Data Mining and warehousing for Comprehensive Web Based Project Management Software.

Mohammed Farooque Khalil[#1,] , Dr. H.S. Acharya[*2], Mahtab Alam[#3]

[#1]*Department of Computer Science, Ness Wadia College*
Wadia College Campus, Pune -1
[1]`farooqmcs@gmail.com`

[*2]*Allana Institute of Management Sciences*
K.B. Hidayatullah Road, Camp, Pune -1
[2]`haridas.undri@gmail.com`

[#3]*Department of Computer Science, Poona College*
K. B. Hidayatullah Road, Camp, Pune -1
[1]`mahtabalam@hotmail.com`

Abstract- **The project Management Software will be used to collect the information from the different levels of software development and different people involved in the project and product development. It provides Status and Reports of different levels of project and product of entire day, week and month. It will maintain the details of the client and the developer interaction as all the documentation work will be done by both the client project and the software development team who are working on the client project and product .The client who is giving the project and product to be developed to the company can view the documentation that is prepared .PMS provides a collaborative suite for mining the data for different people involved in the PMS,from the PMS warehouse where the data is stored**.

Keywords— *Data mining ,Data warehousing , PMS*.

1.

2. 1. INTRODUCTION

The goal of project Management Software is to produce a product that is delivered on time, within the allocated budget, and with capabilities expected by the customer [1] Project management Software will be used to collect the information from different levels of software development and different people involved in the project and product development .This software will handle all the activities starting from the enquiry by the client to the Planning completion and delivery of the product made by the company to the client. All the activities will be monitored and will be documented which can also be viwed by the company who has made the product for the client along with all its details [2] . The client will know about the exact manpower

employed and the time duration spend by each employee who is employed for his product development. The collaborative information, which will be gathered ,will be visible to the client and the company who is developing the product.Data mining (the analysis step of the knowledge discovery in databases process, or KDD), a relatively young and interdisciplinary field of computer science is the process of discovering new patterns from large data sets involving methods at the intersection of artificial intelligence, machine learning, statistics and database systems. The goal of data mining is to extract knowledge from a data set in a human-understandable structure and involves database and data management, data preprocessing, model and inference considerations, interestingness metrics, complexity considerations, post-processing of found structure, visualization and online updating.Data mining, *the extraction of hidden predictive information from large databases*, is a powerful new technology with great potential to help companies focus on the most important information in their data warehouses. Data mining tools predict future trends and behaviors, prospective analyses offered by data mining move beyond the analyses of past events provided by retrospective tools typical of decision support systems. Data mining tools can answer business questions that traditionally were too time consuming to resolve. They scour databases for hidden patterns, finding predictive information that experts may miss because it lies outside their expectations. Data Warehouse is a single, complete and consistent(reliable, dependable) store of data obtained from a variety of different sources made available to end users can understand and use in a business context (situation,framework,perspective).In computing, a data warehouse (DW) is a database used for reporting and analysis. The data stored in the warehouse is uploaded from the operational systems. The data may pass through an operational data store for additional operations before it is used in the DW for reporting. A data warehouse maintains its functions in three layers: staging, integration, and access. Staging is used to store raw data for use by developers. The integration layer is used to integrate data and to have a level of abstraction from users. The access layer is for getting data out for users. Data warehouses can be subdivided into data marts. Data marts store subsets of data from a warehouse. This definition of the data warehouse focuses on data storage. The main source of the data is cleaned, transformed, catalogued and made available for use by managers and other business professionals for data mining, online analytical processing, market research and decision support (Marakas& O'Brien 2009). However, the means to retrieve and analyze data, to extract, transform and load data, and to manage the data dictionary are also considered essential components of a data warehousing system. Many references to data warehousing use this broader context. Thus, an expanded definition for data warehousing includes business intelligence tools, tools to extract, transform and load data into the repository, and tools to manage and retrieve metadata.

3. 1.1 WHY PMS

PMS(Project Management Software) Web-based software can increase performance, productivity and efficiency within an organization.

4. 1.1.1EASY CLIENT SUPPORT AND REGISTRATION.

The PMS provides a vital facility for the customers and the clients of the company which are registered with the software company.

1.1.2 EASY DATA MANAGEMENT

The PMS allows easy adding of tasks, assign users set durations, Testing and more. all from a GUI layout that is easy to understand and use.

1.1.3 VIEWS AND REPORTING

The Project Manager all the people involved in the development of the project and client can view the progress of the project. The client can also view the reports.

1.1.4 USER AND PROJECT schedule

All users have their own schedule defined in the PMS.Withthis information, project timelines take into consideration the schedule of the person doing the work so that team members are evenly tasked and accurate completion predictions are made The entire software Development Life Cycle is distributed in the time frame with each phase in the Software Development Life Cycle having a start date and an end date.

1.2 TOP REASONS FOR CHOOSING PMS

1.2.1 BETTER TIME MANAGEMENT:

PMS provides better time management as everything is well planned.

1.2.2 IMPROVED PRODUCTIVITY:

When teams communicate more effectively, projects are completed on-time, on-budget and on-target. Hence the profitability efficiency and improving communications and accountability.

1.2.5 BUDGET FOR THE FUTURE:

The long-term success of any organization depends on the ability to manage each and every project with maximum productivity.

5. 1.2.6. CENTRALIZED INFORMATION:

With all product data in a centralized location, the entire team encounters fewer errors and discrepancies.

6. 1.2.7 IMPROVED TEAM COLLABORATION:

NO SOFTWARE can replace responsible, diligent team members. However, PMS can help the team work together more efficiently.

7. 2.DOMAIN AREA OF PROJECT

The domain area of the project is the web based application the multitier architecture is the main consideration of .Net 2005 that allows creating the system. The PMS allows managing and maintaining the project. Status and reports that are very useful for better productivity and also less time consuming.

3.WORKING EXPLANATION

The Project Management Software can be deployed on to the IIS server and different users accessing their machines can access this application since PMS is a web based software. It contains different modules that can be used for managing and maintaining the software project.

The PMS has two users. Client and Employee. In order for the client to do the project with the company. The client has to fill a form on the web portal of the company. If the project is acceptable ,the client is registered .The client can view the status of the project at any point of time he wants.

The Project Manager company person and software engineer are the main users in the category employee. Softwaredesigner, software coder and Software tester are the users in the category Software engineer. the Software engineer fills in the detail regarding the project progress.

3.1 INITIATION

The software contains the new registration screen which the user uses to register himself in order to use the functionalities and features of the PMS system Figure[1] .The PMS allows the Project Manager to manage the entire software Development Life cycle by planning and managing the different phases of the software development lifecycle.

3.2 PLANNING

The planning module of PMS allows the Project Manager to plan the project development and also allows the Project Manager to manage the planned schedule[3].The Project Manager can plan the details regarding the project and check whether completion of the particular phases of the project in on time or behind schedule. This module is also used to maintain and manage the different modules of a project .The modules and the sub modules can be maintained and managed in this phase. Human resource allocation is also done in this phase.

3.3 REQUIREMENT

It is used to capture exact requirement of the client .It consists of three phases .

3.3.1 REQUIREMENT INITIATION

The document which capture the rough requirements of the client, is sent by the company person to the client.

3.3.2 REQUIREMENT CAPTURING

The actual requirements of the client are captured using two tools.

A. BRAINSTORMING

In this phase interaction session are held by the company with the clients and all stake holders. All the project requirements are captured in this phase Figure [2]

B. SIX HAT THINKING

This phase consists of six different colors hats which allows the developer to think in six deferent perspective Figure [3]. White Hat: In this, the developer collects all the data related to the project, from the client. Red Hat: In this developer can decide how the data can be used in actual implementation of the project.

Black Hat: In this, the developer thinks about the risk and evaluates the effects of unwanted requirement in the project.

Yellow Hat: This helps the developer to think positively to see all the benefits of the decision and valuing in them.

Green Hat: It stands for creativity. Creative solutions are found.

Blue Hat: This stands for process control this Hat is warn by people chairing meetings.

3.3.3 REQUIREMENT SPECIFICATION:

Many types of document are created and analyzed by the developer some of the documents are :

A. BUSINESS DOCUMENT

B.SCOPE AND VISION

C REQUIREMENT PRIORITIZATION

3.4 DESIGN:

This phase consist of selection of particular model for the project and design of the project using UML diagrams Figure [4].
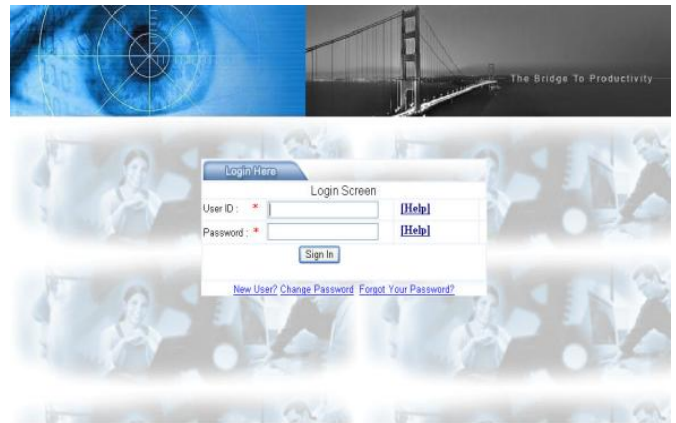
3.5 CODING:

In this phase the PMS system is used to monitor the coding of the various project modules [4].

3.6 TESTING:

This phase tracks the bugs and defects in the project in the modules while they are being tested by the testing team. As the PMS is a web based application a detailed report of all the bugs can be viewed and rectified by the developers.[4].

3.7 DEPLOYMENT:

The project release module allows the release of the project to the client once all it maintains the details of the pending issues of the project, payment made by the client to the company developing the project. The pending issues are those issues that are in WORK still the client wants the delivery of the project. The pending issues can be viewed by the developer so that they can be cured as soon as possible.
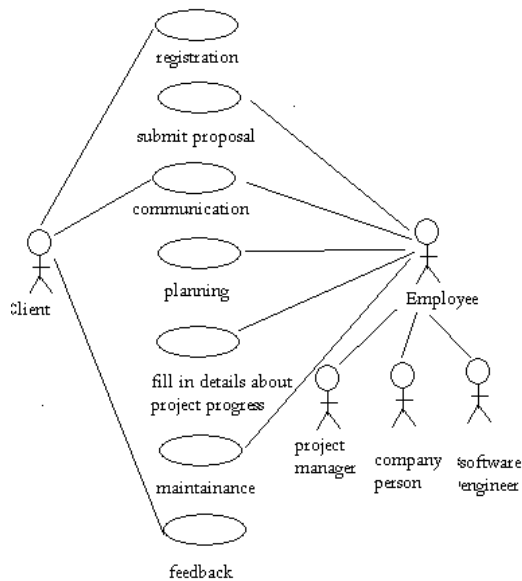

Figure– 1

Figure–2

Figure– 3

Figure– 4

4. CONCLUSION

Project management software is the software which encompasses all phases of the software development life cycle that are as follows:- communication, planning designing coding, testing, deployment feedback and maintenance .The project manager has a control over the project development phase. Client can view progress of project.PMS dramatically improves performance and the communication between distributed and remote teams. PMS heightens the visibility and control of application development life cycle giving a better control over the entire development process, from the management stage to deployment. The PMs allows you to move into the future without abandoning the past. It provides interoperability that is fundamental to the application lifecycle. Globalization for many companies today around the clock nonstop design and development sounds too good to be true. So how do you keep multiple teams-distributed around the campus or around the globe and focused on the end goal ?First , you need an integrated environment from managing change and configuration requirements and a system that is designed to give you visibility into the development process- one that will help you maintain control of the application lifecycle.

REFERENCES:

1.Abdullah Saeed Bani Ali "A Study of Project ManagementSystem Acceptance"0-7695-2268-8/05IEEE SOFTWARE ,Proceeding so fthe 38th Annual Hawaii International Conferencing System Sciences(HICSS'05)-Track 8-Volume08 IEEE 2005.

2.Arthur B. Pyster ,Richard H .Thayer," Software Engineering Project Management 20 years Later "IEEE SOFTWARE Volume22,Issue5(September2005)Pages: 18-21.

3.Marc Frappier ,Mario Richard "SMP:A Process-Driven Approach To ProjectManagement"0-7695-2056-1IEEE SOFTWARE Proceedingsofthe 37thAnnualHawaiiInternational Conference On System Sciences(HICSS'04)-Track 8-Volume8 IEEE2004Page: 80253.3

4."Software Engineering" by Roger Pressman 6thEdition ISBN:0072853182 Copy right year: 2005.

5. Wouter Verbeke,David Martens,Bart Baesens" Data Mining Technique for Software Effort Estimation : A Comparative Study" ISSN: 0098-5589,IEEE TRANSACTION SOFTWARE ENGINEERING, 15 2011. Page : pp. 642-645

6. Arun Sen ,K.(Ram)Ramamurthy,Atish P. Sinha "A Model of Data Warehousing Process Maturity" ISSN: 0098-5589,IEEE TRANSACTION ON SOFTWARE ENGINEERING, 03 Jan 2011. Page : 131-135

7. Methanias Colaco Junior,Manoel Gomes Mendonca,Francisco Rodrigues "Data Warehousing in an Industrial Software Development Environment", ISBN: 978-0-7695-4013-9, IEEE Software Engineering Workshop, 2009. Page no. 131-135