

**NATIONAL INSTITUTE OF TECHNOLOGY,
TIRUCHIRAPPALLI**

SUMMER INTERNSHIP REPORT

MAY 19 2020 – JUNE 19 2020

**PROJECT MANAGEMENT
APPLICATION**

Submitted by:

ANJUM MEHNAZ

110117010

Instrumentation and Control Engineering

Company:

CITICORP

ACKNOWLEDGEMENT

I take this opportunity to express my profound gratitude and deep regards to everyone who guided me in the right path and helped in the successful completion of this course.

This acknowledgement transcends the reality of formality when we would like to express deep gratitude and respect to all those people behind the screen who guided, inspired and helped me for the completion of our project work. This project would add as an asset to my academic profile. I would like to express my thankfulness to my project guide, for their constant motivation and valuable help throughout the development of this project by providing us with required information without whose guidance, cooperation and encouragement, this project couldn't have been materialized.

And lastly, I express my deepest gratitude to everyone who helped me both directly and indirectly during the entire duration of my internship.

ANJUM MEHNAZ

OFFER LETTER

April 14, 2020

Akumalla Anjummehnaz

Dear Akumalla,

Many congratulations on being selected for the prestigious internship program at Citicorp Services India Private Limited. We trust you will find this internship opportunity both challenging and rewarding.

As a part of Citi, the leading global bank, you will have a learning experience about best-in-class products and services to our customers and leveraging Citi's unparalleled global network to enable progress. As you go through the internship period, in addition to the formal training provided, the on-the-job training will enable you to learn, experience and gain exposure to the decision-making scenarios.

You would have submitted all the formal documentation, by now and must be gearing up to undergo the initial orientation at Citi. Post joining, please have a discussion with your manager and chart down the various steps involved in your project with their respective timelines. You are encouraged to go through the Citi Leadership Standards and learn more about the breadth and globality of Citi. We will be pleased to provide the support you require.

The duration of your internship is for temporary period of 2 months. During this period, you will be paid a consolidated stipend of INR 40,000 per month. Issuance of Internship certificate is subject to successful completion of internship. In the event if for any reasons you are unable to complete internship, due to incompleteness, the Internship certificate will not be issued. Also, Citi will not be providing accommodation to the interns. Please report to Sathishkumar N, Citicorp Services India Private Limited, Ramanujan IT City, Neville Tower, 4th Floor, Rajiv Gandhi Salai (OMR), Taramani, Chennai 600113.

You may email him at sathishkumar.n@citi.com and reach him on 04466293869.

The internship opportunity serves as one of the critical components of our full-time recruitment decisions as well. If you have any questions, please feel free to get in touch with me. All the best.

Thanks and regards,

Yogesh M
Assistant Vice President
Human Resources

ABSTRACT

In order to ensure a company's smooth workflow, all the projects shall have a tracking mechanism so that the projects can be monitored in a micro level. This helps the users of different levels in the company to understand the workflow and the performance of an individual involved in the project. A **Project Management Application** (PMA) ensures to track the status of any project based on priority and severity. With the timeframe set for any task, this application helps in accessing the information of any project along with the status provided by individuals working under the project. Amount of work done on any particular project, on any particular day, done by any particular referee can be accessed using this application. This application can abstract a better performance compared to managing the tasks manually.

CONTENTS

1. INTRODUCTION.....	6
1.1 Objectives.....	6
1.2 Scope of the Project.....	6
2. PROBLEM STATEMENT AND METHODOLOGY	6
2.1 Problem Definition.....	6
2.2 Methodology	7
2.2.1 Existing System.....	7
2.2.2 Proposed System	7
2.3 Techniques	8
2.3.1 Project Plan.....	8
2.3.2 Team Setup.....	8
2.3.3 Tracking.....	9
3. RESULTS AND DISCUSSIONS	9
3.1 Software Display	9
3.2 User Registration and Login	10
3.3 User Profiling	11
3.4 Task Profiling.....	12
3.5 Timesheet Entry	13
3.6 Tickets	14
4. CONCLUSION	15

1. INTRODUCTION

Project Management Application (PMA) written in java is used for project status tracking and project management. Projects in company level can be split into sub-projects and assigned to teams. This project tree and work allotment can be recorded in various levels of developer, team leader, manager, and administration (admin).

1.1 Objectives

It is to schedule the teams across projects taking employee's work structure into account, and planning ahead for upcoming projects with forecasts based on comparable projects and estimate deadlines more accurately.

1.2 Scope of the Project

Any company level project requires proper management of its tasks. PMA is customizable project management system. All projects are logged into a central database and each one goes through a number of workflows (processes). Workflows control the status of the project as well as the rules by which it transitions to other statuses.

- Interactions over processes and tools
- Working software over comprehensive documentation
- Responding to change over following a plan
- User flexibility and customization are key components of the system.

The project management workflows represent processes in your organization, and they can be customized for projects, and subtasks. Anything that needs to be put through a process or multiple processes can be part of a workflow.

2. PROBLEM STATEMENT AND METHODOLOGY

2.1 Problem Definition

Project planning manually leads to miscommunication and data corruption. In order to organize the data avoiding any errors involved, secured planning software is required to make sure no invalid data is entered or data corruption is involved. Customized organizing of data with user-interfacing and easy approaching requires software as Project management system which boots up team productivity. Such applications involved and procured with reliable data entry methods avoid data corruption and thereby saving time for users. Multiple tasks can be performed at the same time, this type of application is flexible and secured to use.

2.2 Methodology

2.2.1 Existing System

Manually entering and storing data might lead to data corruption and miscommunication among the working departments. To avoid this and to make interfacing between user and the working project easy, system software needs to be developed for easy interfacing and communication.

2.2.2 Proposed System

It's great for any team that needs to collaborate and work through issues in an orderly manner. It covers the project management basics with a comprehensive tools suite, such as project planning, task creation and management, and reporting.

Complex issues are made easier to handle by splitting them into various subtasks. Each subtask is treated as a separate issue. These subtasks can be assigned to different team members, given deadlines, and customized even further by giving them their own workflow.

Using subtasks makes it easier to gauge the progress of the project, and helps developers better apportion their time. By creating concrete steps for each issue, the entire project can be broken down into small steps.

The project management capabilities rely on workflows. These workflows represent processes in the organization, and control the rules used to transition project tasks to different workflow stages.

For instance, tasks might begin in a pending stage. A task moves to an in-progress state when a team member works on it until the task reaches a completion stage, when the work is done. PMA allows you to customize workflows to meet your organization's needs.

Customizing your workflows lets you determine how issues will transition between statuses, which have the authority to make those transitions, the conditions under which they happen, and which screens use those workflows. Custom workflows are one of most powerful features of the project management.

The Database is the backend done using SQL and frontend done with Java using Eclipse IDE. The backend and frontend are connected by passing queries to the backend and getting back the database into the tables/elements in the frames.

2.3 Techniques

2.3.1 Project Plan

Every project requires planning. PMA offers the ability to sketch out a project plan for a time-based project, or a roadmap for ongoing, iterative.

- Marking the most important tasks with a high priority.
- Setting due dates.
- Break up larger tasks into sub-tasks.
- Assign each task to a teammate, or put it in your project backlog to address when required.

Once you've created your tasks, assemble them into your project plan, identifying and mapping dependencies to ensure these tasks don't become blockers for your team.

The software also lets you utilize the graphical representation of the status of the project. Also, distinguishes tasks that are due date highlighted in red, completed tasks highlighted in yellow, on-progress tasks in green, not-yet-started tasks in blue.

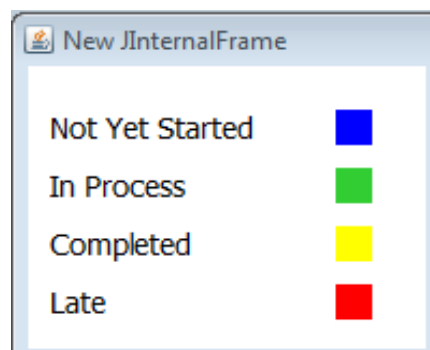


Figure 1: Project States

2.3.2 Team Setup

With a plan in hand, it's time to parse out work to initiate project execution. Before that, access to elements in the application is needed.

Not all project team members need equal access to PMA. Some use it only to track work and complete tasks, while the PMA administrator configures its settings, connections to third-party apps, and other functions that require unlimited access.

Permission schemes allow you to create a set of default permissions to apply to the users, saving time so you don't have to implement permissions to users individually.

You can set permissions so that some individuals cannot view specific tasks or pieces of information. This feature is useful when employing contractors or other users outside of the company to prevent them from viewing sensitive business information.

When a project is assigned, this application enables us to you monitor team capacity so you can assess if a person's workload is too much or too little.

2.3.3 Tracking

PMA offers Time-tracking capabilities enable you to track the time each task takes.

For greater visibility and convenience, PMA's default dashboard is customized to highlight the key information around your project.

A calendar view or a pie chart breaking down status across all tasks can be made visible on Home page in the application. The progress bar of the tasks makes you easily interpret through visuals about the status of completion of the project.

My Accounts of any user shows all the main tasks and subtasks assigned to him/her along with the deadlines for every project clearly aligned, along with the time sheet entry enables the admin to note the working hours of any employee. The last login displayed on screen for every user helps in keeping track of active hours of the employee.

3. RESULTS AND DISCUSSIONS

3.1 Software Display

The application is an icon when clicked opens up a login page. For new users accessing the app for the first time, have to undergo registration process and then login with the credentials through the login page. The windows and elements added to these tool-kits that display these pages are from **Graphical User Interface (GUI)** designing tools which contributes to the visual backgrounds created by them.

GUI in java gives programmers an easy-to-use visual experience to build Java applications. It is mainly made of graphical components like buttons, labels, windows, etc. through which the user can interact with the applications. Swing GUI in Java plays an important role in building easy interfaces.

Swing in Java is a Graphical User Interface (GUI) toolkit that includes a rich set of widgets. It is a part of Java Foundation Classes (JFC), which is an API for Java programs that provide GUI. Swing includes packages that let you make a sophisticated set of GUI components for your Java applications and it is platform independent. The Swing library

is built on top of the **Java Abstract Widget Toolkit (AWT)**, an older, platform dependent GUI toolkit. You can use the Java GUI components like button, textbox, etc. from the library and do not have to create the components from scratch. In Java applications, the components that comprise a GUI (Graphical User Interface) are stored in containers called forms. The Java language provides a set of user interface components from which GUI forms can be built. The IDE's GUI Builder assists you in designing and building Java forms by providing a series of tools that simplify the process.

The Software used is **Eclipse** IDE to code in java. Since using IDE, time and efforts are saved, Navigation made easier, it is preferred to use in case of medium or large projects. With Auto-Completion option given and due to inbuilt code written for GUI tools, it is flexible to write the code and design as well. In case of errors, debugging is made easier and navigated directly to that particular line of code. Downloading of required packages online is at ease.

3.2 User Registration and Login

The application opens up a login page with two buttons as register and login. In case of a new user, the user has to register first to login into the system. For logging in we need to enter credentials that are stored in the database.

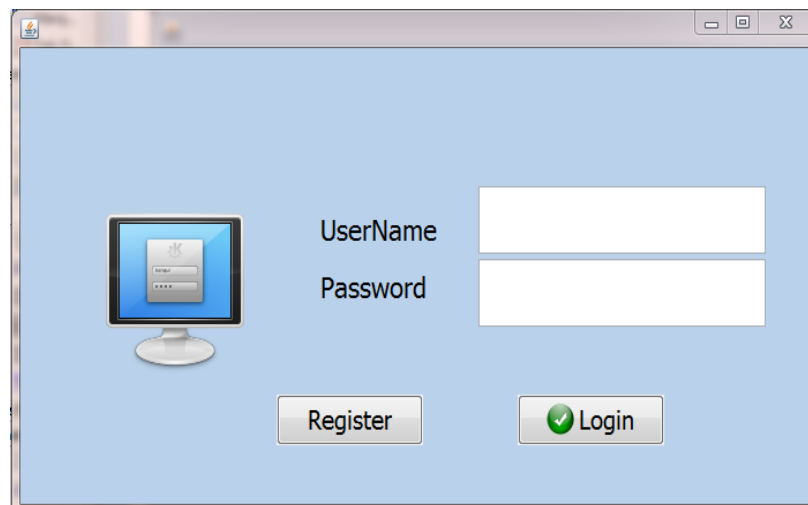


Figure 2: User Registration and Login

While registering the new user, all the information about the user is stored in the database using SQL in the form of tables (RDBMS). This information is then acquired with the help of queries from the database and checked with the entered credentials. If these two matches, then the application redirects into the main page.

3.3 User Profiling

This section consists of adding, deleting, updating information about a user through clicking the menu items ‘Add User’, ‘Delete User’, ‘Update User’. This section of options is accessible specifically for higher level managing individuals such as admin or manager but not to a developer. After clicking, new frame pops up differently designed for every kind which consists of necessary information needed to execute that query. This information when clicked on ‘Submit/Save’ button in that frame, the execution takes place in the database.

Adding a user is the requirement for the admin or manager to give access to any user directly. Same for updating the information of any user such as updating the employee level from developer to team leader can be done.

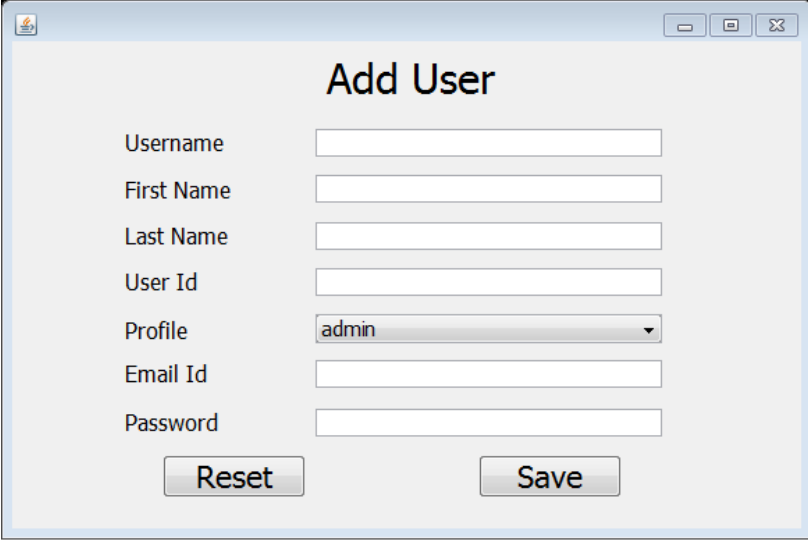
A screenshot of a web application window titled "Add User". The window has a light gray background and a standard Windows-style title bar with minimize, maximize, and close buttons. The form contains several input fields: "Username", "First Name", "Last Name", "User Id", "Profile" (a dropdown menu with "admin" selected), "Email Id", and "Password". At the bottom of the form are two buttons: "Reset" and "Save".

Figure 3: Add User

Deleting the information of a user requires only the employee id of the user and all the tables in the database related to this user will get deleted from the database.


A screenshot of a web application window titled "!Delete User!". The window has a light gray background and a standard Windows-style title bar. The form contains a single input field labeled "User Id*" and a "Delete" button below it.

Figure 4: Delete User

Changing password of a user is authenticated in the application. This after entering required data, changes the database values after passing a command using sql query.

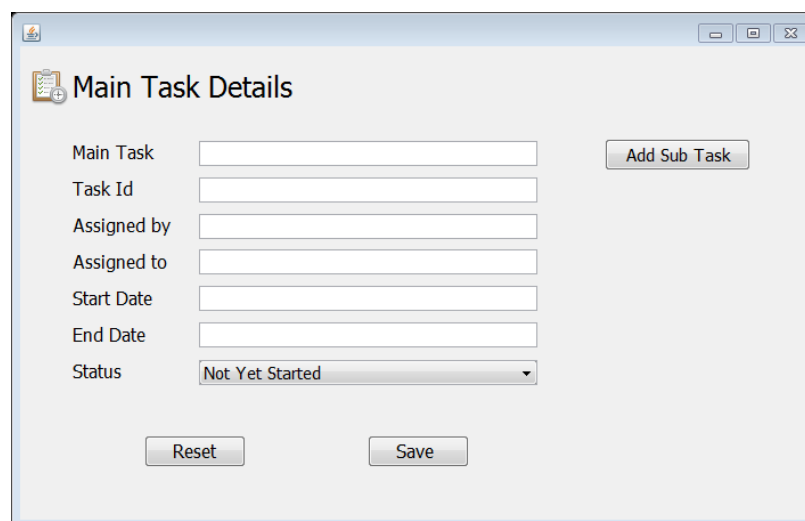


The screenshot shows a window titled "Update Password". Inside the window, there are two text input fields. The first is labeled "User Id" and the second is labeled "New Password". Below these fields is a button labeled "Update".

Figure 5: Change Password

3.4 Task Profiling

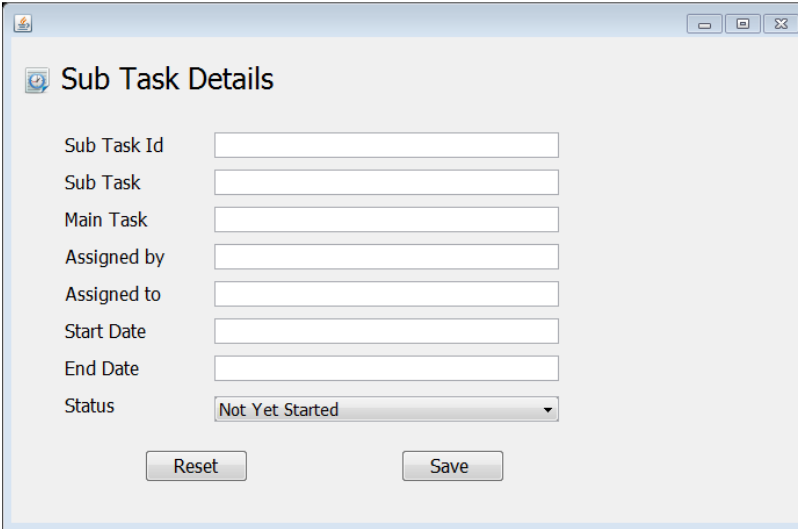
This section consists of adding, deleting, updating information about a project/task through clicking the menu items 'Main Task', 'Sub Task'. Main task directs to adding a new main task to the database, and updating, deleting any task. The 'Submit' button passes a query to the database to store the information about that task. In case of any error or wrong entry such as duplicate task Id or task name leads to error message popping up stating- "Invalid Data" and after closing the message pop-up all the information filled will be wiped out to fill new and valid data. Adding a Main task:



The screenshot shows a window titled "Main Task Details". It contains several input fields: "Main Task", "Task Id", "Assigned by", "Assigned to", "Start Date", "End Date", and a "Status" dropdown menu. There are also three buttons: "Reset", "Save", and "Add Sub Task".

Figure 6: Main Task

Adding a Sub task:

A screenshot of a web application window titled "Sub Task Details". The window contains a form with the following fields: "Sub Task Id", "Sub Task", "Main Task", "Assigned by", "Assigned to", "Start Date", "End Date", and "Status". The "Status" field is a dropdown menu currently showing "Not Yet Started". At the bottom of the form are two buttons: "Reset" and "Save".

Sub Task Id	<input type="text"/>
Sub Task	<input type="text"/>
Main Task	<input type="text"/>
Assigned by	<input type="text"/>
Assigned to	<input type="text"/>
Start Date	<input type="text"/>
End Date	<input type="text"/>
Status	<input type="text" value="Not Yet Started"/>

Figure 7: Sub Task

3.5 Timesheet entry

Major advantage of this application is this section of adding timesheet information of the user as per daily basis. The records of work done by an employee for a particular task can be recorded and time line analysis can be prepared week-wise for better performance.

Any delay in the work or when the time limit exceeds for any project, the corresponding developer working on that task, team leader and the manager get notified through a display message showing the over-due tasks as per mentioned date and time.

Timesheet Entry

Day 1 Month 1 Year 2020

Main Task Name	Sub Task Name	Hours	Work Done	Other
ProjectTask1	Ps1			

User Id

Submit

Figure 8: Timesheet

3.6 Tickets

Any request made from employee side to the admin or management can be made through tickets. This can be software update or requesting any hardware permission for the necessity. Passing tickets and their information in display helps in interaction among the users and circulation of data about various departments. The workflow among various departments can be interpreted from the ticket lists.

Filtering of tickets helps in checking required list using search operation.

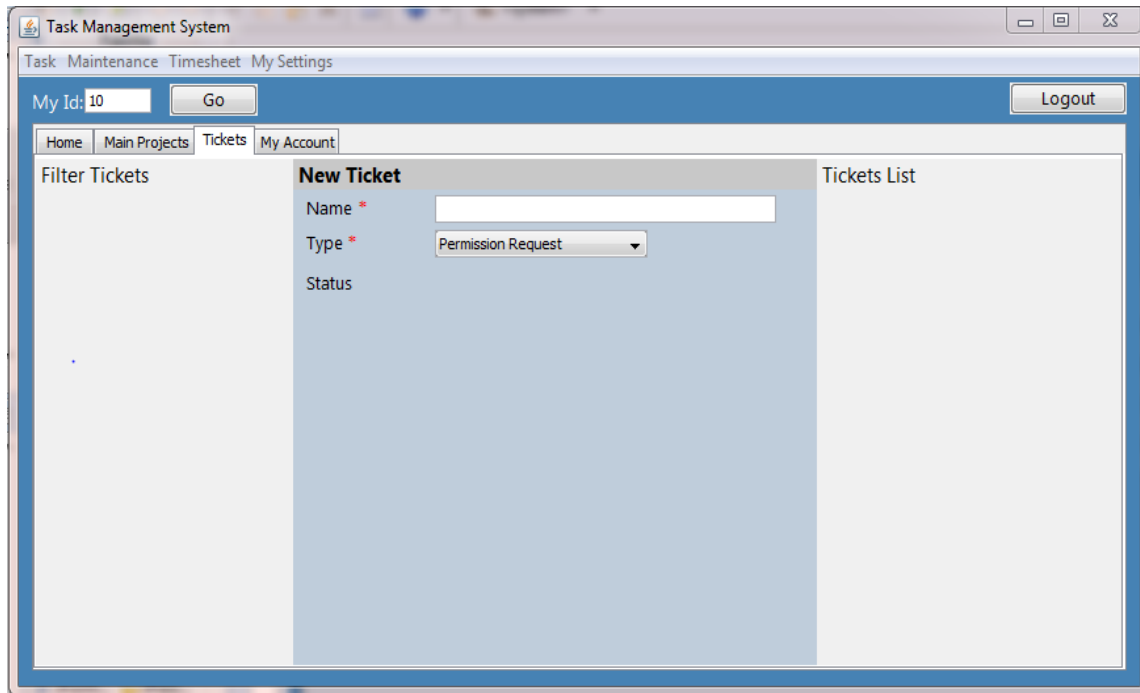


Figure 9: Tickets

4. CONCLUSION

It's great for any team that needs to collaborate and work through issues in an orderly manner. Also, any department can use its project management capabilities effectively. It provides a central system for employees to check on tasks they've been assigned and appreciate the detailed reporting tools. This application ensures smart and effective working environment.