# Project Report On Project Monitoring and Mentoring System

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# Submitted to Department of Computer Science & Engineering U V Patel College of Engineering



**Year: 2019** 



#### **CERTIFICATE**

This is to certify that the report entitled "**Project Monitoring and Mentoring Framework**" by Bharat Patidar (15012101004), Darshan Patel (15012121011), Harshil Shah (15012121025), Nilakshi Sahai (15012111009) & Viveka Kumar (15012121034) of Ganpat University, towards the fulfillment of requirements of the degree of Bachelor of Technology – Computer Science and Engineering, is record of bonafide final year Project work, carried out by them in the CSE Department. The results/findings contained in this Project have not been submitted in part or full to any other University/Institute for award of any other Degree/Diploma.

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Place:	
Date:	

#### **ACKNOWLEDGEMENT**

A major project is a thriving opportunity for learning and self- development. I consider myself fortunate and revered to have so many magnificent people help me through in completion of this project. First and foremost, I would like to thank **Dr. Hemal Shah**, Head of Department, Computer Science and Engineering, who gave us an opportunity to undertake this project. I heartily thank our internal project guides, **Prachi Pancholi**, Professor and **Rahul Shrimali**, Professor, Department of Computer Science and Engineering for their guidance and suggestions during this project work despite of busy schedule. I would not forget to remember **Mihir Parekh**, who took keen interest in our project work and guided us all along. We do not know where we would have been without his help. The CSE department also monitored our progress and guided wherever needed. We choose this moment to acknowledge their contribution gratefully. We are also grateful to the Lab Staff for their kind help. We really appreciate all the Guides that frequently provided us their official data.

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#### **ABSTRACT**

The GNU PMMS is a visionary project and a step towards the Digital India Campaign of our revered Prime Minister Narendra Modi. This is a step of Ganpat University towards digitizing the project related activities right from Team Registration to generation of Completion Certificate. Various activities related to Projects made by all the students of Ganpat University from various faculties such as Engineering, Management, Pharmacy, Architecture and many more throughout the academic journey of a student. Different types of processes and their respective stages have been designed based on needs of different programmes. This prestigious project aims to be an all-round solution to the needs of students as well as faculties. Right from uploading team registration document and getting all the approvals along with getting approvals and comments at each stage of the project and evaluation for each stage along with its comments and final grading at the end/ last stage of the project is what this system aims to provide.

# **INDEX**

1.INTRODUCTION	1
1.1. Introduction:	
2. SYSTEM ARCHITECTURE AND DESIGN	
2.1. Web Site	
2.2. User Management	
2.3. Dashboard and other pages	
2.4. Wireframes	
3. DATA DESIGN	
3.1. List of tables	
3.2. ER Diagram	
4. TOOLS AND TECHNOLOGY	
4.1. Frontend Technologies	
4.2. Backend Technologies	
5.IMPLEMENTATIONS	
5.1. Creating Models	
5.2. The Admin Panel	
6.FUTURE SCOPE	33
6.1. Future Scope	

Figure 2.1 login	9
Figure 2.2 register	9
Figure 2.3 forgot password	10
Figure 2.4 password reset	10
Figure 2.5 internal/external faculty dashboard	11
Figure 2.6 internal /external faculty view project	12
Figure 2.7 student enrolling for project	13
Figure 2.8 student dashboard	
Figure 2.9 student profile page	15
Figure 2.10 faculty profile page	15
Figure 2.11 external faculty profile page	16
Figure 2.12 change password	16
Figure 2.13 student history	17
Figure 2.14 super admin dashboard	18
Figure 2.15 term master	18
Figure 2.16 student master	19
Figure 2.17 stream master	19
Figure 2.18 role master	20
Figure 2.19 program master	20
Figure 2.20 faculty master	21
Figure 2.21 edit term master	21
Figure 2.22 edit student master	22
Figure 2.23 edit stream master	22
Figure 2.24 edit program master	23
Figure 2.25 edit faculty master	23
Figure 2.26 edit department master	23
Figure 2.27 edit college master	24
Figure 2.28 department master	24
Figure 2.29 college master	24
Figure 3.1 ER Diagram	27

1. INTRODUCTION

#### **CHAPTER 1 INTRODUCTION**

#### 1.1. Introduction:

GNU Project Management System - GPMS is a Web app which will help colleges and universities to keep track of the ongoing projects and maintain history.

'GNU Project Management System - GPMS' is a Web app which will help in tracking the progress of various projects in colleges and universities by the students and faculties. It will also help keep record of older projects.

#### This web app will:

- help in tracking progress of project
- help faculty to observe and keep track of their students' progress
- allow faculty to give grades and students to view them
- have ability to include all types of projects
- modify them according to the needs
- help in managing all the required documents of a project
- display project-based statistics
- maintain history of previous projects for reference of students/faculties.

#### **The objective of GPMS portal** is to develop a system for:

- helping the students to get appropriate help
- get mentoring online
- and to help them work more systematically on their project.
- This will be used for all projects being carried out by the students in all the colleges/institutes affiliated with GNU
- This platform will help the students to **remain in active contact** with their team members, their faculty guide and industry-mentors (if any).
- On the site, the students will be able to update their progress in the project and on which the guide & the external mentor (if any), can comment on the status, progress and problems.
- This will increase collaboration and co-creation while improving novelty of their work
- PMMS is a platform which covers multiple activities being carried during entire period of study of their respective field
- It covers activities such as:
  - o student registration
  - o team formation
  - o Periodic Progress Report (PPR)

- o Patent Search & Analysis Report (**PSAR**) generation activity
- Design Engineering Canvas activity
- o Business Model Canvas (BMC) and its report upload
- o Patent Drafting Exercise (**PDE**)
- o Final project report upload
- **o** Completion Certificate generation
- Various functionalities have been generated on GPMS platform for catering the need of students, faculty, project guide and external mentor. And further more features will be kept on adding to make it more user friendly and result oriented.

2. SYSTEM ARCHITECTURE AND DESIGN

#### CHAPTER 2 SYSTEM ARCHITECTURE AND DESIGN

#### 2.1. Web Site

Web Site Options/Features/ Modules

- Dashboard
- Forgot Password Page
- Login page
- History page

#### 2.2. User Management

#### • User Registration

Registration of External Mentor will be handled by system, and data of registered students and faculties will be retrieved from Ganpat University Database.

#### • User's Login

#### o Login:

- The login page will have tabbed forms, tabs being Student, Faculty, or External Faculty each form will have fields for email id and password and buttons for login and forgot password.
- After entering the correct registered mail id and password and clicking on the login button one can login into system. Otherwise:
- If the any field is left empty the form will show error message: "Please fill all the fields" or
- If the fields are filled but email-id or password does not match the one in database then the form will show error: "Incorrect mail id or password!" or
- If the email id is not in the correct format then the form will show error "please enter a valid email address"

#### o Forgot Password:

- The login page will have a button for forgot password, after clicking on it the user would be redirected to a forgot password page which will have a form in which the user would be required to enter his registered email address.
- An OTP would be sent to the email address if it is a registered email address, otherwise an error will be displayed on the forgot password page as: "please enter the registered email address!".
- The user would have to enter the OTP obtained in the email id on the forgot password page which would have a form to enter the OTP, if the OTP is correct then the user would be redirected to the password reset page which would have a form containing fields of password and re-enter password, and a submit button.
- If the OTP entered is incorrect then an error message would be displayed as "Incorrect OTP!".
- On the password reset page if the user enters a valid password that is a password having at least 8 characters and at least one number and a special character and re-enters the same password then after he clicks submit his new password would be stored in the database using which he can login.
- If the password is not a valid password then an error message would be displayed as: "Please enter a password having at least 8 characters and at least one number and a special character"

• If the passwords do not match then an error message would be displayed as "Passwords do not match! re-enter password"

#### Change password:

- Change password option will be available in the profile page.
- Profile page can be accessed from the "Profile" option in the main menu bar.
- When the user clicks on change password button, he would be redirected to the change password page.
- The change password page would contain a form asking the user to enter the old password.
- If the password entered is incorrect then an error message would be displayed as "Incorrect password!"
- If it is correct then the user would be shown a form having fields new password and reenter new password, and a submit button.
- If the user enters a valid password that is a password having at least 8 characters and at least one number and a special character and re-enters the same password then after he clicks submit his new password would be stored in the database using which he can login the next time.
- If the password is not a valid password then an error message would be displayed as: "Please enter a password having at least 8 characters and at least one number and a special character"
- If the passwords do not match then an error message would be displayed as "Passwords do not match! re-enter password"

#### 2.3. Dashboard and other pages

#### • Role wise User's Dashboard

The dashboard for all the users would have a common menu bar having four options: 'dashboard', 'history', 'profile' and 'logout'. Clicking on logout would and the users session and the user would be redirected to the login page.

#### o Student

After login students will be redirected to Student's Dashboard which will contain:

- Panel(s) showing the current stage in the currently active project(s) and its status (submission pending, submitted, approved, commented) and any deadline and a down arrow which would open the stage details sub panel of the current stage.
- Stage details sub panel would contain uploaded documents / upload document (whichever is applicable), status (submission pending, submitted, review pending, reviewed), comments (if any), the deadline, and the date and time of the actual submission.
- If the stage needs submission of any documents and submission is pending then clicking on upload documents would open the dialog box to upload documents. User can only upload one file, whose type should be .zip.
- If the stage needs submission of any documents and submission is done but it has not yet been approved then clicking on uploaded documents would show a dialog box to download the document and to upload a new document. But if the document has been approved then the dialog box would have the option to only download the document.
- Panel(s) showing the details of currently active project(s) such as: name, field, topic/subject, team members (If applicable), Internal guide name (if applicable), External guide name (if applicable), description, its current progress in a progress bar and a down arrow which would open the timeline sub panel.

Timeline sub panel would show the progress of the project in a timeline manner with each stage next to a date and also a link to any documents submitted on that stage beside the stage name.

#### o Internal Guide / External Guide

After login the guide will redirected to the dashboard which will contain:

- A panel containing a table which will have: generic project name (eg: summer project, subject specific project etc.), program name (B. Tech, M. Tech etc.) and semester / academic year. This would show all the different types of project, in different programs and semesters which the guide is handling.
- Clicking on any generic project name would open a project list page.
- The project list page would contain:
  - A pie chart showing number and percentage of projects approved, review pending and commented.
  - Clicking on any sector on the pie chart would open a panel showing the list of all projects under that sector eg.: list of all approved projects would be shown when the user clicks on the sector of the pie chart which denotes approved projects
  - A panel showing list of all projects whose review is pending and a button to review the project would be shown.
  - Clicking on the review button would open a dialog box which would show the project details like project name, description, members, current stage, a download link for uploaded documents and actions to comment or approve
  - o A table showing all the projects along with their current stage and current status

#### • Profile Page

#### o Student:

The student profile page would contain details like:

- name
- registered email id
- college name
- program
- admission year
- profile picture

The student would be able to edit only the profile picture and change the password using the change password button.

#### Internal Guide:

The internal guide profile page would contain details like:

- name
- registered email id
- faculty name
- college name
- program
- profile picture

The internal guide would be able to edit only the profile picture and change the password using the change password button.

#### External Guide:

The external guide profile page would contain details like:

name

- registered email id
- organisation
- organisation website
- profile picture

The faculty would be able to edit all the details except registered email id and name and change the password using the change password button.

#### History Page

#### o Student

- The history page of student would contain a drop down for academic year
- Selecting an academic year would show a list of all the projects that the student participated in the selected academic year along with the final grade (if applicable)
- Selecting a project would show a panel showing all the stages of the projects in a timeline manner with the name, date and a link to the documents submitted in that stage beside a point in the timeline. If the system generated any certificates for the project a download link would be available for it.
- Clicking on the stage name would open a dialog box which would show any comments made on that stage by the guide, along with the dates and the final grade for that stage if applicable.

#### o Internal / External guide

- The history page of guide would contain drop downs for academic year, program, and generic project type.
- Selecting all the details would show the list of projects and the name of the members of that project, along with the final grade (if applicable).
- Selecting a project would show a panel showing all the stages of the projects in a timeline manner with the name, date and a link to the documents submitted in that stage beside a point in the timeline.
- Clicking on the stage name would open a dialog box which would show any comments made on that stage by the guide, along with the dates and the final grade for that stage if applicable.

#### 2.4. Wireframes

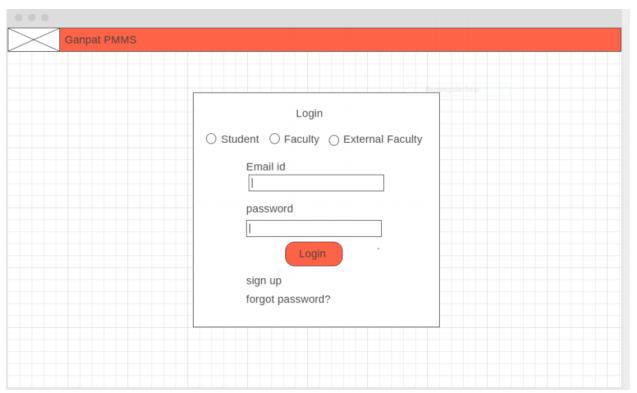


Figure 2.1 login

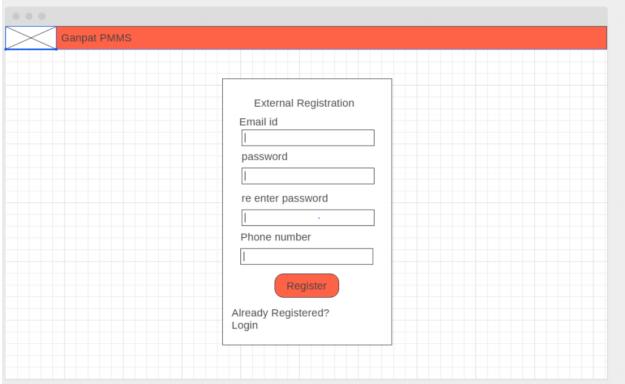


Figure 2.2 register

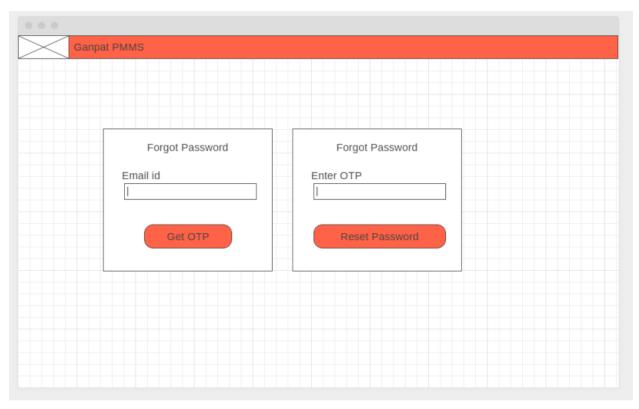


Figure 2.3 forgot password

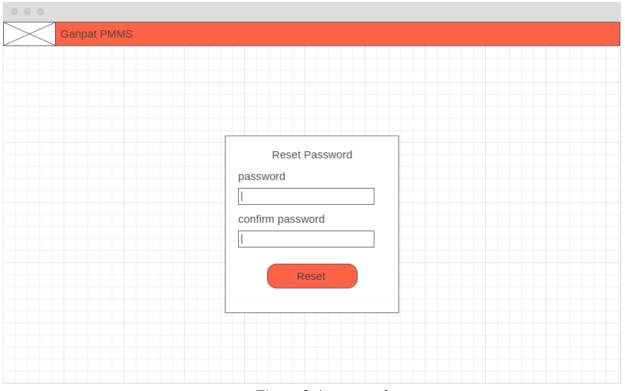


Figure 2.4 password reset



Figure 2.5 internal/external faculty dashboard

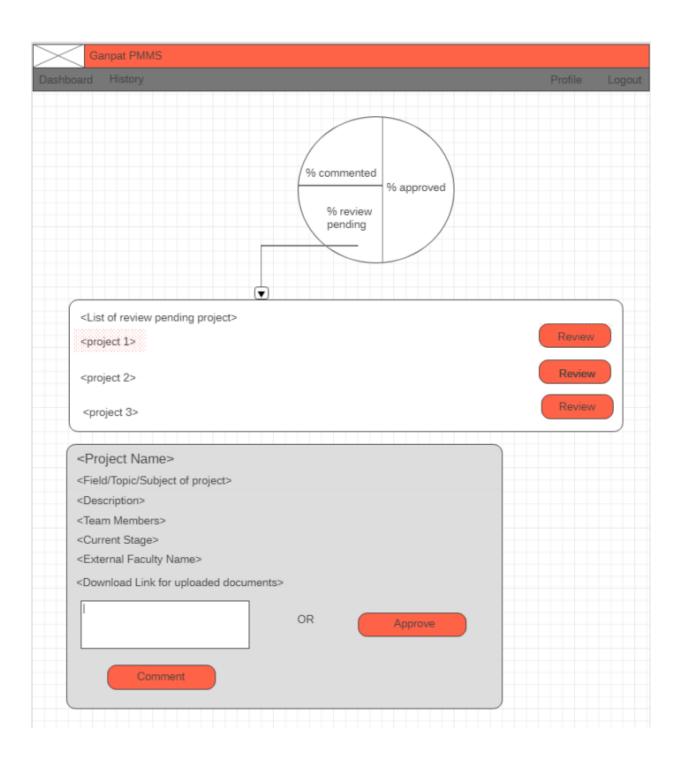


Figure 2.6 internal /external faculty view project

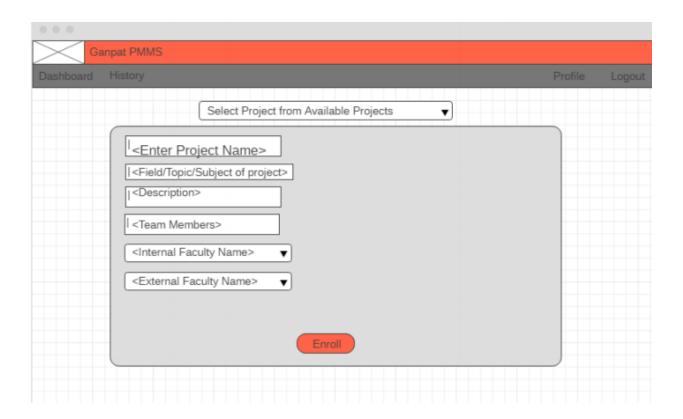


Figure 2.7 student enrolling for project



Figure 2.8 student dashboard

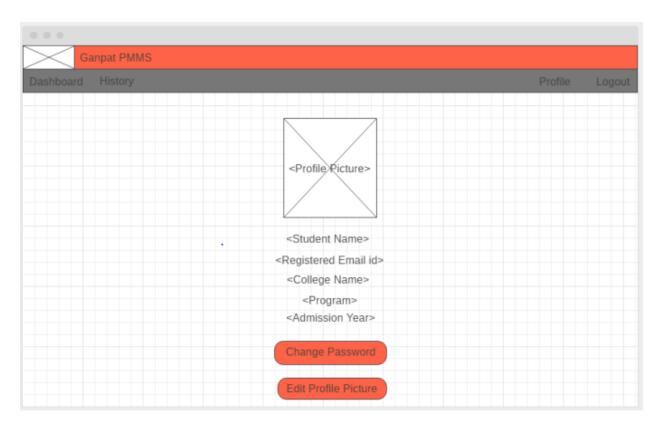


Figure 2.9 student profile page

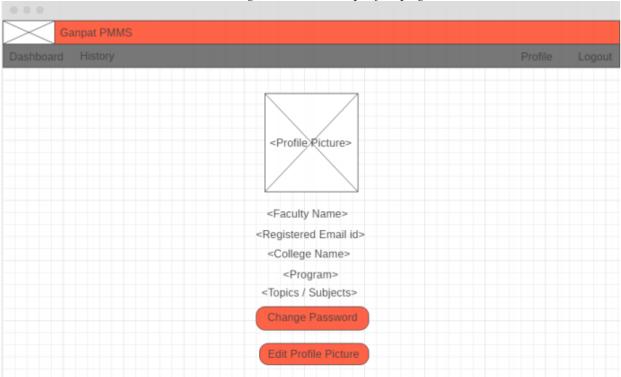


Figure 2.10 faculty profile page

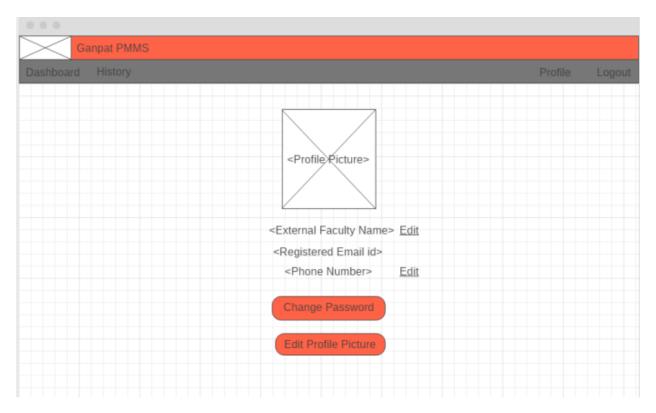


Figure 2.11 external faculty profile page

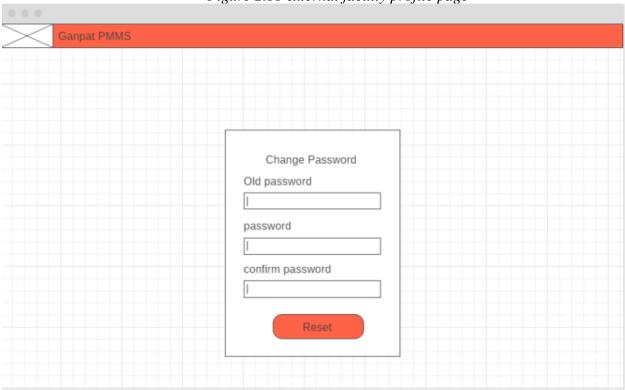


Figure 2.12 change password

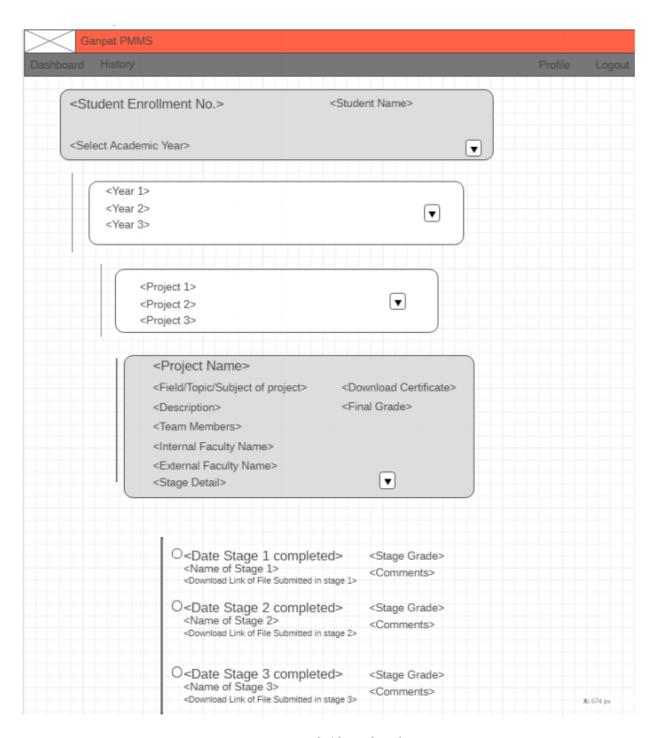


Figure 2.13 student history



Figure 2.14 super admin dashboard

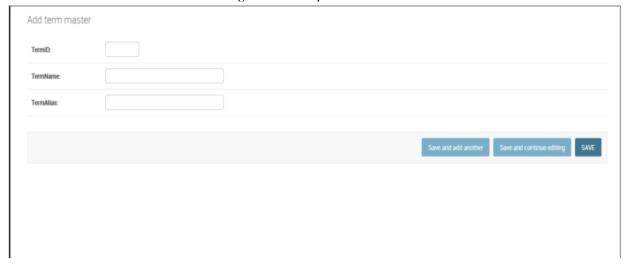


Figure 2.15 term master

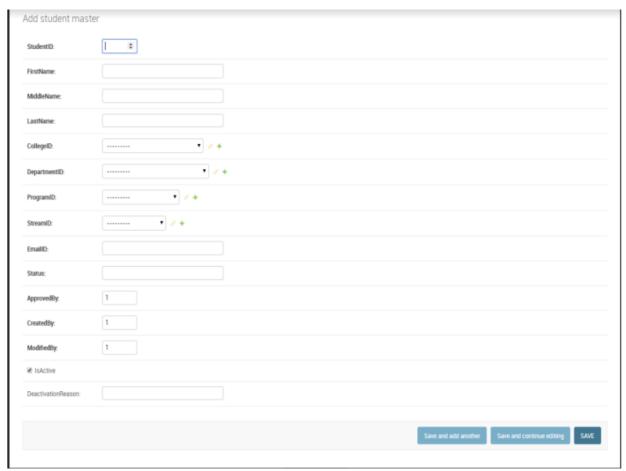


Figure 2.16 student master

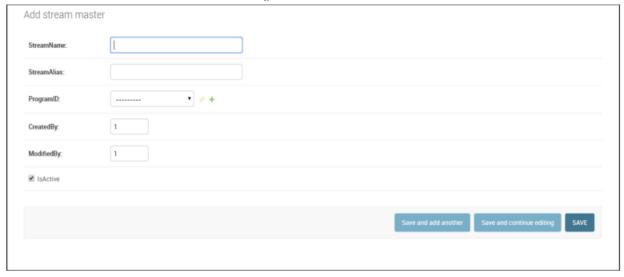


Figure 2.17 stream master



Figure 2.18 role master

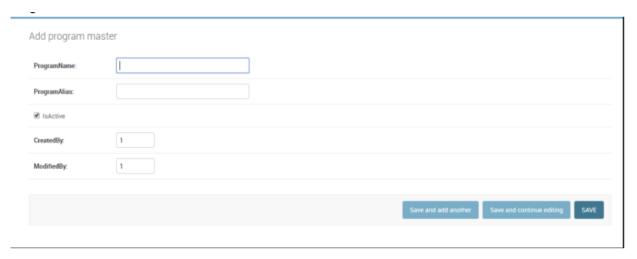


Figure 2.19 program master

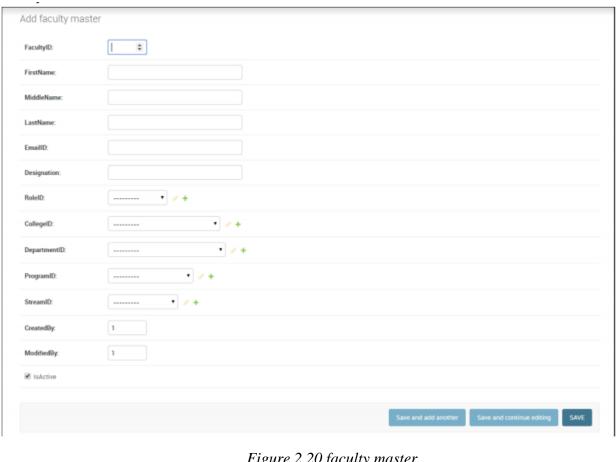


Figure 2.20 faculty master



Figure 2.21 edit term master

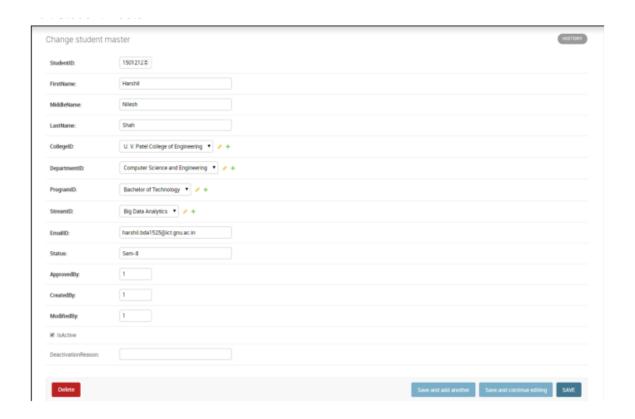


Figure 2.22 edit student master

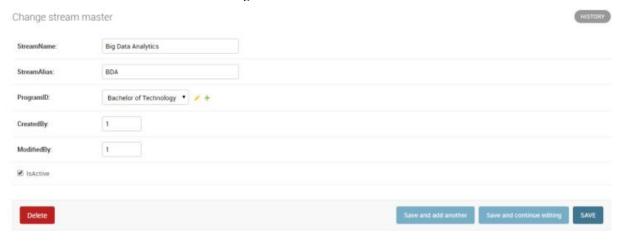


Figure 2.23 edit stream master

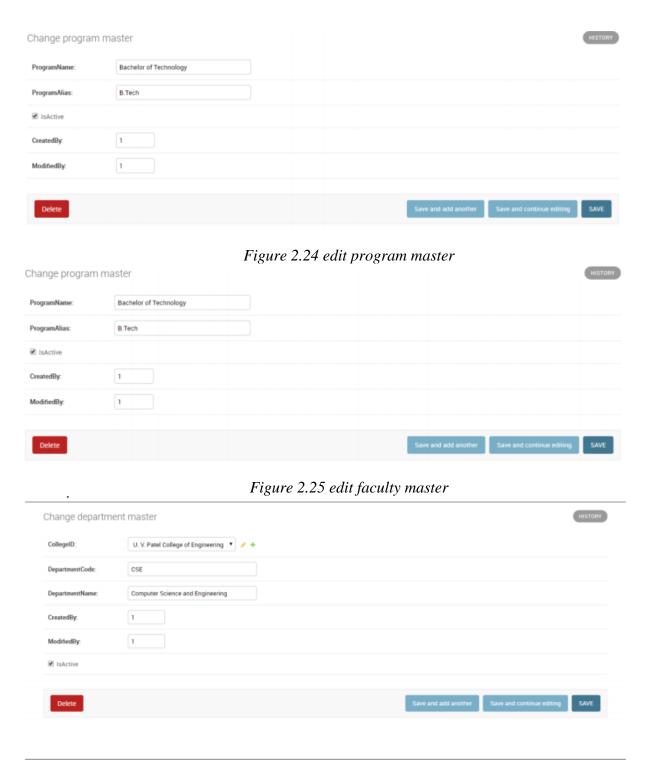


Figure 2.26 edit department master

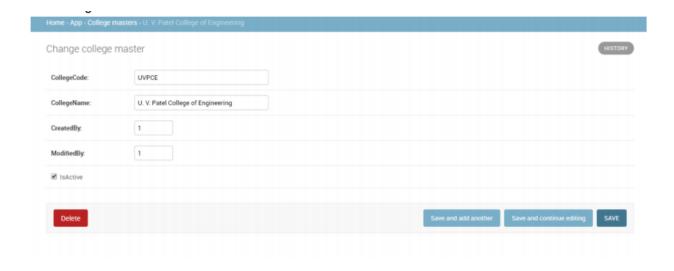


Figure 2.27 edit college master

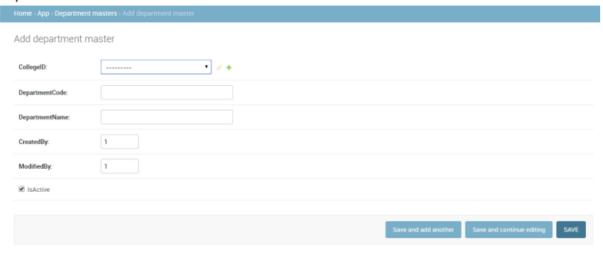


Figure 2.28 department master

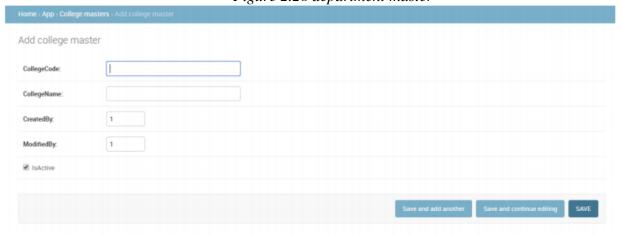


Figure 2.29 college master

# 3. DATA DESIGN

#### 3.1. List of tables

- **Faculty**: Will contain details of the faculty.
- **Designation**: This table is related with **Faculty** table, the faculty ID will be foreign key in this table, i.e **Faculty** HAS **Designation**, also **Designation** will derive **Roles**.
- External Users: This table will contain details of external mentors for the **Project**.
- **Project Members**: This table will contain people excluding the students who are involved in the project i.e it may contain **Faculty members** as well as **External Users**.
- **Student**: This table will contain details of the students.
- **Stream**: This table will contain details of streams available, also it will be related to two tables (Terms and Program) i.e **Stream** has **Term** and **Program**.
- **Project**: This table will contain details of the projects and **Student** will create **Project**.
- **Team Member**: This table will contain the team members of the project. Team members consists of **Students**.
- **Process**: This table will contain list of available processes and the processes will be **Stream** specific and every **Project** will be based on the **Process**.
- **Stages**: This table will contain details of stages related to the **Process** also it will be used by **Project** table to define **Stages**.
- Stage Activities: This table will contain list of activities every stage has i.e it will related to Student Activity File Uploads, Stage Activity Approvals and Certificates which further will contain Download History and Certificate Type.

# 3.2. ER Diagram

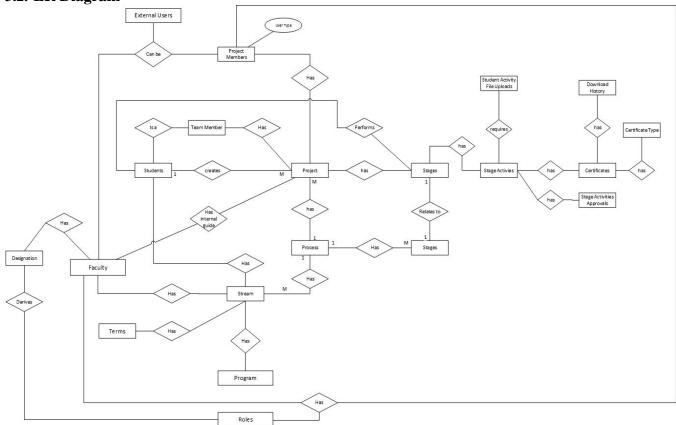


Figure 3.1 ER Diagram

4. TOOLS AND TECHNOLOGY

#### **CHAPTER 4 TOOLS AND TECHNOLOGIES**

#### **4.1. Frontend Technologies**

- Bootstrap
- Html5
- JavaScript
- CSS

#### 4.2. Backend Technologies

- Python Django
- MySQL database

We chose Django as a backend to our project as it is a high-level Web framework written on top of python for rapid development and robust design. It provides hassle free web development plus it is open source and free.

5. IMPLEMENTATIONS

#### **CHAPTER 5 IMPLEMENTATIONS**

#### 5.1. Creating Models

The Models are the major classes that our system would contain. These are based on the database tables required. For example, the class to contain all the details of the college looks like:

```
class CollegeMaster(models.Model):
    collegeID = models.AutoField(primary_key= True)
    collegeCode = models.CharField(max_length=50, unique=True,null=False)
    collegeName=models.CharField(max_length=50, unique=True,null=False)
    createdDate = models.DateTimeField(auto_now_add = True)
    modifiedDate = models.DateTimeField(auto_now = True)
    createdBy = models.IntegerField(default=1)
    modifiedBy = models.BooleanField(default=True)
```

#### The various Master Tables are:

- CollegeMaster
- DepartmentMaster
- FacultyMaster
- LoginMaster
- ProcessMaster
- ProgramMaster
- StageMaster
- StreamMaster
- TermMaster

#### The Various History Tables are:

- ProcessMasterHistory
- ProcessOwnerHistory
- ProcessToProgramMappingHistory
- StageActivitiesApprovalsHistory
- StageWorkflowStatesHistory
- StageMasterHistory

#### Other Miscellaneous tables are:

- ProcessOwner
- ExternalUsers
- Students
- Projects
- ProjectMembers
- StageActivities
- Certificates

- EvaluationGrades
- ProcessToProgramMapping
- ProjectToStageMapping
- StageActivitiesApprovals
- StageWorkflowStates
- ProjectPanelMembers

### **5.2.** The Admin Panel

The Admin Panel provides an interface to the system admin to perform CRUD operations on the various tables in Database.

6. FUTURE SCOPE

#### **CHAPTER 6 FUTURE SCOPE**

#### **6.1. Future Scope**

In Future we plan to extend the project by implementing the following:

- Getting Data Directly from Ganpat database
- Setting up a scheduled sync process
- Setting up a batch process to get data
- Improving UI to make it mobile friendly
- Functionality to send reminders to student when deadlines are close
- Batch approve facility for internal guide

# Industry project report

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