MAD LAB PROJECT SYNOPSIS

Title: NextUP: A Project Management Tool

07.05.2021

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Abstract

NextUp is a Project Management tool which will facilitate easier job scheduling,task completion, faster planning and help you keep track of deadlines. It aims to help you keep track of day to day tasks and also lets you add in extra work as and when necessary.

Introduction

NextUP is a Project Management tool that helps track the progress of a project using a stage system. It aims to improve the productivity in a project and also implement a structure for project task segregation. We aim to help users complete their personal as well as group tasks using this application.

Problem Statement

A few problems our application attempts to overcome:

1. Creating a common workspace to track project's progress.
2. Ease of access for task completion.
3. Timely completion of group projects.
4. User Allocation tasks in a given project.
5. Grouping of tasks under right stages for proper management.
6. Ease of addition of new employees/users to the project.

Objective

The primary objective of our project is the successful development of the user's project's procedures of initiation, planning, execution, regulation and closure as well as the guidance of the project team's operations towards achieving all the agreed upon goals within the set scope, time, quality and budget standards.

Proposed Methodology

For proper management of the various tasks carried among several users in a project, it is important to categorise the tasks into various stages for clarity of implementation. The 4 important stages we divide the tasks into:

1. Ideation
2. Planning
3. Development
4. Testing

After completion of the above stages, the task is sent to the analysis stage where it can be used for further review.
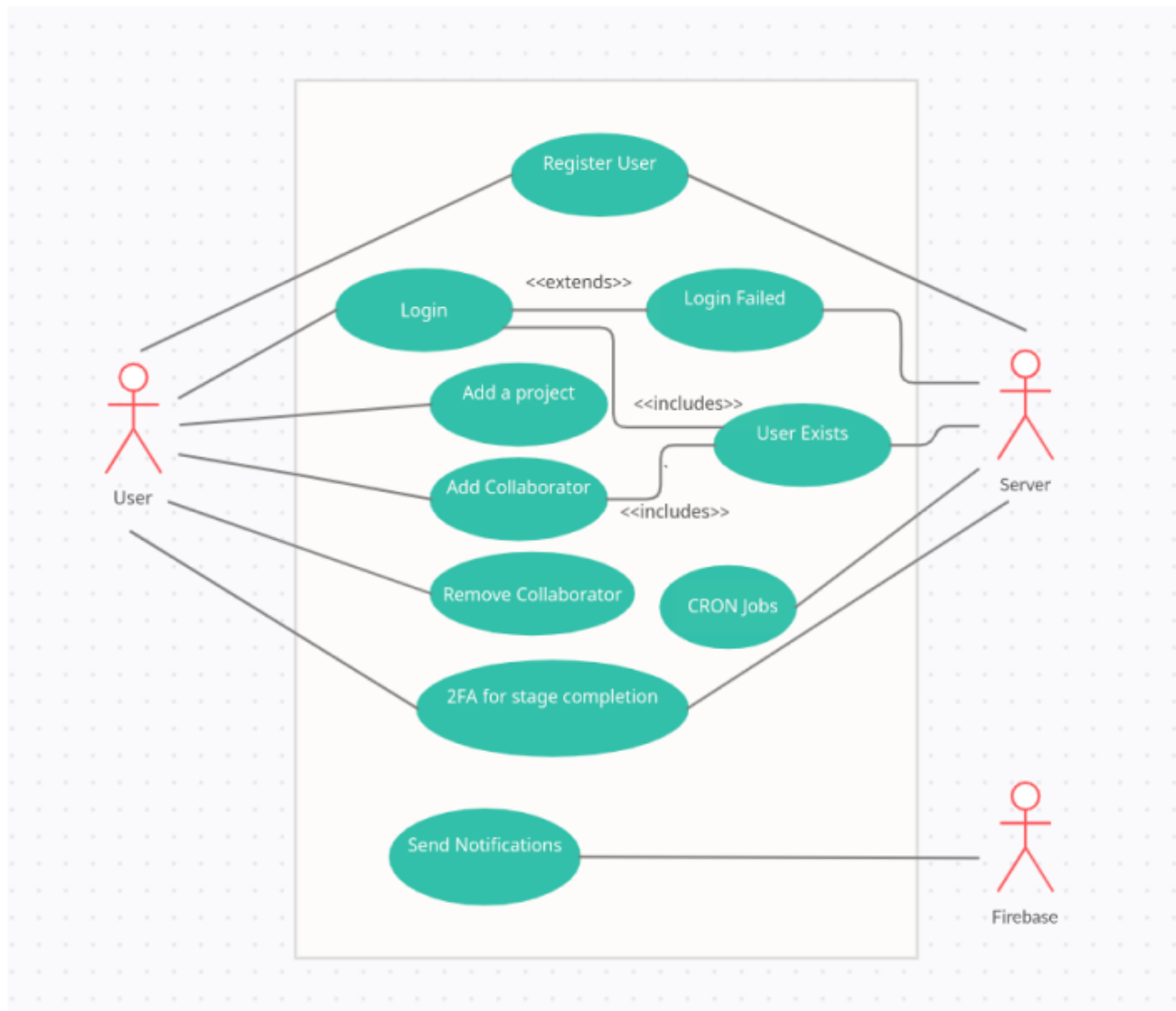
Figure 1: Use Case Diagram for NextUP: PM Tool

Use Case Specifications:

1) Add Project: After authentication of the user, he/she is allowed to create a new project. This includes 4 major stages before the analysis i.e Ideation, Planning, Development and Testing. One can only move to the latter stage after completion of the former.

2) Two Factor Authentication: This use case deals with the confirmation of completion of a given stage, to move to the next. It is an essential task, as you cannot traverse backward to the previous stages once done so. It is implemented using a mailing service via the backend.
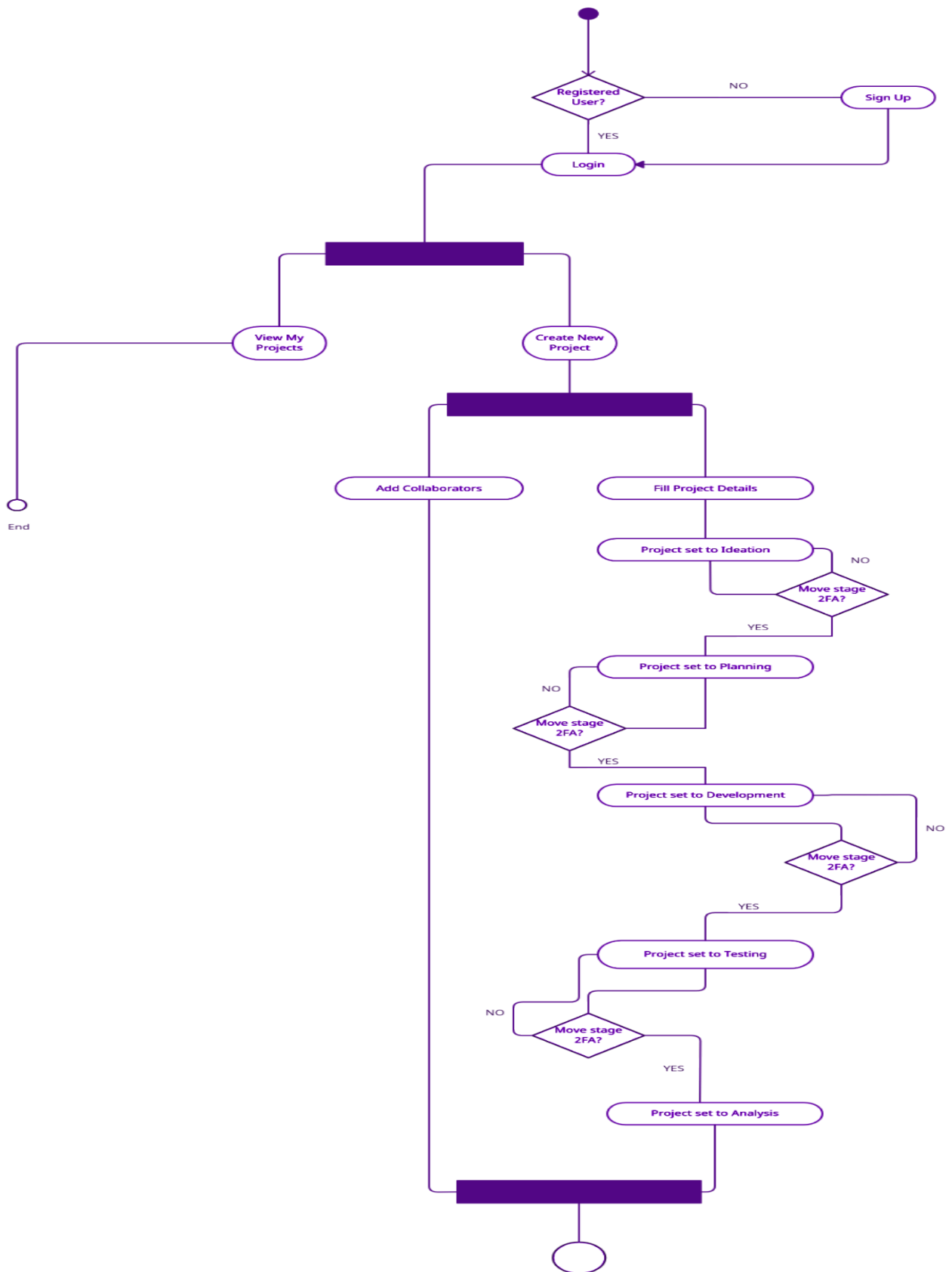
Figure 2: Activity Diagram for NextUP: PM Tool

As given in the above use case and activity diagram, the following features can be listed out:

- There are four stages in each project: Ideation, Planning, Coding/Development, Review, Closure/Analysis.
- When a user opens the application, and creates a new project, He puts in the details such as title, duration, deadline, requirements and personnel.
- This is then set up in the Ideation phase. Once ideation is complete, then the user needs to initiate completion, which is a 2FA using his email, as once the stage is completed, you cannot go back to it.
- Similarly, it moves to the subsequent phase until the Analysis stage.
- The application will consist of two tabs: In Progress & Completed. The project will be in the In Progress tab for the first four stages. The projects in the Analysis stage are placed in the completed tab.
- After each stage completion, a push notification will be sent to the respective users of that project using a firebase plugin.
- CRON jobs will provide daily reminders using push notifications.

Tech Stack for the Mobile Application:

- Flutter (Written in Dart Code)
- State Management tool, i.e., MobX OR Inbuilt State Management of Flutter

Tech Stack for the Server Side API:

- Node.js (JavaScript's Runtime Environment)
- Firebase (For in-app Push Notifications about deadlines and stage completion
- MongoDB (To store stage progression and also track multiple projects)

Team and Individual Responsibilities

Name	Registration Number	Roll Number	Semester and Branch	Batch
Saksham Mehta	180953172	33	CCE-A Sem 6	2
Swadhin Routray	180953212	38	CCE-A Sem 6	2
Aryaman Singh	180953260	44	CCE-A Sem 6	2

Saksham Mehta:

- Implementation and Design of Splash Screen.
- Implementation and Design of User's Projects Screen.
- Implementation of List of collaborators.
- Developing the project's progress Screen.
- Design and Implementation of Forgot Password Screen.

Swadhin Routray:

- Creation of a custom API for implementation of create project, add collaborators, moving stages using OTP.
- Setting up a mailing server for sending OTP based emails using AWS SES.
- Sending notifications using Firebase Cloud messaging.
- Implementing 2FA functionality.
- Design and Implementation of adding a collaborator screen using.
- Developing the register user screen.

Aryaman Singh:

- Basic UI/UX design of the Application.
- Implementation of Individual Project's Screen.
- Implementation of individual Kanban Stage widgets for a particular project screen.
- Developing the progress screen.
- Design and Implementation of Login Screen.

All three members worked on the integration of their individual screens with the API.