Cloud based Project Management System

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Abstract: Generally many engineering colleges have collection of B.E. projects for particular academic year, but these projects are not stored anywhere in computer system or there may not have any record of these projects digitally. Many colleges handle B.E. projects manually like their FTRs, documentations, project exams, etc. So, to overcome earlier limitations we proposed a system called PMS(Project Management System) that can manage many B.E. projects automatically. PMS is designed to handle college level projects. It is hard to manage all B.E. projects in-person by a project coordinators manually like project guide allocation to each project group, arrangement of FTRs(Formal Technical Reviews), evaluation of best projects among all projects. PMS is proposed to work digitally instead of hard-paper works.

Keywords: Web, Project Management, Evaluation, Server, FTRs.

Introduction:

Project Background: PMS will manage B.E. projects at college-level digitally. Till now all projects data were stored manually as printed paper files. PMS includes cloud storage (huge storage, access from anywhere) & also includes automation in terms of dynamic guide allocation. Every time there is deadline for document submission (uploading documents). So each and every group must upload their documents before deadline. Depending on the FTRs reviews of teachers about FTRs, our system will give rating to the project and evaluate best project among many projects. It is also beneficial for students which are not familiar about documentation process of projects like writing synopsis, way to present research paper, writing project reports by introducing recommendation in PMS system (provides templates, reference books). There is also notification facility is provided in PMS as students get notifications related to respective projects.

Project management is the employment of knowledge, expertise, tools and methods to project activities that satisfy project requirements [1]. The term project management is sometimes used to describe an organizational approach to the management of ongoing operations [2]. This approach, more properly called management by projects, treats many aspects of ongoing operations as projects to apply project management techniques to them.[3]

Motivation: Compared to many business processes, project management appears to be particularly difficult, from both theoretical and practical perspectives. From a theoretical perspective, the fundamental planning problem of resource constrained scheduling is highly intractable. From a practical perspective, the two standard objectives in project management are defined to be completion of the project on time and on budget. Yet, many projects fail to meet these two criteria, despite detailed

planning before execution begins and the use of modern project management software. So we build up such a system that track the status of project, time to time completion of project tasks. This PMS system is mainly belongs to digital works instead of paper works.

Existing System & PMS System:

1.Before PMS, projects are handle by project co-ordinators manually by randomly allocating project guide to respective project group depending on their project domain. But this is tedious job for project co-ordinator because they have to monitor all project groups to available project guides. During this allocation many guides get underloaded/overloaded by many project groups, many project groups do not get appropriate project guide as per their project domain. This is completely automated in PMS system.

2. Also there is need to arrange meetings every time for documentation submission which is paper based documentation. This is also completely digitised in PMS system.

3. In existing system there may not have any records of project data at college because of paper file storage is hard to maintain. Here in PMS there is huge cloud storage is available to store project data. User or college can access this data anywhere and anytime.

Project Specification:
1. Dynamic guide allocation: This system has inbuilt feature of assigning project guides to respective project groups depending on project domain (synopsis), teachers research domain. Each project guide have fixed number of project groups under their guidance. So this system will balance the load on project guide by assigning the limited number of project groups to the guide.

2. Recommendations: This system going to provide templates/format of documentation like project synopsis, project report, research paper, etc which would helpful for students to prepare this documentation in standard format.

3. Evaluation: Project evaluation is also important task. Every year best projects get evaluated on the basis of experts rating, FTRs reviews, direct measures & indirect measures. Depending on the FTRs reviews of teachers about FTRs our system will give rating to the project and evaluate best projects among many projects.

4. Notifications: There is notification system introduced in PMS to give alert to students about particular activities or schedules. This includes notifications via Emails, SMS's.

Why Cloud?
1. On-demand self service
2. Multi-tenancy
3. Broad Network access
4. Usage Meter: Pay-as-per Use
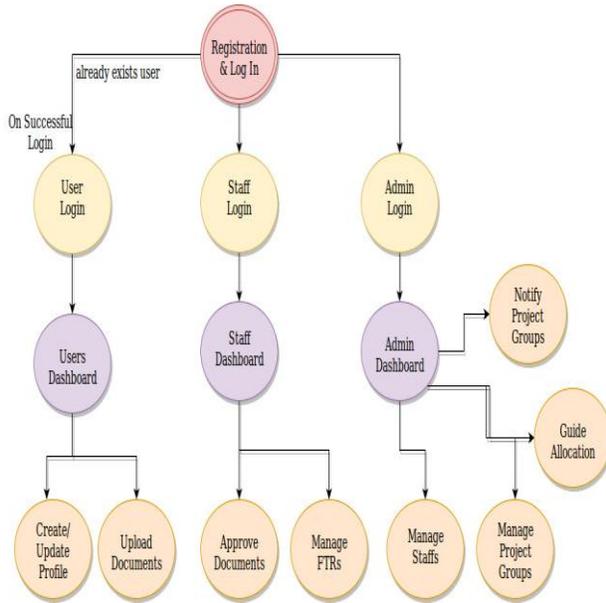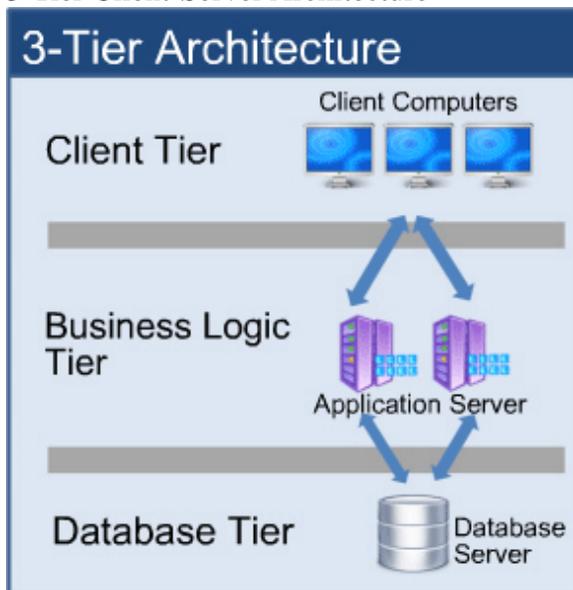5. Rapid Scalability

Data-Flow Diagram:

Fig. Data-flow diagram PMS

Implementation:
3-Tier Client-Server Architecture

1. Server: Apache Tomcat [5], tomcat server is open-source java servlet container developed by the ASF Apache

Software Foundation. Tomcat specifies Java Servlet, Java Server Pages (JSP) and provides a pure Java HTTP web server environment in which Java code can run.

Catalina: Catalina implements Sun Microsystems's specifications for servlet and JavaServerPages (JSP). Tomcat 7.x implements the Servlet 3.0 and JSP 2.2 specifications.

2. Database: MySQL is a relational database management system (RDBMS) which is open-source. MySQL is a central component of the LAMP technologies. MySQL is also used in many high-profile, large-scale websites, including Youtube, Facebook, Twitter, Google.

3. Web Technologies: HTML, CSS, JSP, Servlet

HyperText Markup Language (HTML) is the standard markup language for creating web pages and web applications. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.[6]

CSS stands for Cascading Style Sheets. It is a stylesheet language used for describing the presentation of a document written in a markup language.[7]

JSP stands for JavaServer Pages. It is a technology that helps software developers create dynamically generated web pages based on HTML, XML or other document types. JSP is similar to PHP and ASP, but it uses the Java programming language.[8]

4. IDE: Eclipse is an (IDE) integrated development environment used in computer programming. Integrated development

environments are designed to maximize programmer productivity. It present a single program in which all development is done.
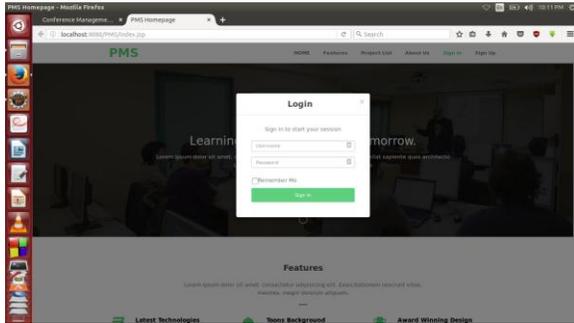
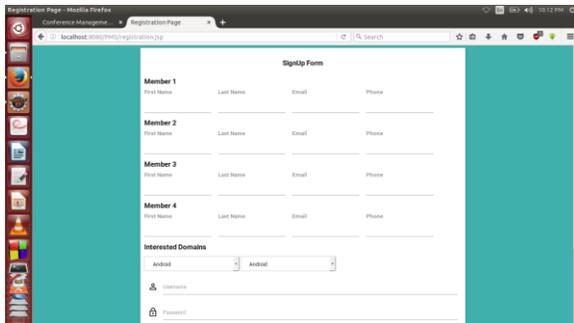

Screenshots:
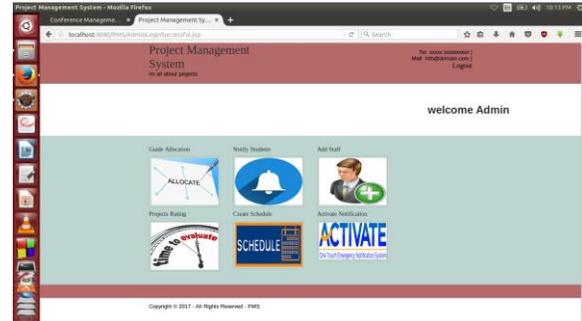

Fig-1: Home Page

Fig-2: Registration Page

Fig-3: Admin Dashboard

Conclusion:

If we in-cooperate this system in each college then the the job of project co-ordinators would be reduced on great extent. The students can also submit assignments regularly from anywhere & anytime. Automation & evaluation in this system leads to improves the project management processing. So, overall this system will automize the entire activities carried out during project development.

Future Development:

The robustness and scalability of such a Cloud Service based platform for Project Management System should make the process more automated at all levels.
This project can be broadly developed for many colleges and departments. All the project activities can be monitored through website at college level.

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