CHAPTER – III

SOFTWARE REQUIREMENT PATTERN

3.1 Introduction

In this chapter the software requirements of the research project are explained it’s important to study the software requirement, which are necessary for the completion of this research project. Data warehousing of the information about various projects is stored in the repository of the research project. The Data mining algorithm which are used to extract the information from various phases from the software project.

3.1.1 Purposefulness

This software requirement specification document is used to identify the requirements of the research project the data mining and ware housing research project will collect data and design a repository for various software engineering projects [Diego Perez-Palacin,2010]. This document once approved will become the baseline for the research project under development.

3.1.2 Stake Holders Intended of this research project

This research project is intended for the software engineering project developers all the stake holders working on a single project or multiple project can use this software and update the requirements and report and store the project related data. Also the data of the previously executed projects using the data mining algorithms [Leila Kloul,2009].The following sets of users are intended for such kind of research project.

- Software Designer
- Developer of the software
- Testers in the project
- Deployment team members of the project

3.1.3 Research project Span
These steps of the data mining and data warehousing of the software engineering projects can be used to manage and maintain the software engineering project. This software has no issues related to the extendibility and various sizes of the software industries. This research software will mainly cater to the needs of the software industry.

1. This research software will provide a central repository of the software projects, which are developed and are under development [Francisco Chicano,2007]. Information related to the various phases of the software engineering will be maintained on a single repository. All the phases of the software engineering and project management will connect and collect data at mutually exchange it as and when required by the various phases of the software projects.

2. This research project will provide various services like data mining and data warehousing of the software engineering project. Information gathering and extraction of the relevant information is the key point of this project. In today research and development environment it’s important to maintain the projects on a single repository so that it’s easy to connect to the various functionalities of the research project.

3. The stake holders of the research project collect data and extract the most relevant information using the data mining algorithms this service of the collecting and extracting relevant information is provided in my research project.

4. The technology is advancing day by day also lots of repeated codes are being utilized hence all the software codes should be maintained in a data warehouse where the users can easily access the codes of the projects that are relevant to their project [Laura Bocchi,2006]. The stake holders can apply data mining algorithms and collect most important data from the project repositories and use it in the ongoing projects hence this will reduce the time required to rewrite the functionality of the software project.

System today are not perfect all the system have some or the other lacuna some of the lacunas of this research project are as follows.

- Human technology problems
- Environmental Problems
- Total Power to the system problem
- Internet bandwidth problem.
The above are some of the problems which can be faced while using this research project.

3.1.4 System Plan and Execution Details

i. Limits of the hardware

As this research project is mainly catering towards the networking of the various phases of the software engineering project also the Data Warehousing and Data Mining of the software engineering phases of the software project [Abbas Heydarnoori,2006]. It’s important to have a good networking been done within the organization so that the intended stake holders can access the relevant data sitting at their desk without moving out from their places. Incase email sending clients should be properly set too so that email sending can be done right away from the application itself without moving away from the application to compose a email to be sent to the co-worker in the same project. Appropriate bandwidth should be allocated to the research person working on the project.

ii. Various Input and outputs collaborations

This research project has various modules starting from authentication of the users to the deployment and data warehousing and mining of the previously executed projects to keep all this in synchronization it’s important to keep all the data integrated and collaborative so that mining can be easily performed on the project and the codes of the previous projects can be reutilized [Lai-Hsi Lee,2003].

iii. Consistency Requirements

The system should be well equipped with various infrastructural system design and development tools and techniques. Various modules communicate information with each other and send the data to the central data warehouse which collects the data and stores it’s in a central repository. The repository should be really consistent and should work in synchronization with the central data mining tools [Jyhjong Lin,2008]. The various inputs and outputs should be synchronized and maintained is a tabular manner in the central repository. Information extraction will be done using the K-means algorithm used for mining the data from the central data repositories and relevant data about the project is displayed to the end users of the project.

iv. Security and precautionary measures
It’s important to maintain the security of the software projects as all the projects are stored on a central repository it’s important to secure the central repository. Information bifurcation is also important to maintain consistency in the software project which is under development. The system should be protected by the antivirus and malware software also it should be protected against the spyware all software projects will be checked for the spyware data. The conflicts which occur in the software projects should also be taken care of [Ewan Tempero, 2012].

The software configuration and management tools should be maintained to manage various versions of the software code developed by various software developers of the software engineering projects.

The minimum considerations which are necessary to be checked while implementing the software engineering project and data mining algorithms for these projects are as follows

- The software should be properly configured so that it can function appropriately.
- The software is designed using the C#, MS SQL database server 2005.
- The research project needs global server space for deployment of the software project

3.1.5 Expectations and Needs

The software developed has some important expectations which can be meet using the design criteria of the databases also the there is a need of resources which will meet the system requirements to store the data about the projects

This research project operated using the various web browsers and functions properly on the web browsers, which support the java scripts and css [Faramarz Safi Esfahani, 2011]. This research project for execution required a good bandwidth internet connection, the deployment is done on the Azure cloud platform which is a cloud paas( platform as a service ) provided by Microsoft software’s.

3. 2 System Characters

3.2.1 User Interface

The user interface is simple and easy to use it has various functionalities most of the systems designed need more information about the interfaces to understand the functionalities this system is designed with utmost importance so that the UI remains simple and it’s very
easy to user and configure the entire system Jan Bosch,2010]. Maintaining this feasibility was not so easy keeping in mind the security flaws and issues hence at every level there are security blockages, which are designed to confirm the user identity that is using the system, and there is no fake user or any intruder attacking the system and collecting the data for misuse. There are various stakeholders who will be using this software system designed. These stakeholders have various requirements and would like to extract different information from same central data warehouse for this purpose functions have been designed such that all the users can simultaneously ping into the system and collect the data from different sources. Information gathering from various sources is also critical in today’s growing environment of the software industry.

The data mining algorithms are used by the various stakeholders to collect and represent the data in the format intended by the users of the system. The user interface is the most important part of the software if the user interface is not simple the users of the system will find it difficult to use the system hence the system will become less productive and it will be very difficult to manage and maintain the system. Hence the reporting to the system will also decrease so it’s necessary to design and develop easy to use user interface with less predictive system design and development. Data mining with collaboration is also of major concerned as most of the data is collected from various phases of the project its necessary to keep the data in the data warehouse all the data stored in the warehouse should be up-to-date and should be synchronized with all the other systems requesting the data from the warehouse [Bettina Biel,2010]. The intended stake holder who requires the data will ping into the data warehouse and fire the queries and extract the relevant data from the warehouse this warehouse will collect the most recent data with all the updates and will display it to the intended stake holder of the software engineering project. This information will be displayed on the user interface designed for the relevant stake holder who is requesting for the data from the data warehouse [Jaejoon Lee,2010.].

3.2.2 Development of Project

- **System Design pattern**

  This research project will have a design pattern to cater the needs of the software engineering projects. Most of the system design and development is taken care by the users. Information about all the tasks and modules are stored in this system. Data mining and warehousing of the project management
system will provide as platform for all the stakeholders to collaborate and to store and work on the data synchronously without waiting for the other stakeholders to pass on the data [Wenpin Jiao, 2010]. When information needs to be extracted and displayed, the data mining algorithms will provide a crucial role in the information extraction from the central repository, which is a data warehouse of the existing and ongoing projects.

3.2.3 Project Tracing

The software industry has maximum amount of project failures and also delays in designing the client’s software. This is because of the miscommunication and unmanaged project schedules [Muhammad IrfanUllah, 2010]. As the software used to manage the schedule is not in sync with the project development systems its necessary to keep the tasks and the project schedule synced without any delay in the software project. Information management and system designs are complicated the schedules of the project and the information about the projects should be synced and collaboration of the information should be maintained [Ioannis Stamelos, 2010]. System should have the alert system which check the dates of all the modules and how they sync up with the design of the system schedule. The alert system will send push notification on the hand held devices also it will send emails to the end users about the delay in the ongoing projects if any system will help the stakeholder to keep track of any delay in the designing of the client projects.

- **Track / Untrack the projects.**
  It’s important for the stakeholders to keep track of the software projects under development. Most of the software engineering projects today require this button, which says Track / Untrack the system design [Jarmo J. Ahonen, 2010]. The project managers of the software project can keep track of the ongoing projects they can monitor the status of the software projects under execution and also maintain a list of ongoing projects. When the project manager will click on the track project he will be able to monitor all the activities of the software project and will be able to collect data about the projects [J. Floch, 2010]. The system will provide more information and data about the project, the project manager will be involved in the project once he clicks on
the track button of the project all the schedule related information will be displayed to the users of the system and it will become easy for the end user or the project manager to track all the module status and the progress report of the software under development.

3.2.4 Project Store Management System

- **Inter project clashes discoverer**
  Most of the software engineering projects have clashes and its important to discover these clashes with a proper monitoring tool these tools will take into account the data from the repository about the scheduling of the projects and how they are planned and the most critical project that needs to be delivered first all the resource allocation will be done to the project which has the end date closer so that the information about the project can easily be maintained most of the software development companies have software’s that need to be run separately which will figure out these types of project conflicts and will report to the project managers of the system [Jan Bosch,2010]. The project manager will then allocate appropriate resources or he will reschedule the project timing to meet the requirement of the clients and such that all the stakeholders involved in this project will have information ready to be deployed and executed in the project phases of the software engineering project.

- **Team management and development**
  This part of the research project will manage the teams, which are working on a specific part of the client project. These teams will directly work with the data repositories and extract the project related data from the various phases of the system [SantiCaballe,2010].The module will keep track of the schedules of various stakeholders involved in the software engineering project its important for the project managers to keep track of all the members involved in the software project information exchange and collaboration with the central repository is also important when comparing the various time schedules the information about the time of all the stakeholders of the project is extracted from the data warehouse of the software engineering project. information about scheduling and management of the software engineering project is also a key constraint in the industry today keeping all the projects in track is also a
major challenge and maintaining a central repository for the same if important and critical [Amjad Umar, 2009].

### 3.2.5 Project Deals

All the project deals that are sanctioned by the project managers and the other stakeholders of the organization should be maintained in the central repository most of the software industries do not keep track of the deals which they sign with the clients whose projects needs to be developed its important to keep track of all the deals which are be signed with the end users. Information collaboration and management of various modules is taken into consideration and schedules are maintained [Nenad Stankovic, 2009].

The deals of the projects which are sanctioned will be maintained in the central repository so if any stakeholder of the company need information about the deals of the projects or the sanctioned projects he will be able to view all the project details and information about the projects [Y.F. Li, 2009].

### 3.2.6 Project Self-suggestion

Most of the times the schedules and the data of various projects conflict and collaborate at this time stamp the project has a module which is called self-suggestion which will send push notification to the end users and information about the project will also be send by the email notification to the stakeholder of the projects [Giuseppe Di Modica, 2009]. Also some times its important to have suggestion for the code module which you want to execute if any code module needs any review its important to maintain information about the reports which are generated about the project. Some of the stakeholders are working on a module say authentication so in case if any similar module is available in the data warehouse then using the data mining algorithm the system can extract information about these modules and display the module information which is in synch with the project self-suggestion [Olaf Zimmermann, 2009]. Collaboration is also important and needs more monitoring and alerting if any such system is designed.

### 3.2.7 Project notifying system

The project notifying system will provide a module where all the notification about various modules, ongoing projects and delays can be synced the notification system will collect information about various projects and modules and will collaborate this
information with the projects and send notifications to the end users about the system changes or project schedule changes and system designs [Giuseppe Di Modica, 2009]. Notification and alerting is important so it’s important to maintain synchronization between the schedules and project execution time. The notifying system will keep track of all the activities, which are ongoing in a software engineering project. Collaboration with various modules to extract the data from various stages is also important. The system design and development is synchronization should be synced and consistency should be maintained within various modules of the software engineering project under development [Paul L. Bannerman, 2008].

3.2.8 Project Modularization

Various modules are synched in a central data warehouse the details and the codes of the modules are synched and stored with the latest code updates in the data warehouse. Information on this topic is very scanty today hence it’s important to explore this modularization in more details [Javier Pereira, 2008]. The modularization of the project helps in distributing the workloads to the various stakeholders of the project. The modules should finally be collaborated and stored on a central data warehouse. The modules of the project are segregated and tasks are assigned to the individuals stakeholders this information about the various modules is stored in a data warehouse the collaborative data will be maintained and synched with the modules of the software engineering project [Orit Hazzan, 2008].

3.2.9 Project Reports

The project reports are designed and maintained in a data warehouse where the information is stored centrally while displaying the reports the system should use data mining algorithm and collect data from various sources and phases of the software project most of the software engineering project are having big reports hence report modularization should also be maintained and information about the report should be more precise and to the point. System generated reports will be displayed on the user interface screen designed for each stakeholder depending on the role that stakeholders have [Girish H. Subramanian, 2007].

The project reports are the key concerned of the software engineering project and should always display the exact result that will help the project managers to keep track of the various activities taking place in the software engineering project. The systems that are designed today need more concentration and collaboration with the developed ones [Richard D. Corbin, 2007]. The reports serve as the face of the software engineering project. The
modularization of the software project is important also the reports that are generated should be modularized. Collaborative workflow and data management are important to the industry and also to the software companies around the globe today and reports are actually the face of the work which is going on in a specific project area so it’s critical to maintain the project reports and system designs the data mining algorithms which are applied to the software engineering project should provide mutual exchange of the project. In today’s projects large data sets are more complicated to understand the system designed to produce the modular result are generated. System composition and data management is important. System design and development are maintained Gerald C. Gannod,2005].

3.2.10 Project security

As all the project information is stored in a central repository its important to maintain high level of security both physical and software security. The server rooms should be secured against any attacks like cyber-attacks and also manual attacks, which take place. There should be proper updating of the antivirus software, which will protect the software, which are located in the data warehouse [Chin-Feng Fan,2004]. Various security measures should be maintained against fire and other climatic changes in the environment. To access the data it’s important to maintain system level security and authentication should be maintained there should be a LOG maintained about the system login and logouts with the timestamp and system design authentication. Level of the security should be tight and also information about the various software related issues should be logged into the system LOG file [DaniloArdagna,2012].

The security level of the system should have biometric and user password to authenticate a user entering the data warehouse in case any changes to the servers of the data warehouse is to be done. A specialized object is designed to maintain the security level of the project [Saurabh Kumar Garg,2011].Connecting information with the security levels should be combined. Various policies should be designed to maintain the security levels of the software projects.

3.2.11 Project Application program interface.

The application program interface will be helpful while accessing any part of the data from the system. A small code will be used to access major part of the data from the users and also collect all the data from various stages of the software engineering project
management software [SaurKwan-Sik Na,2004]. Various API’s will be used to connect to the databases and extract and display the information, which is required by the intended stakeholders. Most of the stakeholders will have access to critical information about the research project. These short codes are easy to understand and maintain in a system repository. The data collaboration is also important and system design is more connected and more collaborative [AnuPurhonen,2004].

Critical system overview is also important about the software engineering project. The application program interface provides critical information collaboration with the various modules of the software engineering project and system design and development.

3.2.12 Project Cue and Calendars

The project Cue is also a part of the software engineering project most of the events which are related to the designing and developing the software project are synched using the Calendar which is provided in the software project [Lucian Voinea,2007]. The data from various project related to various activities is synched in the calendar the stakeholder who loges in his calendar will be automatically be synched with the duties assigned and meeting schedules the Data Mining is carried out from the data warehouse and the intended stakeholders calendar is synched and managed with the system status.

This is an important part in the project. The calendar event is synched and collaborative data is maintained with the users of the system [Shih-Hao Hung,2012]. The Calendar system is synched across the users and all the scheduling and time management is done using the calendar all the meeting notices with the project managers and senior level management is synched to the calendar events and scheduling system. The system is more collaborative and more integrated with all the system design and development modules of the software engineering projects and development of the system modules. It’s important to have the calendar synched so that there are no clashes in the timing of the various stakeholders [David Concha,2010].

3.2.13 Distinct Login Many Roles

This user interface is having Distinct Login for multiple users it’s a role based login system, which collects all the data from the sources, which are having various modules [Mercedes Ruiz,2001]. There are many roles assigned to the users of the system the users can work on various modules and information extraction is more
comprehensive. As the users sometime have multiple roles to be executed so the login to multiple roles is having a single authentication once logged into the system the user can execute all the modules data and get the results worked out.

The various modules and the phases have different stakeholders and hence it’s important to synch the system design and development modules. Connecting all the data from various sources is important and it’s critical and helpful in developing system with single login and multiple roles. [Ricardo Jardim-Goncalves,2006] The users can synchronize with multiple users once they are logged in. Once the stakeholder is logged in his role are automatically assigned and the system is design to cater to all the needs of the stakeholders and system [Ivan Corredor,2011]. The project manager of the system can assign multiple roles to the various stakeholders and take work from various stakeholders this is easily be done by using the admin panel of the system designed the system is more collaborative and more synchronized and hence its easy to maintain the login and roles of the stakeholders.

This system mainly revolves around the users and the stakeholders; the system is mainly synchronized [Weili Han,2012]. The users are more important so its important to make all the data and the users more connected and work on a common objective to achieve it as all the module are connected the roles of each users are also managed and connected. Migration of information is more important and collaboration is more connected [Damjan Kovac,2009].

3.3 External Boundary Requirements

3.3.1 Client Interface

Project management software, project planning assistance, and resource pools have the ability to manage and develop resource estimates. Depending on the sophistication of the software, the estimation and planning, scheduling, cost control and budget management, resource allocation, collaboration software, communication, decision-making, management and documentation or administration systems are not [Xu Liyuan,2011]. Today, many PC-based project management software packages exist, and almost every type of business are finding his way. In the early days, however, the project management software ran on large
mainframe computers were used in a larger project. The initial systems were limited in their capabilities, and by today's standards were difficult to use.

Project management software, project planning assistance, and resource pool resource estimates have the ability to manage and develop [Javier Garcia, 2011]. Software, the estimation and planning, scheduling, cost control and budget management, resource allocation, collaboration software, communication, decision-making, management and documentation or administration systems are not depending on the sophistication. Today many PC-based project management software packages exist, and almost every type of business is finding his way. For example, they estimate that the scheme integrated into the individual that is responsible for areas such as updating; early days, HA collaborative system to support multiple users to modify various sections of the plan is designed to [Subhas Chandra Misra, 2011]. Extranets, including the web-based tools, in general, are in this class, but the user has access to the Internet when they live only limitation is that you can use. To address this limitation, client-server architecture using some software tools, users connect to the network from time to time, other project team members through a central server to users' desktop computer and replicate project and task information is going to the rich, the client it can provide [J.T. Shim, 2010]. Some devices on the network when their team members to work on their schedules allow you to check out. Reconnect the database when all changes are synchronized with other schedules. However, project management software running on large mainframe computers were used in the project. Early systems are limited in their capabilities, and by today's standards were difficult to use [Jose M. Cruz, 2012].

### 3.3.2 Project Hardware Requirement.

- Server grade Operating system of Microsoft deployed on the server.
- High End Processor Intel Xeon x5 Series.
- Random Access Memory 1GB.
- External Storage with Synchronization Seagate.
- Data Warehouse.
- Storage System SAN.

### 3.3.3 Project Software Requirement.
The software interfaces, which will be required to design this research, project which help in implementing system design and development are necessary [Rafael Prikladnicki, 2010].

1. Microsoft Visual Studio .NET
   The latest version of the Microsoft Visual Studio 2012
   The software can be downloaded from www.microsoft.com
2. Web Browsers and Systems
3. .NET framework 3.5
4. System with updated OS of Microsoft

3.3.4 Announcement Boundary.

The system requirement is good Internet connection with high bandwidth and good speed to access the development. It’s necessary to connect to the remote servers using high speed internet also the data mining is done online so it’s important to have synchronous internet connection the link to the internet should not break in between and connection should be well established and system should be more connected and developed [Alexander Benlian, 2011]. The system will have connection to the data warehouse which will have all the data stored. The various activities, which are involved in the software project, are easy to announce these are a system, which will cater to the development of the software acknowledgement and development. The stakeholders will receive notification from various phases of the software engineering modules. The system designed to email and send push notification to the intended stakeholders.

The software’s used to design and develop the software project various programming languages used. Some of them are explained as follows:

1. C#.NET

This programming language is used to design and develop the code of this research project. This system enhances the coding flexibility the C# Programing language is more code oriented and it’s easy to understand [Nils Brede Moe, 2010]. The total code is designed using the C# programing and data modules. The C#.NET is a more user-friendly programming language and is having objected oriented programing and development. This system design and development will provide collection of various modules.
2. ASP.NET

This is used for the user interface design and development the user will interact with the interface which is designed using the ASP.NET front end its and intuitive user interface and easy to understand and develop user interface [MahmoodNiazi,2010.].

3. 4 Operation of development Requirements

3.4.1 Implementation Requirement

a) Accessibility

This is one of the key features of the system software, which is designed and developed. Information is accessible across various phases of the software engineering project the system is accessible across the globe information is more readily on various devices that are being used and designed internally [Helen Sharp,2009].

This system is OS independent and Platform independent so it’s easily accessible across various device and platforms. System is designed and developed across various platforms and system is catered with all the needs requirement of the systems. It is important for the system to be accessible across the globe so that the engineers working across the globe can use the data stored in the data warehouse of the software companies. Information can be accessed depending on the usage scenario of the intended audiences of the software [Sean Marston,2011]. The system is more integrated with all the data needs the information needs to be managed and maintained with all information and collaboration. The data Adaptive technology to enable a person to complete the task, change, or adapt, existing tools, methods, or new uses for existing devices are manufactured. Examples of the use of remote controls, and both assist individuals with mobility disabilities to complete tasks in a computer word processing programs feature included. Other examples of adaptations wheelchair tires, the tires in deep snow on the ski hills wheelchair users, and sandy beaches as a soft surface enables you to move on. Non-Western countries, surveys are limited, but available data also indicate that workers with disabilities are filling fewer jobs [Julie Yu-Chih Liu,2008]. In India, a large survey in the 'top 100 multinational companies' employment rate of persons with disabilities in the private sector only a few multinational companies, top hundred Information Technologies companies less
important and that "in the country". India, like most of the world's strongest, regulation of the informal economy, social security, without that large sections of the economy. Other factors, such as the high unemployment rate in the public service rules, have been cited as contributing [Enji Sun, 2012].

b) Availability

This system is available to all the stakeholders 24x7 without downtime the system is designed and developed to cater the needs of all the users. System availability, particularly its reliability is measured as a factor - reliability increases, so does availability. Increased system availability and reliability, testability and maintainability not to focus on a strategy may increase [Tore Dyba, 2008]. Maintainability is easier than improving the general reliability. Maintainability estimate are usually more accurate. The reliability of estimates of uncertainty in most cases is very high, even when the maintainability of that, the availability of the problem, is likely to dominate. The system need to be integrated with the UPS backup systems so that high degree of availability can be achieved the system need to be backed up with lots of storage space and lost of processing power so that the resource utilization can be achieved easily collaboration of information is important and it needs to maintain system integrity [Mordechai Ben-Menachem, 2008]. The users of the system would like to access the data warehouse in different time zones hence a high bandwidth should be provided the utilization of the bandwidth is also crucial part also network security is important while maintaining this kind of data centers for the project purpose.

Today is a era where information needs to flow in and out of the system 24x7 without any delay hence it’s important to have high end server resources. Keeping information synched and updated with all the mirror images of the servers.

c) Backup

The system has a good backup that will cater to the needs of the stakeholders the backup disks will maintain the data in central repository and information will be synched from the backup disks to the flash disks as and when required. Backups have two distinct purposes [Carl K. Chang, 2008]. The primary purpose is to recover data after its loss; the data is by deletion or corruption. Data loss may be a
common experience for computer users. 60% of 2009 survey respondents had lost their home and could not find files on the PC. The secondary purpose of backups, user-defined data retention policy, according to an earlier time copies of data needed to recover data is usually how long the backup is configured within the application. Popular Backup Disaster Recovery is a simple form of representation, and by itself, should be part of a disaster recovery plan, however, disaster recovery backup alone should not be considered [Femi G. Olumofin,2007]. This is one reason for not returning all of BA's only data backup systems or backup applications, reconstitute such as computer system or computer cluster, active directory servers, or a database server as other complex configurations are capable of maintaining the data securely.

d) Compliance

The system designed is highly compliable with other features and facilities the design is more integrated and more user friendly. In many cases, prove to be a challenge to data retention and regulatory compliance is a part [David M. Raffo,2005]. Compliance with industry regulations comes from the opposite seems to be to maintain the security of the user's privacy. Data retention laws and regulations of the time required for normal business operations to maintain records of user activity for a wide range of data owners and ask other service providers. These requirements are in question by supporters of the right to privacy.

e) Documentation

The documentation is easier to maintain and also the information about the documentation is easily catered to [AshutoshBagchi,2005]. The documentation may include the following types

- Video Documentation
- Audio Documentation
- Textual Documentation

Technical writers and corporate communicators who are professionals in the field and work documentation. Ideally, technical writers, content, writing and managing both the subject and the background. Technical writers are more common, such as engineers, medical professionals, or to define other types of clients, Subject data management, with the collaboration and content that meets the user's requirements
Create [TorgeirDingsoyr,2005]. Corporate communications, most companies are required to include other types of written documentation. The documentation work will collect data from various phases of the software engineering project and all the data which is collected will be documented properly with no error in the documentation process its important to cater to the system design and development documentation. The information synchronization is easy to maintain on a central repository which will provide the stakeholders the ability to access the references to the codes and the design documentation is easily maintained across the users designs and system designs all the documentation work about the data mining and data warehousing is also maintained [Ian R. McChesney,2004].

e) Configuration Management

The Software will maintain the configuration of the systems also the data management will be configured to suit the requirement of the end users and project leads the system is designed to maintain various version of the system software’s and the codes which are stored in the central repositories and data which is collected from these software’s is important and critical to the end users of the software. Collaboration with the various phases of software engineering projects will provide a well-designed and integrated platform for integration and management of the modules it’s important to cater to the needs of the organization [A. Chatzigeorgiou,2003]. The system has a configuration management tool. When applied to the system life cycle, visibility and control its performance, functional and physical attributes provide. Configuration Management system is intended as a guarantee, and detailed enough to recognize and support its projected life cycle is documented. Repeat capacity as the Configuration Management process and system information such purposes beneficial to the orderly management of the system changes smoothly, performance, reliability, or improve maintainability; extend life, reduce costs, or correct defects; reduces risk and responsibility. Configuration Management implementation of the minimum value of cost avoidance, many times [Isabel Ramos,2001]. CM lacking or ineffective implementation, which can be very expensive and often of such equipment failures or catastrophic consequences such as loss of life may be. The collaboration of the configuration across various development cycle sound good to be true but it’s critical to manage and maintain the configuration of the software engineering project system.
f) **Disaster recovery**

In case any system failure occur it’s important to manage it and also its necessary to collect data after the disaster has occurred to keep it updated. IT disaster recovery awareness and disaster recovery industry, the advent of Open Systems and Real-Time Process (the increased dependence of their IT systems), driven by increased rapidly. Another driving force in the growth of industry in various sectors of economy, business continuity and disaster recovery plans for organizations, government rules mandating increased [D. Pfahl,2000].

Incomplete Recover Time Objectives and Recovery Point Objectives rapid disaster recovery plan can derail. Failure to increase the disaster's impact on the significant problems that can lead each item as a Data Recovery plan, a defined recovery point and time objectives are needed. The Recovery Time Objective and Recovery Point Objective metrics have been equipped with Information Technologyinfrastructure; Data Recovery planners for each system can determine the appropriate recovery strategy. The organization ultimately determines the Information Technology budget and therefore the Recover Time Objective and Recover Point Objective metrics need to fit with the available budget [John S. Osmundson,2003]. The business unit heads, zero data loss and zero time loss, the value associated with the level of security that would be the desired high availability solutions are impractical. A cost-benefit analysis is often applied to disaster recovery measures, which suggests. This system will provide the information which will be maintained on the central repository incase if any disaster occurs we need to recover the data immediately so most of the system and companies are having mirror images of the data today its critical to maintain the information on both the system and keep it more integrated and more connected and synched [Liangcai Liao,2012].

g) **Environmental Protection**

The system should be protected against the environmental protections. An ecosystems approach to resource management and environmental protection instead of having to respond to the specific issues and challenges to the entire ecosystem of the complex interrelationships. The ideal approach to information, conflict - resolution strategies developed and improved regional defense better Exchange support. Department of Environmental Protection oversees the main
government organization [Nan-Hsing Chiu, 2011]. The integration of environmental issues, environmental planning and policy-oriented environmental research. The National Environment Management Council National Environmental Management Act was first introduced in 1983, is an organization that was started monitoring, policy through the creation of the committee on a range of environmental issues, governments and the international community has a role to advice. The system has the following purposes: to provide technical advice, technical activities, coordination, implementation guidelines and procedures development, assessment, monitoring and evaluation of activities that affect the environment, environmental information and promote communication and support, and to the advancement of scientific knowledge [Esperanza Marcos, "ArchiMeDeS, 2012]. The information protection is important against the environmental hazards to design the data centers in such a way that the data is protected from the various environmental problems that occur in today world its really challenging to predict the changes in the environment due to the global warming taking place across the world today the material user to design the data centers should be fire and water proof so that they will protect the data centers outside.

3.5 Breakdown Models

The system analysis model is an integration of various modules of the project the various diagrams are used to provide connectivity and integrate the features of the designed system for this research project.

3.5.1 Data Flow Diagram
Level 0 of Data flow Diagram

- The Project Manager of the System
- System Design and Requirement
  - The System Requirement Updating
  - Central Repository Access and Authentication
- Central Repository Project Requirement Updated
- Project Details Listed
- Users of the project are listed
- Database to Collect the Project Names
- The Stakeholder list for the project
- Various Phases of the Software Updated

Level 1 of Data flow Diagram

- Project Phases and Development

Figure 3.1 Data flow Diagram