively with the Customer
- Conduct a Thorough and Comprehensive Analysis

- Document the Results Unambiguously in Sufficient Detail
- Put the Requirements Document under Version Control

4.6.3 Specification

Specification is the mission of stipulating the software to be written, in a mathematically accurate way. In reality, most successful specifications are written to understand and fine-tune applications that where already well-developed. So specifications are most important for external interfaces that must remain stable.

4.6.4 Design and Architecture

The most creative and challenging phase is software design. Design and architecture refer to determine how software is to function is a general way without being involved in detail. The term “design” describes a final system and the process by which is developed. It refers to the technical specifications that will be applied in implementing the software.

I determine the system components covering the requirements and the way these components will work together. The software architecture design is logically divided into two parts in the company:

General design: The general design consists of the structural design, development strategy, and system design documentation. Working out the general design, developers break the target system into high-level components and describe them in the context of the whole system.
Detailed design: When it comes to the detailed design, specification and documentation on each component are developed.

4.6.5 Coding

Coding is less important part from Design and Architecture. In this software company, Programmer or coder just follow the software design rule and algorithm and then writes program using a programming language PHP and Java script.

The coding principles of the project are:

- Coder should to understand the problem that are going to solve
- Should understand basic design principles and concepts.
- Should to pick a programming language that meets the needs of the software to be built and the environment in which it will operate.
- Should to select a programming environment that provides tools that make his work easier
- Should to create a set of unit test will be applied once the component they code is completed.
- Should to constrain their algorithms by following structured programming practice.
- Should to select data structures that will meet the needs of the design.
- Should to understand the software architecture and create interface that are consistent with it.
- Should to keep conditional logic as simple as possible.
- Should to create nested loops in a way that makes them easily testable.
- Should to select meaningful variable names and follow other local coding standards.
- Should to write code that is self-documenting
- Should to create a visual layout that aids understanding
- Should to conduct a code walkthrough when appropriate.
- Should to perform unit test and correct errors you have uncovered.

4.6.6 Testing

Testing is a set of activities that can be planned in advance and conducted systematically. Software testing also provides an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation. Test techniques include, but are not limited to, the process of executing a program or application with the intent of finding software bugs ^[5]

A number of software testing strategies have been used to develop the project. All provide the software developer with a template for testing and all have the following generic characteristics:

- To perform effective testing a software team should conduct effective formal technical review. By doing this, many errors will be eliminated before testing commences.

- Testing begins at the component level and works outward toward the integration of the entire computer based system.
- Different testing techniques are appropriate at different points in time.
- Testing is conducted by the developer of the software and an independent test group.
- Testing and debugging are different activities, but debugging must be accommodated in any testing strategy.

A strategy for software testing must accommodate low-level tests that are necessary to verify that small source code segment has been correctly implemented as well as high level tests that validate major system functions against customer requirements. A strategy must provide guidance for the practitioner and a set of milestones for the manager of the company. Because the steps of the steps of the test strategy occur at a time when deadline pressure begins to rise, progress must be measurable and problems must surface as early as possible.

Test strategies for Conventional Software are:

- Unit
- Integration
- Regression

System testing consists of the:

- Recovery
- Security
- Performance

Validation Testing consists of the following testing:

- Validation Testing

Alpha and Beta Testing

4.6.7 Documentation

paper is an important task to update project. The purpose of paper the privet design of project helps save and enhance for next time using. paper is most important.

The originally is that update system finally result in update work. A progress process produces highly work products that show the detail of the program design at each level in the progress life. Then possible, paper should be generate using automation tools

Project quality, testing, and take caring are increase by having batter paper for requirements, architecture, interfaces, detailed work, commented code, and good test faithful. Requirements documentation practices should facilitate our user understanding

4.6.8 Maintenance

Project are maintain this system.

Maintenance Processes are:

Process models

- Process implementation tasks
 - o Develop maintenance plans and procedures
 - o Establish procedures for modification requests
 - o Implement the CM (configuration management) process
- Problem and modification tasks
 - o Perform initial analysis
 - o Verify the problem
 - o Develop options for implementing the modification
 - o Document the results
 - o Obtain approval for modification option
- Modification implementation task
 - o Perform detailed analysis
 - o Develop, code, and test the modification
- Maintenance Review/Acceptance tasks
 - o Conduct reviews
 - o Obtain approval for modification
- Migration tasks
 - o Develop a migration plan

- o Notify users of migration plan
 - o Conduct parallel operations
 - o Notify user that migration has started
 - o Conduct post-operation review
 - o Ensure that old data is accessible
- Software retirement tasks
 - o Develop a retirement plan
 - o Notify users of retirement plan
 - o Conduct parallel operations
 - o Notify user that retirement has started
 - o Ensure that old data is accessible
- take care activities
- Unique activities
- Supporting work
- system management
- Quality
- Maintenance starting activity
 - o idea
 - system
 - Tailoring of the post delivery process
 - Designation of take care
 - Estimate of life cycle costs
 - o Planning

4.6.9 Problems/limitation of developing a software system

Many persons work in many software companies on producing software systems to automated our working system and satisfy our needs.

The important problems encountered in update of bid project systems were:

- Correctness
- Efficiency
- Mastery of complexity

- Interface specification
- Reliability
- Flexibility
- Documentation
- Maintainability
- Project organization.

Insufficient theoretical foundation and too few methodological aids were known in both the technical and the organizational realm.

CHAPTER 5

PROJECT FUNCTIONALITIES

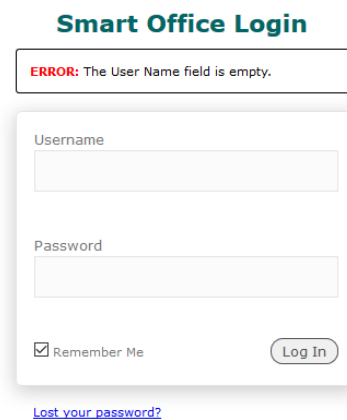
5.1 Introduction

This chapter shows all functionalities with screen shoot. Users also get operational instruction from here. All user interface is good looking and easy to use. It looks alike facebook and this will help to user to quick familiar with these.

5.2 Open the Login Page

Open your web browser (i.e. Firefox, Internet Explorer), then type

<http://hostinurl/activity/home.php> on your address bar and then press enter. The following window appears.



The image shows a web form titled "Smart Office Login". At the top, there is a red error message: "ERROR: The User Name field is empty." Below this, the form contains two input fields: "Username" and "Password". The "Username" field is currently empty. Below the "Password" field, there is a checkbox labeled "Remember Me" which is checked, and a "Log In" button. At the bottom of the form, there is a link that says "Lost your password?".

Fig: 5.1 Login Page

Enter User ID to the **User Name** field and password to the **password** field. Click on the **Login** button. After verification, the following Daily Activity **Home** window appears:

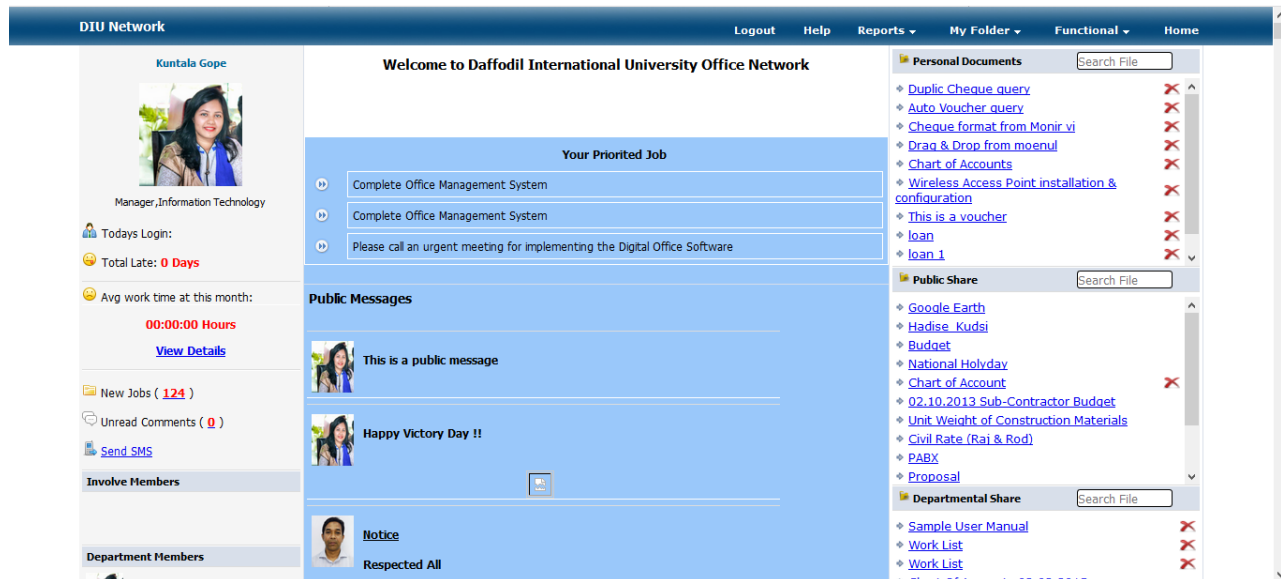


Fig: 5.2 Home Page

The top menus are: Home, Functional, My Folder, Reports and Logout.

5.3 Functional Process

User can find all official functionalities from Functional Menu. The processes are shown in bellow.

5.3.1 Job Request

To call or request for a job the user have to press Functional>Job Request on menu bar like following.

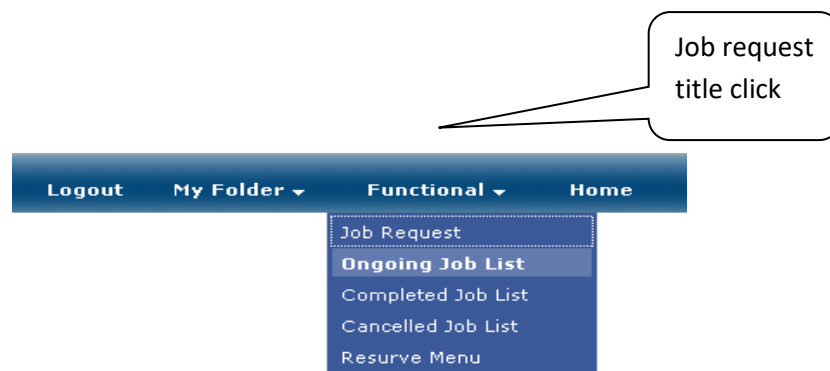
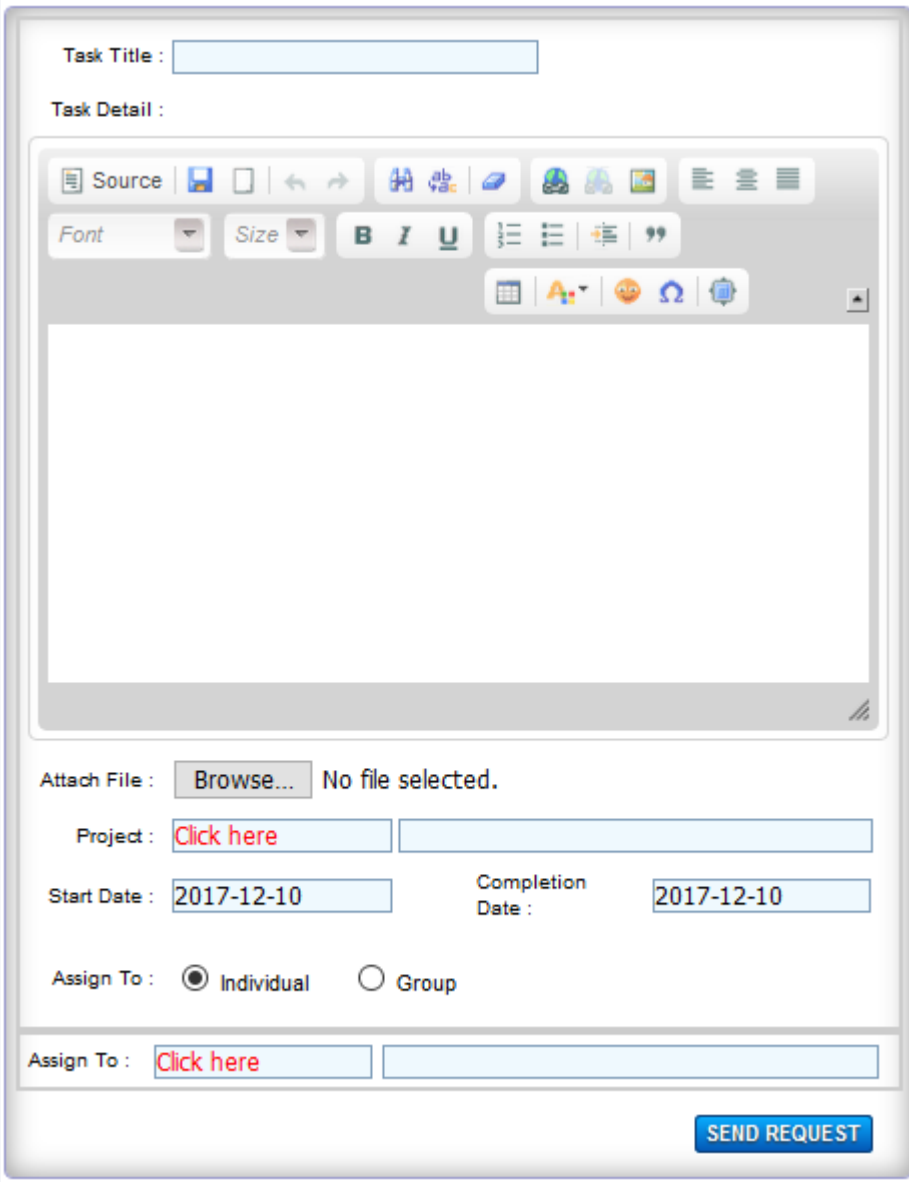


Fig: 5.3 Functional Menu

After clicking the menu the window will appear like following:



The screenshot shows a web-based form titled "Job Request Form". At the top, there is a "Task Title" field. Below it is a "Task Detail" section containing a rich text editor with a toolbar featuring icons for source, undo, redo, bold, italic, underline, font color, background color, bulleted list, numbered list, link, and unlink. The editor has a large white text area. Below the editor, there is an "Attach File" section with a "Browse..." button and the text "No file selected.". The "Project" field has a "Click here" link. The "Start Date" is set to "2017-12-10" and the "Completion Date" is also set to "2017-12-10". The "Assign To" section has two radio buttons: "Individual" (selected) and "Group". Below this, there is another "Assign To" field with a "Click here" link. At the bottom right, there is a blue "SEND REQUEST" button.

Fig: 5.4 Job Request Form

Steps to fill the job request:

1. Task: Write details of your task here.
2. Project : Click on [click here] to select a project. After clicking on the [click here]the following window will open to select project

Attach File : No file selected.

Project :

Start Date : Completion Date :

Assign To :

Assign To :

Calendar (Dec 2017):

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Fig: 5.6 Calendar on Job Request Form

3. End Date: End Date also pick from the calendar as like start date.
4. Assign to: If the job assign to a single person then click on assign to text box and the following window will appear

Task Title :

Task Detail :

Employee List

Search:

Employee ID	Name	Designation
1000001	REZAUL HOQUE SIRAJEE	Director Finance
1000002	NAZMUL HAQUE KHAN	Managing Director
1000003	MUHAMMAD ABIDUR RAHMAN	Chairman
1000009	Mr. Provuthen Baroi	Assistant Manager
1000012	Md. Nurul Afsar	Office Attendant
1000045	Wahidul Islam Khan	Assistant Manager
1000051	Mohd. Rajib Ahsan	Deputy Manager
1000055	Engr. Md. Shah Jahan	Assistant General Manager

Fig: 5.7 Employee List on Job Request Form

Just select the name and click done.

5. Assign to : If the job assign to a group, than first click on group option and the following window will appear

Attach File : No file selected.

Project :

Start Date : Completion Date :

Assign To : ☐ Individual ☒ Group

Department List	Member List
☐ Select All	☐ Select All
☐ Accounts	☒ REZAUL HOQUE SIRAJEE Director Finance
☒ Architectural	☒ NAZMUL HAQUE KHAN Managing Director
☒ Audit	☒ MUHAMMAD ABIDUR RAHMAN Chairman
☐ Audit to Construction	☐ Md. Kamrul Ahsan Sr. Manager
☒ Board of Directors	☐ Md. Sanwoar Rahman Executive
☐ Budget	☐ Md. Asadullah Arefin Sr. Executive
☐ Business Process Automation	☐ Ahmed Jamal Assistant
☐ Cash	

Team Coordinator :

Fig: 5.8 Multiple Employee on Job Request Form

Check mark the assigned department(s) for the job then check mark the employee name, after

That selects the team leader and click on send request to complete the job request.

5.3.2 Ongoing Job List

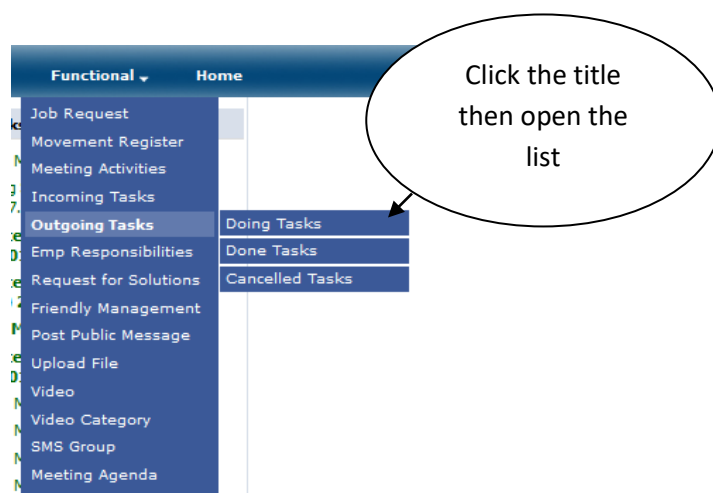


Fig: 5.9 On Going job List Menu

5.3.3 Unread job tasks

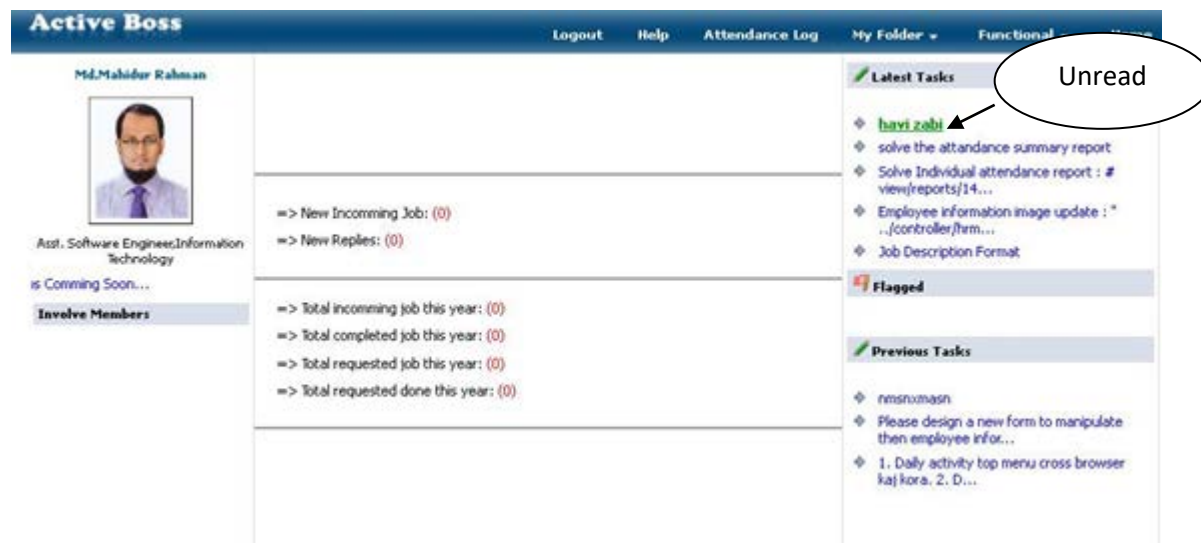


Fig: 5.10 Unread Task

Double click the unread task then open it.

5.3.4 Answer to the job request

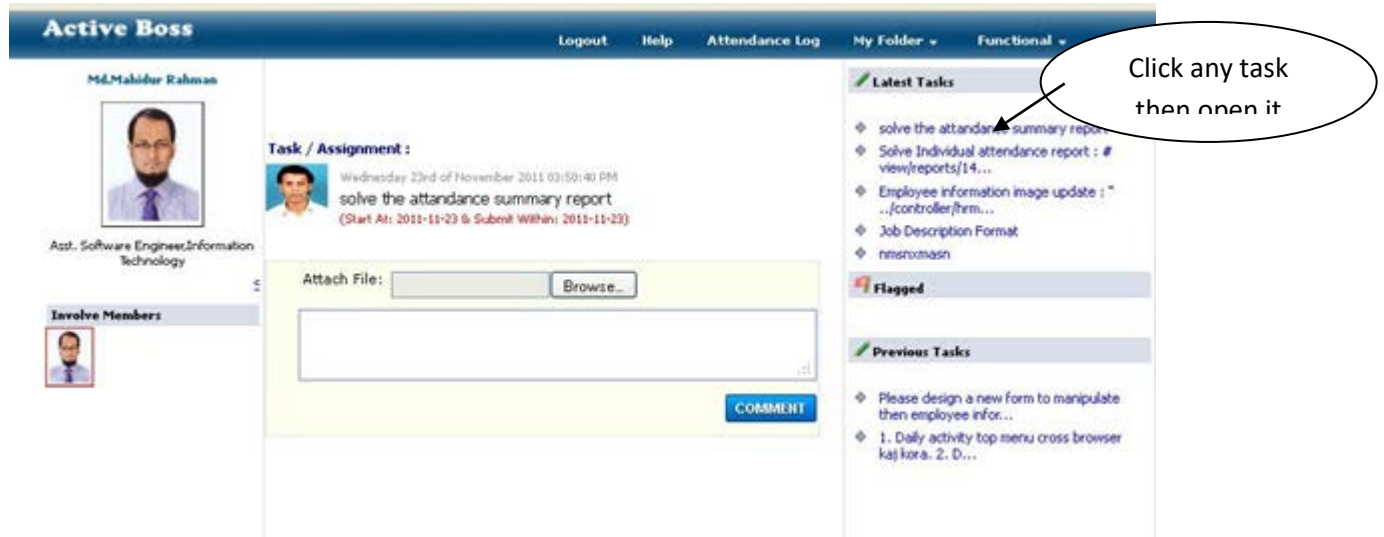


Fig: 5.11 Comment Against Job

Write answer in the text box then press comment button.

5.3.5 Employee Responsibility



Fig: 512 Employee Responsibility Form

5.3.6 Request for solution

To open **Request for Solution** page, Functional => Request for Solution

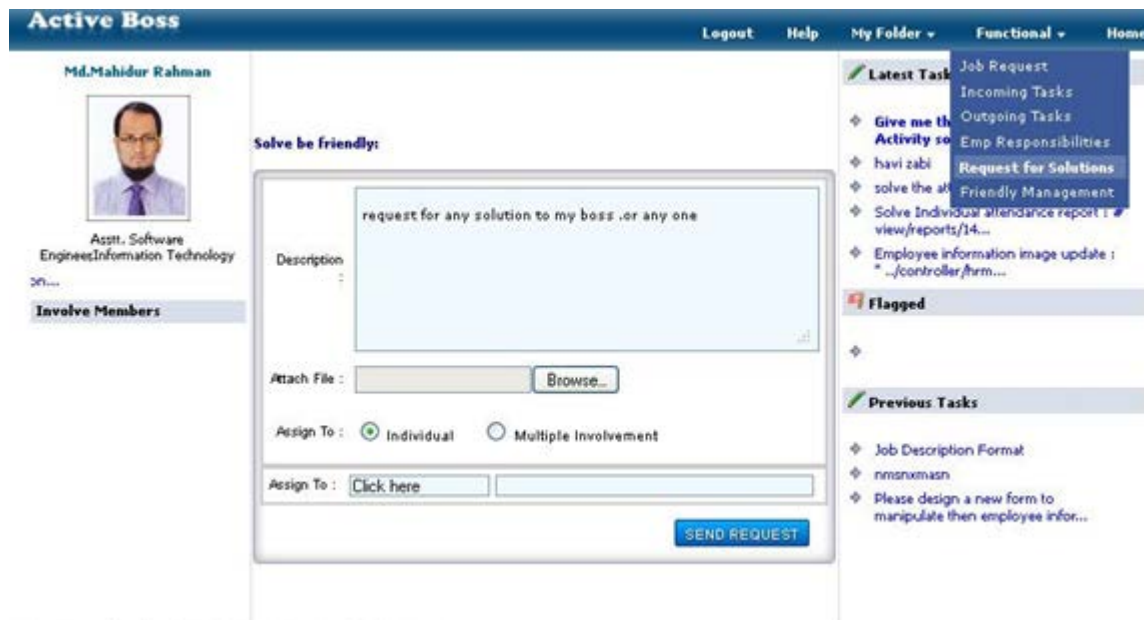


Fig: 5.13 Request for Solution Form

5.3.7 Friendly Management

Click on **Functional** => **Friendly Management** → **Incoming**

To add comment on a specific task, click on the link and write comment.

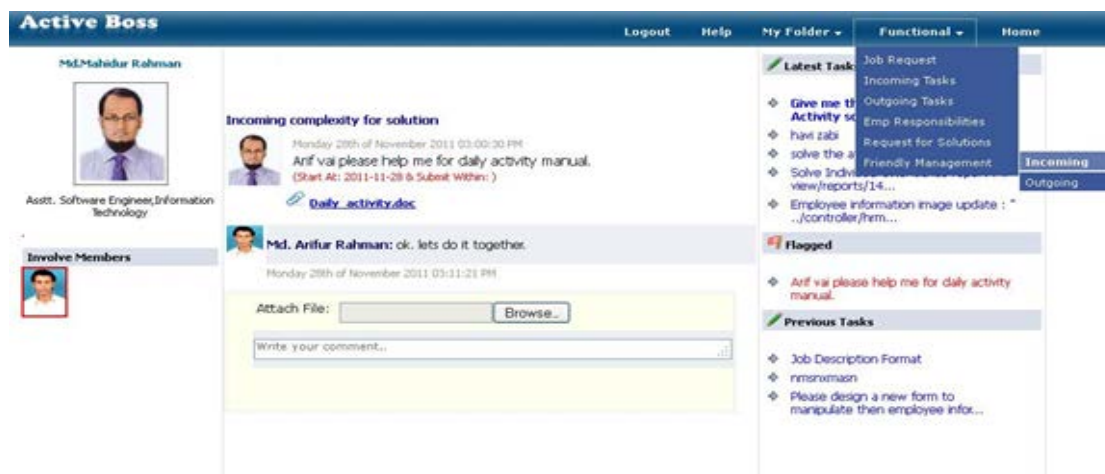


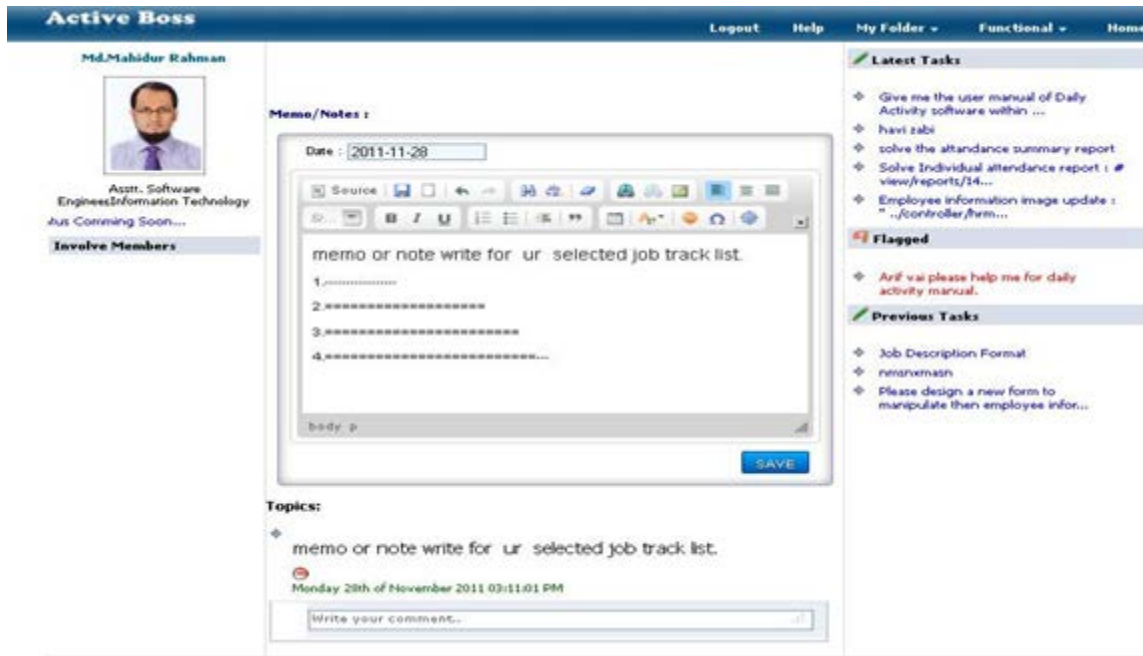
Fig: 5.14 Friendly Management

5.4 My Folder

This menu content is for employee personal use.

5.4.1 Memo/Notes

To make a **Note** or **memo**, click on **My Folder** menu and select **Memo/Notes** option.



The screenshot shows the 'Active Boss' web application interface. The top navigation bar includes 'Logout', 'Help', 'My Folder', 'Functional', and 'Home'. On the left, a user profile for 'Md. Mahidur Rahman' is displayed with a photo and title 'Asstt. Software Engineer (Information Technology)'. The main content area is titled 'Memo/Notes' and features a date field set to '2011-11-28'. Below this is a text editor with a toolbar and a large text area containing the placeholder text 'memo or note write for ur selected job track list.' followed by numbered lines 1 through 4. A 'body' label is visible at the bottom of the text area, and a 'SAVE' button is at the bottom right. Below the text editor, a 'Topics' section shows a list of topics, including 'memo or note write for ur selected job track list.', with a timestamp 'Monday 28th of November 2011 03:11:01 PM' and a 'Write your comment..' input field. On the right side, there are two sections: 'Latest Tasks' with a list of tasks like 'Give me the user manual of Daily Activity software within ...' and 'Flagged' with a task 'Arif vai please help me for daily activity manual.' and 'Previous Tasks' with tasks like 'Job Description Format' and 'Please design a new form to manipulate then employee infor...'.

Fig: 5.15 Memo/Notes Form

Write notes in the Text field and hit the **SAVE** button.

To comment on a previous note, click on the  sign.

5.4.2 Daily Work LOG

To make a **Daily Work LOG**, click on **My Folder** menu and select **Daily Work LOG** option.

The screenshot shows the 'Active Boss' web application interface. On the left, a user profile for 'M.M. Mahidur Rahman' is displayed. The main area is titled 'Daily Work Entry :'. It contains a large text area for 'My Daily work track list write here.' Below this, there are fields for 'Date' (set to 2011-11-28) and 'Duration' (set to 2 hour). There are 'CLEAR' and 'SAVE' buttons. At the bottom, there is a table with columns 'ID', 'Task', 'Date', and 'Duration'. On the right side, there are sections for 'Latest Tasks' and 'Previous Tasks' with lists of tasks.

Fig: 5.16 Daily Work Log Form

Write work description in the Text field, set **Date** and **Duration** and hit the **SAVE** button.

To **edit** a work log, double click on the specific data from data grid table and update.

5.4.3 Set Calendar

To set a **Calendar**, click on **My Folder** menu and select **Calendar** → **Set Calendar** option.

The screenshot shows the 'Active Boss' web application interface. On the left, a user profile for 'M.M. Mahidur Rahman' is displayed. The main area is titled 'Calendar:'. It contains a text area for 'Set calendar in ur future work list. set date & time.' Below this, there are fields for 'Date' and 'Time'. A calendar popup is visible, showing the month of November 2011. The 'Time' field is set to 10:00 am. There are 'CLEAR' and 'SAVE' buttons. On the right side, there is a menu with options like 'Memo/Notes', 'Daily Work Log', 'Calendar', 'Job Description', 'Send email', 'Change Password', 'Attendance report', 'Employee information image update', 'Set Calendar', 'Daily List', 'Calendar Summary', 'Summary report', 'Employee information image update', 'Job Description Format', 'Please design a new form to manipulate employee information', and 'Set Calendar'.

Fig: 5.17 Calendar Form

Write work plan in the Text field, set **Date** and hit the **SAVE** button.

To **edit** a task, double click on the specific data from data grid table and update.

5.4.4 Job Responsibility

My folder> job description > job responsibility click then open the following window.

The screenshot shows the 'Job Responsibility' form within the 'Active Boss' application. The form is titled 'Welcome to SUVASTU DEVELOPMENT Office Network'. It contains fields for 'Employee ID', 'Job Type' (set to 'Core Job'), and 'Job Description'. There are 'CLEAR' and 'SAVE' buttons at the bottom. A sidebar on the right shows a menu with 'Job Responsibility' selected, and a list of 'Previous Tasks' including 'Employee information image update' and 'Job Description Format'.

Fig: 5.18 Job Responsibility Form

5.4.5 Send Email

To send an Email, click on **My Folder =>Send Email**

The screenshot shows the 'Send Email' form within the 'Active Boss' application. The form is titled 'Send Email :'. It contains fields for 'To' (mohid_006@yahoo.com), 'Subject' (test mail), and 'Message'. The message body contains the text 'we'll come every body to daily activity.'. There is an 'Attach' field with a 'Browse...' button and a 'SEND' button at the bottom. A sidebar on the right shows a menu with 'Send Email' selected, and a list of 'Latest Tasks' including 'Give me the user manual of Daily Activity software within ...' and 'Solve Individual attendance report : # view/reports/14...'.

Fig: 5.19 Send Email Form

Write Email and click on **SEND** button

5.4.6 Change Password

Logout Help Attendance Log My Folder Functional Home

Change Your Password :

Enter Current Password :

Enter New Password :

Retype New Password :

CHANGE

Memo/Notes
Daily Work Log
Calendar
Job Description
Send email
Change Password
Employee information image update :
../controller/fhm...
Job Description Format
Flagged
Previous Tasks
nmsnmasn
Please design a new form to manipulate then employee infor...
1. Daily activity top menu cross browser kaj kora. 2. D...

Fig: 5.20 Change Password

First type current password than two time type new password and press change button

5.4.7 Log out

Logout Help Attendance Log My Folder Functional Home

Active Boss

Md. Mahidur Rahman

Asst. Software Engineer Information Technology

Involve Members

==> New Incoming Job: (0)
==> New Replies: (0)
==> Total incoming job this year: (0)
==> Total completed job this year: (0)
==> Total requested job this year: (0)
==> Total requested done this year: (0)

Latest Tasks
Solve Individual attendance report : #
view/reports/14...
Employee information image update :
../controller/fhm...
Job Description Format
nmsnmasn
Please design a new form to manipulate then employee infor...
Flagged
Previous Tasks
1. Daily activity top menu cross browser kaj kora. 2. D...

Logou

Fig: 5.21 Logout

Click logout button for terminate the software.

CHAPTER 6

IMPLEMENTATION AND TESTING

6.1 Implementation of Database

After updating the databases of the project, the creating phase increasing and through this phase, many work and system were used to update the website and some App, as represent in blew. The paper of the website starts with creating the website structure using HTML5, and then the style of the project was weighting using CSS3. dynamic website were developed using JavaScript and JQuery. For functionality using PHP5. Finally, the system incorporated in the project.

6.2 Implementation of Frontend Design

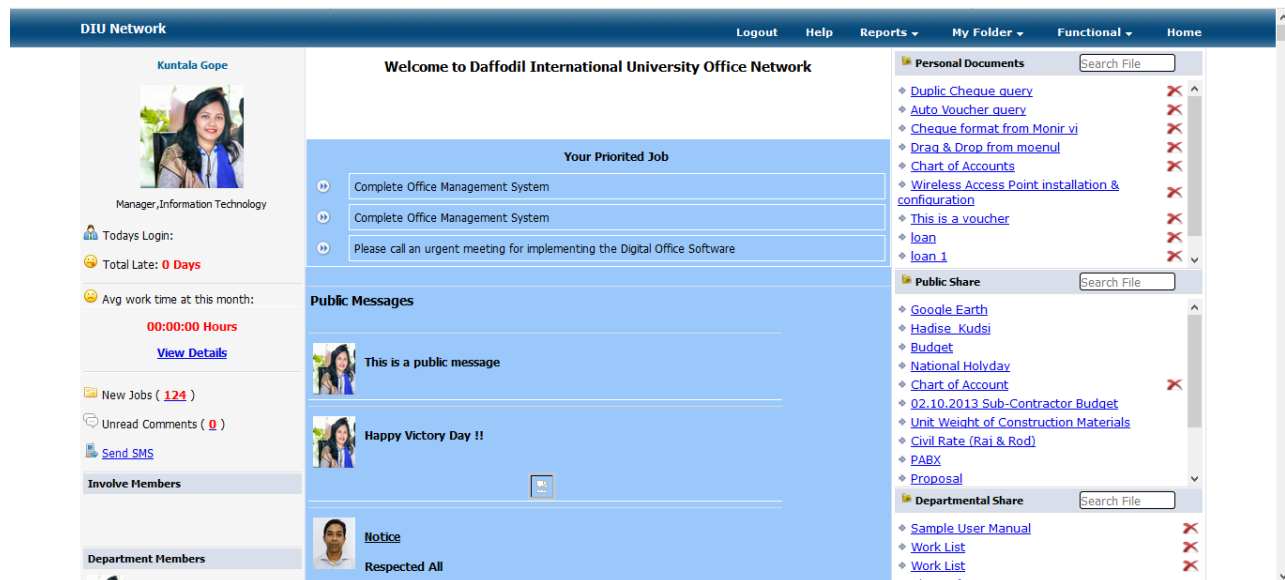


Fig: 6.1 Home Page

6.3 Testing Implementation

Two system of testing were show the website and how it using other working. These tests were originally showing functionality testing.

6.3.1 Performance Testing

The website was tested on Firefox browser using an online tool called GTMetrix, which analyzes web pages according to different rules by giving each rule aweigh, and then evaluates the score of each rule for the website.

6.3.2 Functionality Testing

All functions in the application, database connection, forms used to enter data for submission, editing, getting or deleting information from users were tested. Developers performed the test of the website. Some functionality requirements were tested during the test.

6.3.3 Security Testing

Security was tested by pasting internal URL directly into browser address bar without login. SQL injection SQL MAP tool was used to test all pages in website.

6.3.4 Database Testing.

Data consistency is very important. Data integrity and errors while editing, deleting, modifying the forms or do any DB related functionality were checked. Moreover, the entire database queries were checked to be executed correctly, data is retrieved correctly and even updated correctly.

6.4 Test Result and Report

Since the system has four users whose opinion about the system is very important, a sample of executives was consulted to evaluate the website. To evaluate the system based on the users.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

In this years, with the pace of updating technology, some man have become many and more expecting in terms of quality of life, and them an ager sin this years see to update a work in their organizations to get the highest rate of knowledge and experience in their performance. A great system can lead a manual office into a new dimension. In that case if a office already has a better management team and if they can implement this software it will bring them into the world of prosperity. We are ready to give support to all users as their necessity. We are able to provide any types of report for better experience in management.

7.2 Scope for Future Developments

Some ideas and feature scan be considered as a future work for this project. These feature scan be summarized in the following points:

- Chain Office can connect to the system
- There are lots of social network in the world. We can provide an official network to the world. It will be unique and we may introduce e-commerce between organizations to organizations

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