

## N-Task Management System for Higher Educational Institutions

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**Abstract:** The ability to plan out your duties and carry them out appropriately is provided by task management, which is simply a progress monitoring system. It presents a straight path to completion and talks through each stage of the work in question. A task management tool is used to keep people, teams, or organizations organized. Setting task priorities, tracking their progression through various stages of completion, and creating analyses or reports to guide future activities and processes are all components of being organized. All the organizations will have their own in-house tools developed for the purpose. Most of the educational institutes are still using traditional approaches for managing different tasks at different levels of operational hierarchy. We have proposed an automated tool for managing the various tasks which would simplify the manual process of monitoring work progress and completion and report generation process for further evaluation. We have implemented it as a user friendly web application which has made the overall institute level task management simple and efficient.

### I. Introduction

A task management tool is used to help individuals, teams or businesses stay organized. Part of being organized includes setting priorities for tasks, visualizing the progress of tasks as they pass through stages of completion and compiling analysis or reports to direct future tasks and workflows. Depending on the need, task management tools can be fairly simple or provide incredibly in-depth information. Though they all share a core function, organizing work, there are a number of different ways to approach task management. In most instances, task management tools are represented by a grid system of rows and columns and are commonly referred to as task management boards. Task management systems also include indicators or symbols used to represent various tasks or elements of a task. These can be anything from images to sticky notes, or just data in a spreadsheet cell.

Task management is essentially a progress tracking system that allows you to plan out your tasks and execute them accordingly. It walks through each step of the given task and poses a linear route to completion. Different tasks have different phases. Each of these phases demands you complete it with a different strategy throughout your workflow. One of the secrets to completing tasks on time is to develop an understanding of their purpose and then

formulate your management accordingly. For a person to complete their tasks, it is crucial to know how to manage them. It is no secret that the best way to do this is to integrate a task management strategy. There are a couple of different phases that go into the process. Generally, the steps of task management include (1) An initial stage when the task is created, (2) The second phase is when it's assigned to someone, (3) The third phase involves its working progress, (4) The fourth phase is all about monitoring and quality control. Other than these, tasks can also be phased out when terminated, failed, or abandoned. Some of these tasks are not individually based but require teamwork or an environment of collaboration. When we talk about task management, we need to know that it is complex and requires time, attention, and effort. One more key element of task management is flexibility, which acts as a perfect shield for accomplishing your set goals. In this paper, we have discussed the task management tool that has been developed for the educational institutes to manage the day to day tasks of employees and to evaluate the task completion status of each employee within the organization. Task management improves productivity by decluttering all the unnecessary things from your daily routine. It gives you the edge over others regarding workflow and overall task completion.

## II. Related Study

How to prioritize tasks and organize one's time is covered in a number of best sellers and tools [1, 7]. The market for these products appears to benefit from people's concerns about how successfully they are setting priorities and taking care of their numerous obligations [4]. The HCI literature has also looked into personal information management (PIM; organization, note taking, reminding, and calendaring), but mainly with a focus on the issue of organizing documents, files, and notes for the purpose of reminding and efficient retrieval, rather than task management [2, 6, 9, 12, 13, 14]. Numerous studies have been done on how individuals actually use calendars

(for much more than just arranging events) [5, 16, 17]. However, this literature only focuses on But this literature focuses only on a single resource that mainly serves time management needs. And the many readings available on cognition, planning and task execution in the classical psychological literature [10, 15] have little to say about task management and planning in work practice.

## III. Proposed System

Without task management, we will not be able to organize our tasks, and without organization, the workplace would be entirely out of sync. Task management helps plan, manage, and complete a given set of tasks. The figure (1) depicts the overall architecture of the proposed task management system.

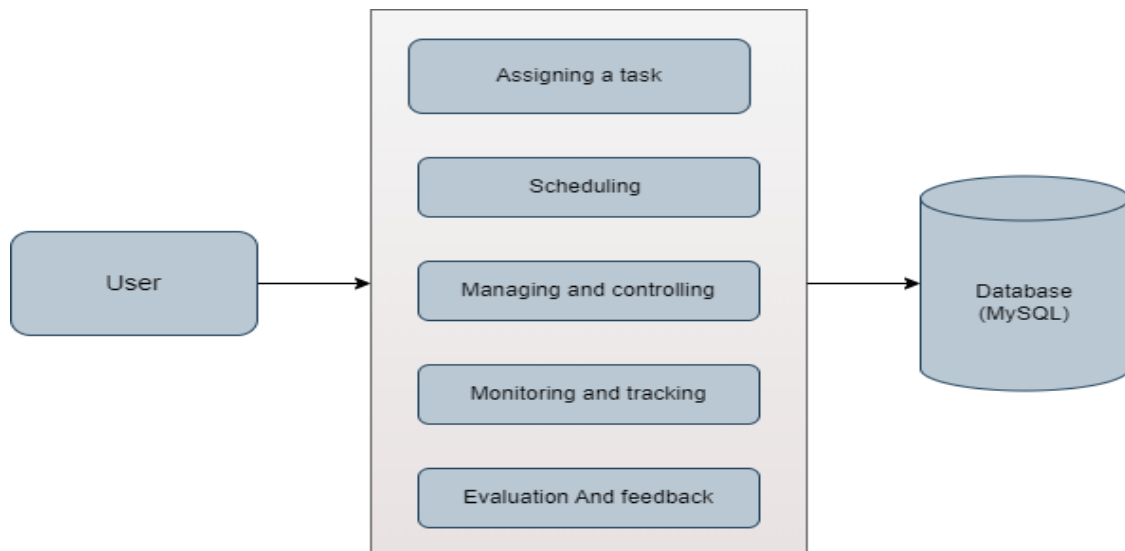


Fig 1. Architecture of Task Management System

Task management involves some critical steps that play a vital role in its functioning.

### A. Scheduling

Scheduling helps you know about your deadline and when you need to complete a task for better results. It facilitates having an accurate estimation of task completion and gives people a solid schedule to work within.

### B. Managing

Making a list of all the tasks that need to be completed is the first step in managing tasks in a task management system. The tasks can then be ranked in order of priority or urgency after being listed. An effective task management system enables users to assign tasks to team members,

set due dates, and monitor progress. This makes it easier to make sure that everyone is informed of what needs to be done and by when. Tasks can be marked as done in the task management system as they are finished. This makes sure that nothing is missed and enables team members to monitor progress. A effective task management system should also enable users to review finished jobs and evaluate.

### C. Controlling

Tasks must first be entered into the system in order to be controlled. Tasks can be categorized into projects or categories, allocated to team members, given due dates and priorities, and progress can be monitored once they are in the

system. In order to keep assignments current and guarantee that nothing slips through the cracks, it is crucial to evaluate and update them on a regular basis. Users may boost their productivity and guarantee that their work is done on time and at a high standard by properly managing tasks in a task management system.

**D. Monitoring**

To make sure that activities are finished on time, task management systems must be monitored. It entails monitoring the development of projects, spotting any problems and acting appropriately to keep things moving forward.

To assist users in staying on top of their tasks, task management systems frequently incorporate features like task status, due dates, and reminders. Due dates aid in task prioritization and guarantee that crucial jobs are finished on time, while task status enables users to easily see the task's present state. Users can set up reminders and alerts to tell them when a task is getting close to its due date, preventing them from missing crucial deadlines.

**E. Tracking**

Tracking your goals and progress is vital in task management. This helps you reflect on what you lack and what you need to do to accomplish your next task. Tracking also helps you redefine future paths to avoid repeating the same mistake you made in a repetitive task. Tracking also helps as a motivator for people, giving them a visual reference for their work completed and providing a method to see it through to completion.

**F. Feedback**

Any task management system must include feedback since it gives individuals or teams useful

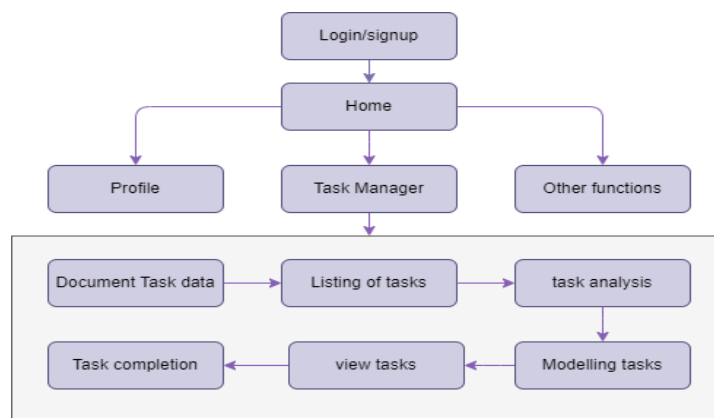
information about their performance, advancement, and areas for development. Feedback in a task management system can come from peers, team leaders, and supervisors and can take the form of comments, ratings, and progress reports. A task management system's feedback should be immediate, precise, and actionable, giving users clear direction on what they are doing right and where they need to improve. Additionally, it must be constructive and offered in a kind and encouraging way. Feedback enables people to stay on target, prioritize activities wisely, and modify their working methods or strategies to produce better results.

**G. Evaluation**

Any task management system must include evaluation since it allows people or teams to gauge the effectiveness of their efforts and ascertain whether their objectives have been met. Reviewing work progress, examining results, and assessing whether goals have been attained are common evaluation procedures in task management systems. Clear criteria and standards that are defined at the start of the project should serve as the foundation for effective task evaluation. These requirements could include things like deadlines and work quality.

**IV. Implementation And Results**

The implementation and workflow of a Task Management System is as depicted in the below figure 2. Managing a task involves various steps beginning with its documentation to completing and getting feedback based on its evaluation.



**Fig 2. Workflow of Task Management System**

A new user to the system has to register by signing-up with his credentials and has to login; through which he will be directed to the Home page having different options available to him. The user can view his profile details, can communicate with a chat box and also make announcements using the Announcement Board which all comes under the Other Functionalities mentioned above in the workflow.

In particular with the Task Manager option available in the Home page which is the main objective includes various phases in its functioning.

#### **A. Documentation of Task Data**

To start with, a user has to gather all the information related to a task and start assigning them with a form available to create a task. The details like title of the task, person to whom the task is being assigned, date of assignment, due-date, any file related to the task and description of the task to be carried out etc.. has to be detailed in the form and then a task will be created or assigned to a person.

#### **B. Listing of Tasks**

This is a feature or a phase where the tasks in a task manager are listed under three different sections like Created Tasks, Assigned Tasks and Completed Tasks. In Created Tasks the tasks which are created by the user at higher rank in hierarchy to a user at lower level are listed. In the case of Assigned Tasks the tasks which are assigned to the user by another at a higher level are listed. Whereas in Completed Tasks the list of all the tasks completed by the user are listed.

Some of the unique features of this implementation is that, as this task manager is designed at a hierarchical level, the option of Assigned Tasks List to the user at highest rank or level has been disabled. Also, the tasks which are

marked as complete in the Assigned Tasks list will get auto-deleted from this list and will be made available in the completed tasks list. Just in case if the task has been marked mistakenly or unknowingly can be unmarked easily and brought back for live tracking of the same.

#### **C. Task Analysis and Modelling of Tasks**

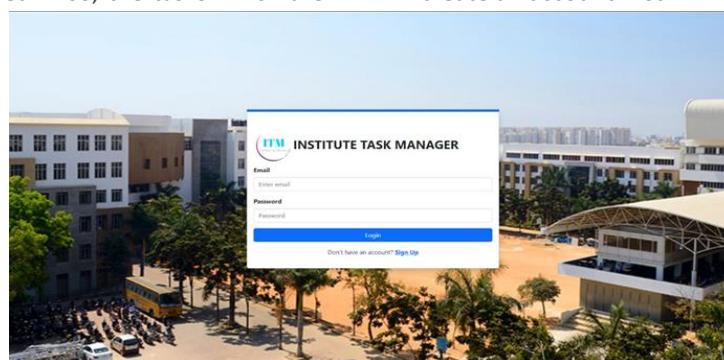
The following phase starts once a task has been assigned to a user. The Task Lists as mentioned above are modeled based on an analysis on the various tasks in terms of their priority. Prioritization of tasks is made based on Rank and Duration/ Due Date and Time of the task. The task assigned by a higher level user has more priority than assigned by a user at a subsequent level. The task with a near deadline has more priority to be completed first. Considering both factors together the system will analyze the tasks internally and provide a view of them in their priority order.

#### **D. Viewing and Completion of Tasks**

The tasks assigned or created can be viewed as mentioned in the above phases and the user can obtain the detailed data and files related to a particular task. Once the user is ready with the task assigned to him, he can add or submit the related details by uploading the contents in a file and can mark the task as completed. The assigner can view the submitted work to him and can provide feedback through any reply or comment in the same window and thus we can make sure that a proper evaluation of the task has been done.

Below are the screenshots related to the Task management System where we can understand the working of it clearly.

Fig 3. refers to the login page of ITM. A user with his login credentials like email and password can login and enter to the homepage of the system. A new user has to click on the sign-up button to create an account first.



**Fig 3. Login Page**

Fig 4. indicates the home page that a user heads after he logs in. This page contains a display of user profile details and also a view of the announcement board containing a button called

add announcement to post a new announcement. The home page also has two more options namely tasks and chat box.

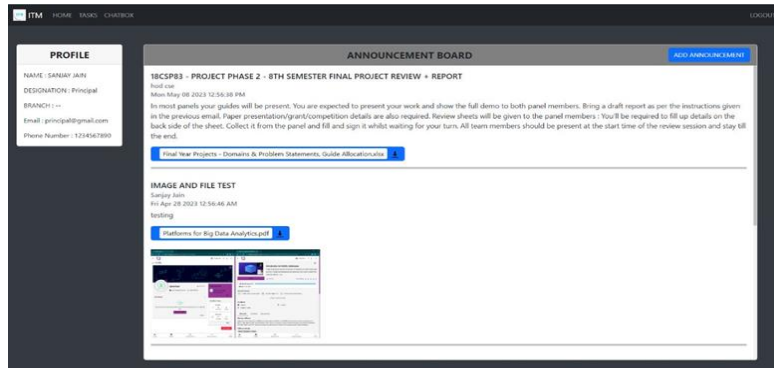


Fig 4. Home Page

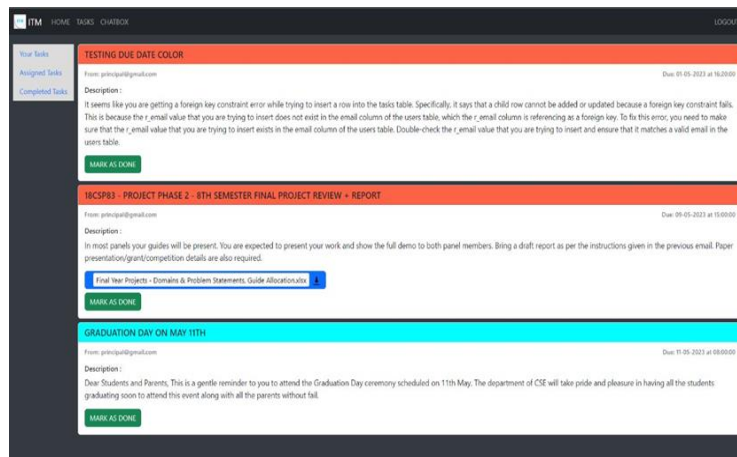


Fig 5. Your Tasks

Fig 5. depicting Your Tasks page is available when a user selects tasks option in the home page. In this page the user gets the list of tasks assigned to him with all the details in the form of text and

uploaded files along with a deadline to the tasks. A button has been provided to mark the status of the task as done when completed.

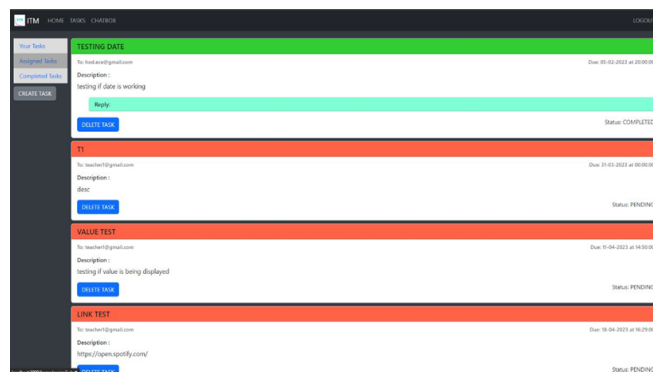


Fig 6. Assigned Tasks

Fig 6. depicts the Assigned Tasks page which contains the list of tasks assigned by the user to

others below his rank. A button named create task is also provided to assign a new task to any user.

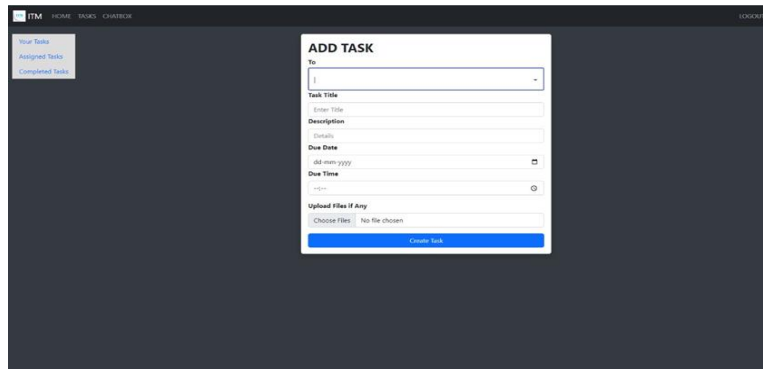


Fig 7. Add Task

Fig 7. depicts the Add Task option that arises on clicking the create task button in the Assigned Tasks page. Here we will fill in all the details and

upload files related to the task being assigned and will set a deadline for the same to be completed.

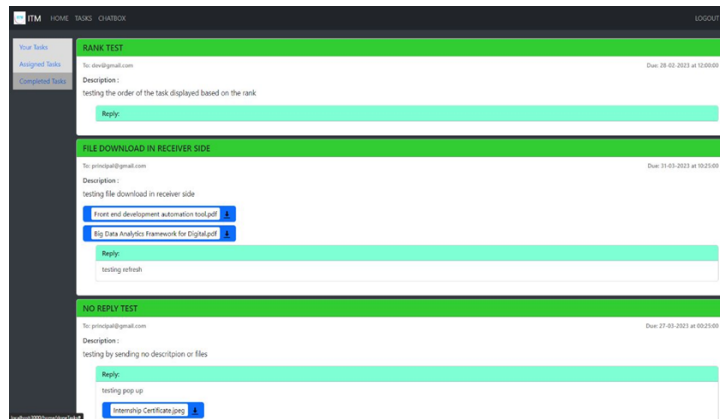


Fig 8. Completed Tasks

Fig 8. depicts the Completed Tasks page that contains the list of all the tasks that have been

completed along with the replies or comments made on the assigned task.

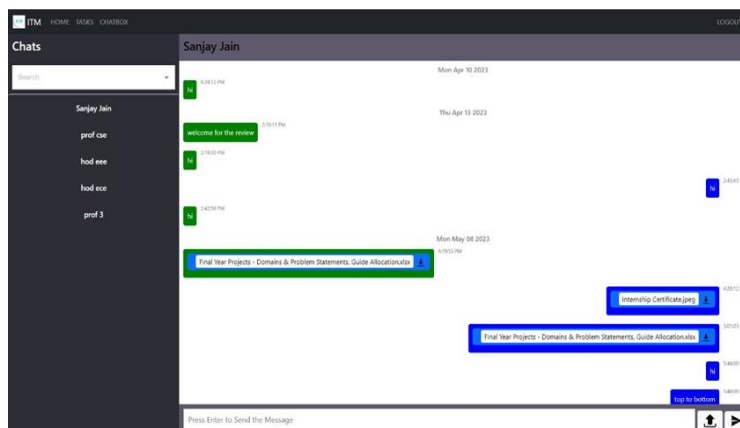


Fig 9. Chatbox

Fig 9. depicts a Chat box which is available on selecting the chat box option from home page. A search bar is provided to search any user registered with ITM and to communicate through text or can even upload files in the chat.

## V. Conclusion

In conclusion, the Online Task Management System is a crucial tool in managing the day to day tasks in college. Project managers also need to take advantage of the effectiveness of project management software to ensure that the project they are carrying out becomes successful. The college will implement this project on their server. This will allow the students, hod, teachers and assistants to login and register and get notifications from college. This system will allow effective management of human resources available to the college. It also ensures effective time management and provides an interface to communicate on a college provided platform. Effective notification management is also a crucial benefit of this system. The college staff will be able to notify every student about recent events or important activities taking place in college. The Online Task Management System also provides a simple messaging service which will allow staff of the college with better communication options to use and will also allow college to monitor their staff's efficiency. The most important purpose of the Online Task Management System is to provide a platform to assign various types of tasks to the staff members of the college.

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