



Business Requirements Document for Automating Publication Management System

Software Technologies Project

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3 Introduction

3.1 Project Summary

3.1.1 Background

The Publication Management System (PMS) of CSE department, IITH provides all scientific publications from all the current faculties of the department. A user may browse through all the publications based on faculty name, research area, author name and year of publication.

As of now, the system is manually updated by the faculties with user log-in and uploading either BibTex or form-fill ups. This document proposes enhancements for PMS and removes the existing dependencies.

3.1.2 Objectives

- Automate the update of the existing PMS system by checking every faculty's Google scholar profile.
- Inform all the people in the CSE Department of IITH about any latest publication (via research@cse.iith.ac.in).
- Automatically extract abstract, title, authors, year about the research paper.
- Automate the creation and deletion of faculty profiles using the CSE department's faculty page.
- Show the latest publications in a side window at the PMS system's homepage.
- Fix existing bugs/issues in the existing system.

3.1.3 Business Drivers

- Research Work of each faculty needs to be added automatically to PMS from their Google-Scholar profile.
- User to look into the publications of each faculty and their areas of research.
- PMS system to periodically check for updates in every faculty's Google-Scholar Profile.
- *Development group requires impressing a Prof. Manohar Kaul to get good Credits.*

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4 System Specifications

4.1 Existing System Perspective

The aim of PMS system is to showcase the research conducted by the CSE department of IITH.

A user should be able to browse for publications by faculty, research area, publication year or co-author names. He should be able to view publication specific details like title, author name(s), abstract, conference/journal where the paper was published and year of publication. A user can also view a faculty profile where he can browse through that professor's papers.

4.1.1 Current PMS System

- *Faculty Signup* – Every faculty has to create their own profile mentioning details like, areas of interest and linked website.
- *Faculty Login* – Every faculty signs-in using the username/password created during sign-up.
- *Updates* – Every faculty after logging-in, adds information about their latest publication using either BibTex or a form fill-up.
- *Notification* – The members of the department are not notified about recent publication by their faculties.
- *Profile Deletion* – On faculty leaving the department, the Web-admin have to manually delete the faculty's profile.
- Issues/Bugs have been found during inspection of the system.

4.2 Target System Perspective

4.2.1 Assumptions

- Implementation details about the existing PMS system from CSE-IITH Web Team.
- Google Scholar allows crawling profiles using Web Crawler.
- Permission to send notification to all the members of the department (via mail).

4.2.2 Dependencies

- IITH-CSE faculty page should be regularly updated by the CSE-IITH Web team.
- Every faculty should have their Google Scholar profile.
- Google Scholar profile to get updated on every new publication.



4.2.3 Constraints

- *User centric Design* - The Graphical User Interface (GUI) should be user friendly.
- *Portable* - It should be possible to use the interface on any device with an internet connection & a web browser.
- Requires an internet connection
- Requires web-browser

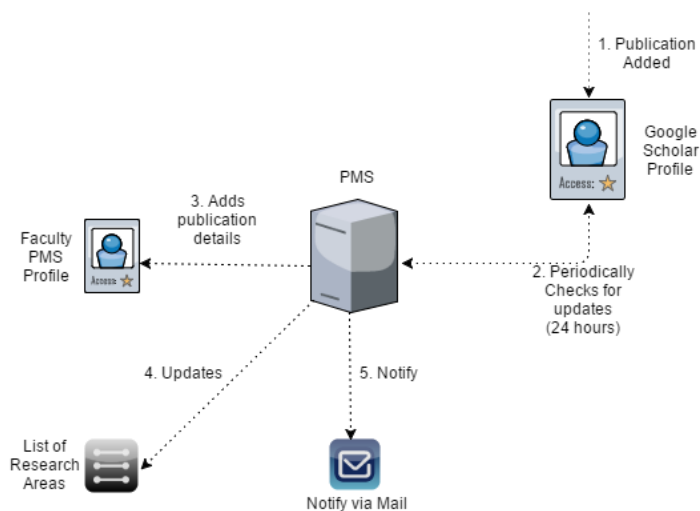
4.2.4 Principle Actors

The principal actors in PMS are:

- User (Anybody).
- System.

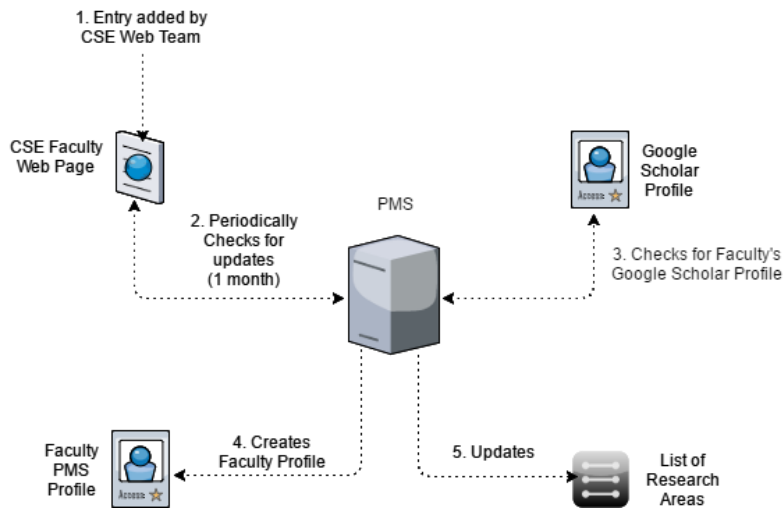
4.2.5 Flow Diagrams

- A new publication is available in a faculty's Google Scholar profile.

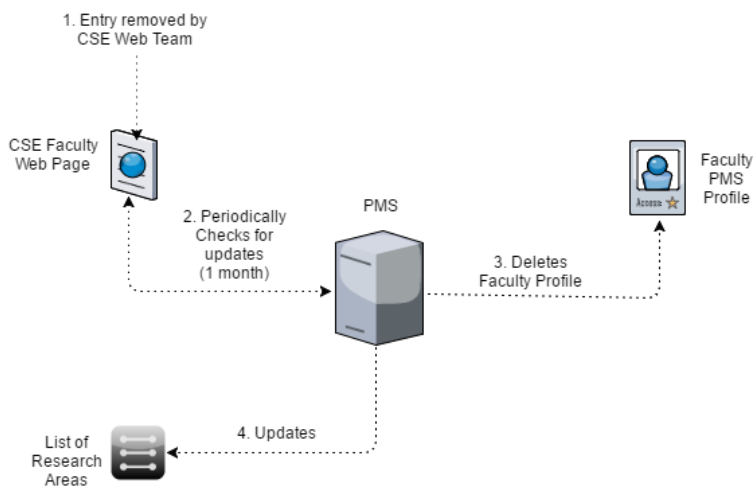




- *A faculty joins the CSE-IITH department.*



- *A faculty leaves the CSE-IITH department.*





4.2.6 Project Scope

4.2.6.1 In-Scope Functionality

- The updates of the PMS system will be done automatically - No faculty intervention will be required to update the site with recent publications.
- Automatically extract abstract, title, authors etc. from the Google Scholar page for the research paper.
- No logging-in and hence, the existing user authentication module of the system will not be required.
- For every new publication, all the members of the department will be notified with a mail
- Fix existing bugs/issues of the system.

4.2.6.2 Out of Scope Functionality

- Check paper authenticity.

4.2.7 Performance Requirements

The server machine (system) should have a good CPU and high speed internet access so that it can handle multiple users at the same time.

4.3 Assessment – Critical to Quality

- A new publication by a faculty triggers a PMS system update and notifies all the members of the department.
- Auto-management of faculty profiles.
- *Delay* - The system periodically checks for updates after every 24 hours, so a delay will be noticed since the time of the new entry in the faculty's Google scholar profile.
- A user can view the latest publications by the faculties and have an idea about their on-going research areas.



5 Functional Specification

5.1 Use Cases – User perspective

Use case 1: View Professor Profile

Pre-Condition:

- User selects a Faculty name using a drop down menu at the PMS Homepage.
- User is viewing either a list of papers or a particular paper, the faculty name is highlighted.

Main Scenario:

1. User selects/clicks on a Faculty name.
2. System redirects user to the faculty's profile page.
3. It displays details like picture, website link, research areas, list of his publications and a link to the Google Scholar account.

Use case 2: Selecting a Research Area

Pre-Condition: User is on the [homepage](#) of PMS system.

Main Scenario:

1. System shows a list of research areas.
2. User clicks on a research area.
3. System shows a new page with list of publications in that research area. The papers are sorted by date of publication.
4. System also shows a sort by ascending/descending button.
5. Each entry has the paper title, author names, and Conference/journal name.
6. If user clicks on paper title, then Use Case 3.
7. If user clicks on a faculty name, then Use Case 1. **shown**.

Commented [M3]: Discuss about the Use Case 9 in the initial draft.

Commented [M4]:
No Alternate Scenario, as research areas are displayed if there exists a publication.



Use case 3: View Paper Details

Pre-Condition: User is viewing a list of papers.

Main Scenario:

1. User clicks on a paper title.
2. System loads a new page displaying the following contents
 - Title of paper
 - Author names
 - Abstract
 - Conference/Journal/Magazine where it was published.
 - Year of Publication
 - BibTeX content.

Commented [M5]: What is the use of showing the BibTex content to the user?

Alternate Scenario: I hope all the above details of a paper will be available.

Use case 4: Search Papers

Pre-Condition: User is on the [homepage](#) of PMS system.

Main Scenario:

1. User enters a query in search bar and clicks on search. The query may contain paper title, author's name, research area and also words from the abstract.
2. System shows a new page with search results in a list.
3. System also provides filtering option.
4. User can choose multiple research areas, range of publication date and multiple author names. He clicks on refine.
5. System shows an updated list of papers.

Alternate Scenario:

1. No paper meets the search criteria - System shows an empty list.



5.2 Use Cases – System perspective

Use case 1: Adding new publication when it is available on Google scholar

Pre-Condition: System periodically checks all faculties Google scholar profile for new publications.

Main Scenario:

1. System adds the publication to professor's profile and the specific research category.
2. It also adds details to PMS website as – title, authors, abstract, name of conference/journal/magazine and the year of publication.
3. Latest publications side window at PMS [homepage](#) is updated.
4. A notification is sent to all the members of the department.

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Alternate Scenario?
The system checks for the entries with the existing set of entries, so it can only add.

Use case 2: Automatic Faculty profile creation

Pre-Condition: The CSE Faculty page is updated when a Professor joins the department.

Main Scenario:

1. Professor's profile is created which contains the same details as maintained on CSE Faculty page.
2. No notification is sent to the members of the department on adding research papers in this scenario.

Use case 3: Automatic Faculty profile deletion

Pre-Condition: The CSE Faculty page is updated when a Professor leaves the department.

Main Scenario:

1. All the publication entries along with professor profile will be deleted.



Use case 4: Updating a paper entry

Pre-Condition: Update for an existing paper at faculty's Google scholar profile.

Main Scenario:

1. System updates the publication at the professor's profile and the specific research category.
2. No notification is sent to the members of the department on updating the research paper in this scenario.

6 Deliverables

6.1 Timeline of work

- *Presentation – I:*
 1. Removal of Login module of the PMS system.
 2. On the existing set of faculties, periodically check for updates.
 3. Send notification to all the members of the department about recent publication.
- *Presentation – II:*
 1. Check for faculty joining or leaving the department and maintaining their corresponding their profiles.
 2. Latest publications to be shown in a side-window at PMS home page.
 3. Removal of existing bugs/issues.
 4. Working system integrated with the existing PMS module.



7 Appendices

7.1 List of Acronyms

PMS: Publication Management System
CSE: Computer Science and Engineering
IITH: Indian Institute of Technology, Hyderabad
BRD: Business Requirement Document
GUI: Graphical User Interface
LDAP: Lightweight Directory Access Protocol

7.2 Glossary of Terms

- BibT_EX file: A text file containing a list of faculty publications in the BibT_EX bibliography format.
- IITH CSE faculty account: An LDAP account managed by Information Services and Automation Cell, IITH.
- Publication / Paper: Both these terms are used interchangeably in this document. It means a research paper that is published in a conference or journal by one of the current faculties of the department.

7.3 Research Areas displayed at Homepage

Research areas could be: Algorithms and Theory, Data Management, Data Mining and Modeling, Distributed Systems and Parallel Computing, Hardware and Architecture, Human-Computer Interaction and Visualization, Information Retrieval and the Web, Machine Intelligence, Machine Perception, Machine Translation, Mobile Systems, Natural Language Processing, Networking, Quantum A.I., Security, Software Engineering, Software Systems.