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RESEARCH ARTICLE

SARP: Student Admission and Registration Portal – An Application

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Abstract — In most educational institutions, we might be facing a delay to complete the admission procedure as it takes time for each individual to fill in all the required details, our project aims to reduce the work of the educational institution professional and also make it easy to the student to complete their admission process by themselves. Our application manages and organizes the student's data from the date of joining to the date of completion of the course individual, on top of all, our application provides the student to fill in all his details by himself/herself rather than waiting to fill it offline and makes the officials get the student details in just a button's click. Our proposed application provides a user-friendly interface for students to register for a course in an institution or complete the admission procedure hassle-free. It further manages the whole data of the student including marks scored, fee payment details, mentor details etc.

Index Terms – Admission, superuser, registration, candidate, faculty.

I. INTRODUCTION

Every year thousands of students stand in queue in order to collect admission forms for seeking admission in various colleges, universities and schools, which cause tremendous pressure for student as well as administrative body to manage the crowd [3]. To avoid the process by manually, with the advancement of technology and involving more software to reduce human interaction and produce results which utilize less manpower and time to produce more efficient results in the view of a student approaching a college for admission and all the further actions that are required to be performed by the assigned faculty and the student, we have designed a model [1] [2]. The model which is thus proposed is an attempt to bring the students and college much closer by providing them with a hassle-free platform

where they interact with each other and follow the steps to complete the admission process more efficiently than and as hassle-free as possible [16]. It reduces a lot of time for students as well as administrative body. As it is online and web based it allows the candidates to apply for admission at their convenient time. Institutes can avoid printing and storing admission forms which results in cost saving and also man power [4]. The process is very precise due to less human participation. The entire process is user friendly and simple similar like filing the form manually, difference is the candidate as to use keyboard instead of pen. The portal is fully integrated with multi-user system with full protection against the unauthorized access [6] [7]. It provides accurate, secure and timely information to users at all levels for better decision making [17].

II. METHODOLOGY

The framework of the model is diagrammatically represented in fig.1. In this model the superuser will have all the access to modify/entry/access the data of any module. The teaching/admin faculty and student will have only access to limited access in the entire process of the model [8]. For the first time if the candidate or teaching faculty registers, the user id and password will be mailed to their respective email id provided during the registration. With that user id and password, the candidate can move forward in applying for the admission process to the institute.

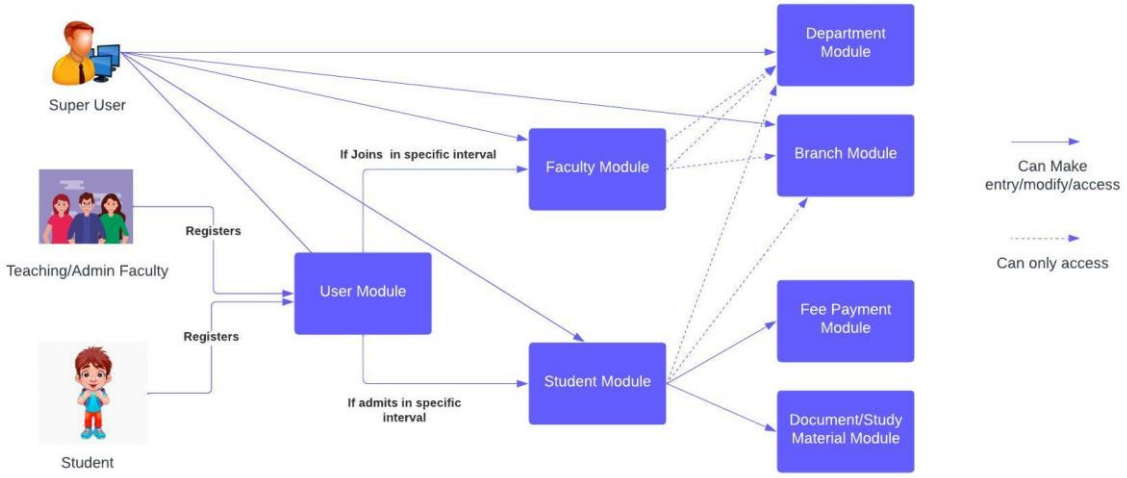

Fig.1 Framework of proposed application

User Module

The user module deals with various functionalities that include user creation, updation and verification. Once a user tries to register himself/herself through the registration page, all the fields will be validated, an entry will be made in the backend with the provided details, and the server as shown in fig.2 will set some fields. In order to avoid duplicate entries, the user will be validated for existence with the help of mobile no. and mail id. On successful registration of the user, a mail will be sent to the user's mail id with the help of SMTP protocol, containing all the credentials that are required to log in along with the other important information [9].

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There are various types of users that include Student, Admin (Non-teaching faculty), Teaching faculty and Super User. There will be only one super user per deployment and will have access to all the functionalities that will be discussed in the later part. All the users except the super user can register themselves through the same registration page by choosing the appropriate role. Student users can directly log in and get into the admission procedure on successful registration, whereas the Admin and Teaching faculty need to get themselves verified from the existing faculty, only which they will be able to log in.

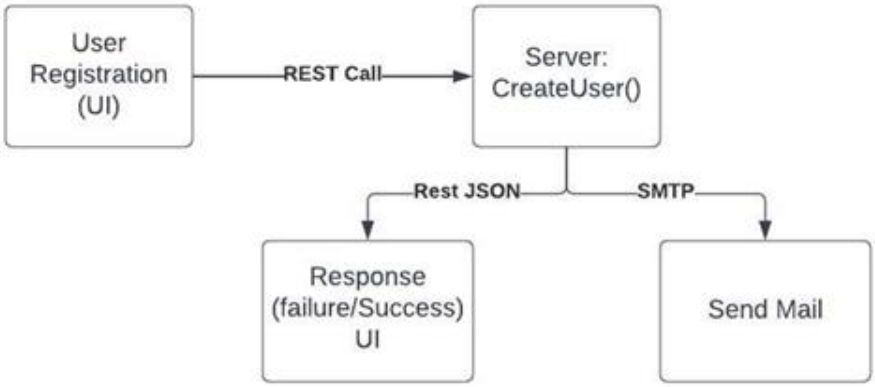

Fig. 2: User Module

The module also handles the update and delete users, but these functionalities will be limited to only certain types of users. Apart from these functionalities, one more background process will be running to clean up the unused data, the process will run at certain intervals of time and will clean up the unused data (considered as unused based on a few parameters). All the values to run the background process are configurable from the properties file.

Student Module

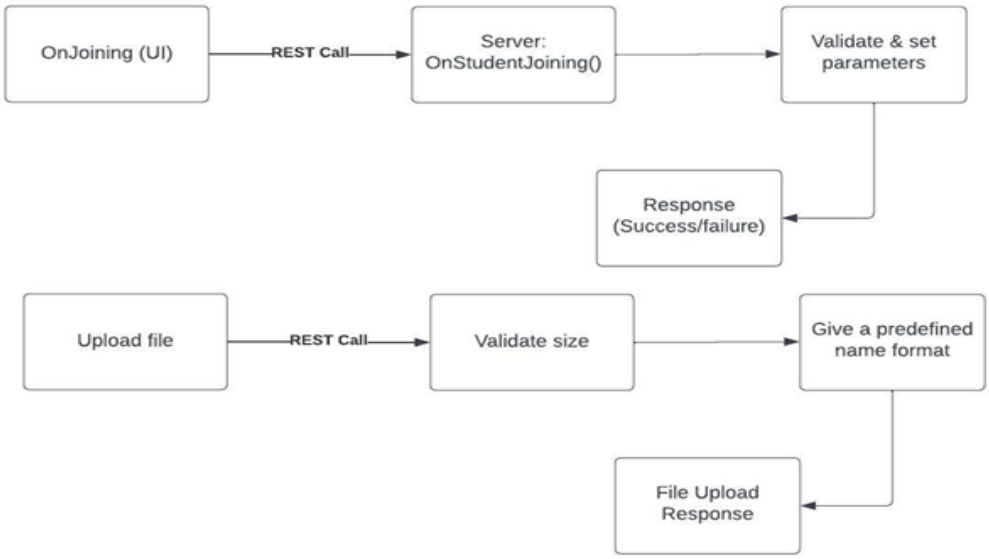

Fig. 3: Student Module

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The student module includes the functionalities like maintaining and updating the student user data from the date of joining to the end date of the course of study. After registering, the student user can log in to the portal with the help of credentials received in the mail, on first-time login, the user (On Student Joining as shown in fig.3) will be asked to enter the required details to complete the admission in the institution, on click on Submit button at the end of the Student Admission Form, an entry will be with the provided details at the backend, and the verification status will be set to "Pending". Apart from the text fields, the portal will include the provision to add soft copies of the required documents for verification, only pdf format files are allowed and also limited-size documents will be allowed for upload [10].

The working admin or non-teaching faculty or the super user will have permission to verify the details of the student, once the student user gets verified successfully, an SRN, section, class teacher, mentor, fee to be paid etc. will be automatically generated and a mail will be sent with all these details through the SMTP protocol and also can be viewed in the portal [11]. If the user verification fails due to some reason, the same will be updated to the user through the mail. There will be a background process running at certain intervals of time, it will keep checking if there is any student who has crossed the end date of his course of study, if found, all the data related to the student in various places will be cleaned up.

Faculty Module

The faculty module includes the functionalities like maintaining and updating the admin or teaching faculty user data from the date of joining.

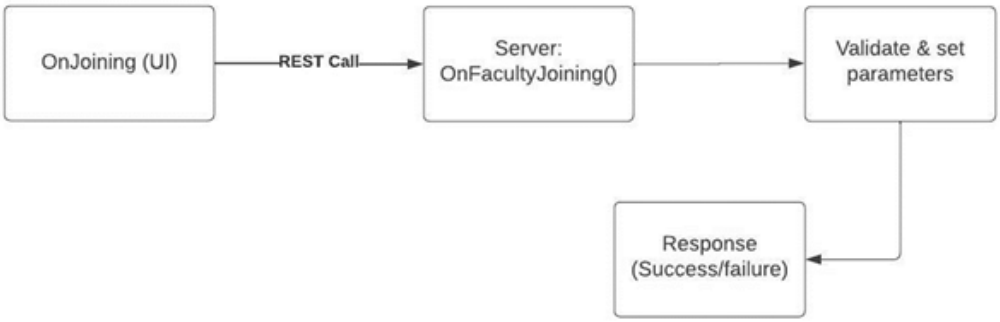

Fig. 4: Faculty Module

After registering and getting the user verified (as shown in fig.4) from the working admin faculty, the admin or teaching faculty user will be able to login to the portal using the credentials received through the mail. On first time login, the user will be asked to enter the required details in order to complete the joining procedure, once filled, the details will again be verified by the working admin faculty incharge [12]. On successful verification, an employee id will be generated automatically, and the admin faculty will be assigning the section (class teacher) in case of teaching faculty. All the details like employee id, section, branch etc will be sent to the user through the mail using SMTP protocol and also can be viewed on portal. On unsuccessful verification also, the same will be communicated to the user.

Branch Module

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The branch module handles all the functionalities related to the various branches of study available under departments.

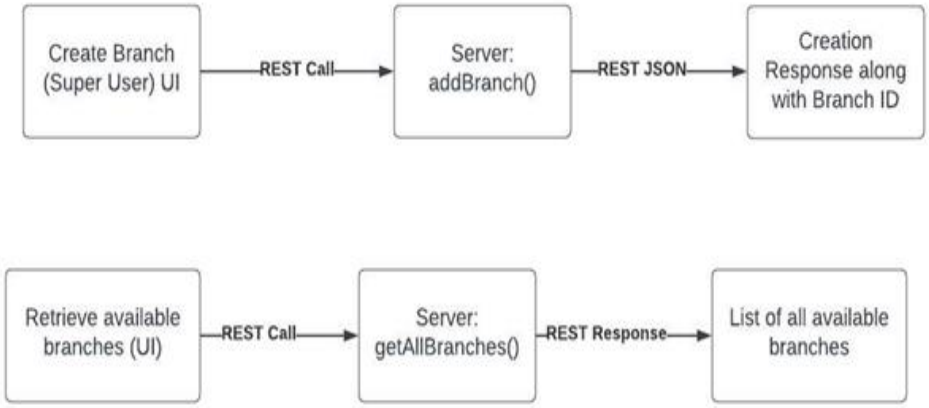

Fig. 5: Branch Module

Only super user (as shown in fig.5) will have the access to create or update the branch details, all types of users will have the access to view the branch details. On creation of a new branch, an entry will be made at the backend with the provided details and the branch id is automatically generated, branch code provided by the user during creation will be used during the SRN generation of a student user and employee id generation of Admin and Teaching faculty user [14]. It also has various fields like total fee by mode of admission, hod details etc and these details can be viewed by all types of users (Student, Admin, Teaching faculty and Super user).

Department Module

The department module handles all the functionalities related to the various branches of study available under departments [13]. Only super users will have the access (as shown in fig.6) to create or update the department details, all types of users will have the access to view the department details. On creation of a new department, an entry will be made at the backend with the provided details and the department id is automatically generated. It also has various fields like director details, assistant director details etc and these details can be viewed by all types of users (Student, Admin, Teaching faculty and Super user).

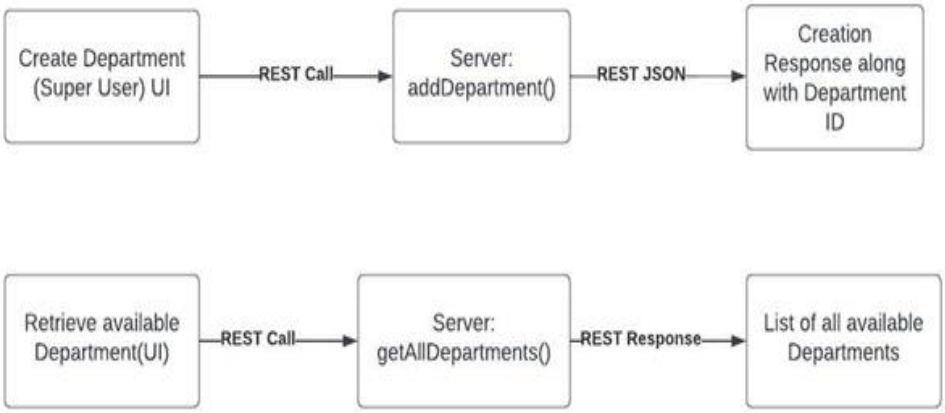

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Fig. 6: Department Module

Study Material Module

The study material module will deal with the functionalities of adding, maintaining and displaying the study materials. The complete working of front-end is mentioned in fig.7.

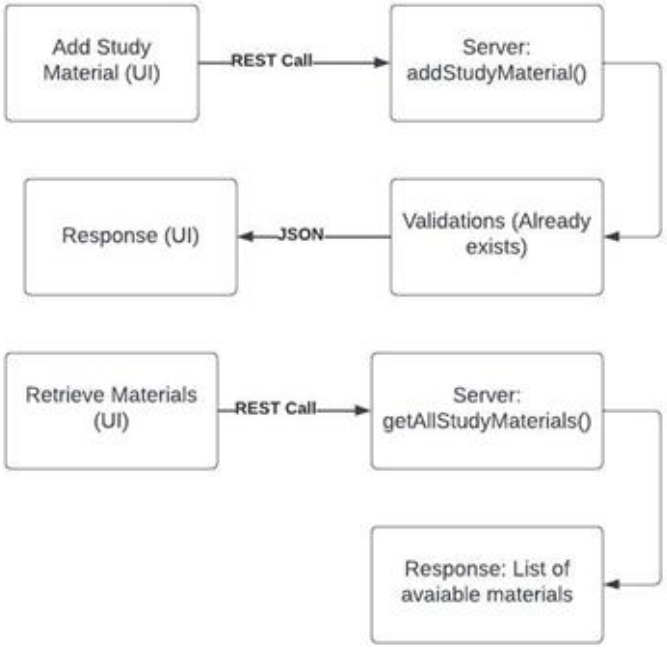

Fig.7: Study Material Module

Any non-student user will have the access to add a new study material, user will be allowed to provide the book name, book link, and department. Book no. and added by user details will be automatically set. An entry will be made at the backend on successful addition of the study material. In order to avoid the duplicate entries, a few validations will be done based on the book name and the book link and will not allow addition if the material already exists [15]. A student user can only view all the available study materials.

Fee Module

The fee module deals with payments, payment history and invoice related functionalities, a student user can see the fee balance to be paid and can pay it simply using the QR code available in the payment page, once the payment is done, the user can get the invoice generated by filling the details in the payment page. Once verified from the admin faculty, the fee receipt will be generated. The student user will be able to see all the payments done by himself/herself in the past.

III. RESULTS and DISCUSSION

A web application which provides an interface to the students/faculty to enjoy a hassle-free admission or registration process and acts as a platform to the faculty that provides various views of

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monitoring the student data. This is the root page of the application, the existing user can login to their account by providing proper login credentials in this page and that is shown in fig 8 (a).

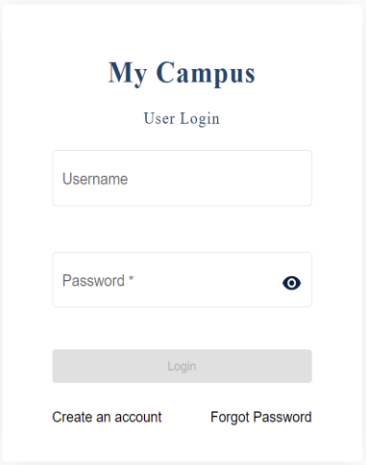

Fig. 8(a): Login Page

Any new user will have to fill the above form (shown in fig.8(b)) in order to register themselves in the institution, user can be redirected to the above page by clicking on "Create an Account" on the root page.

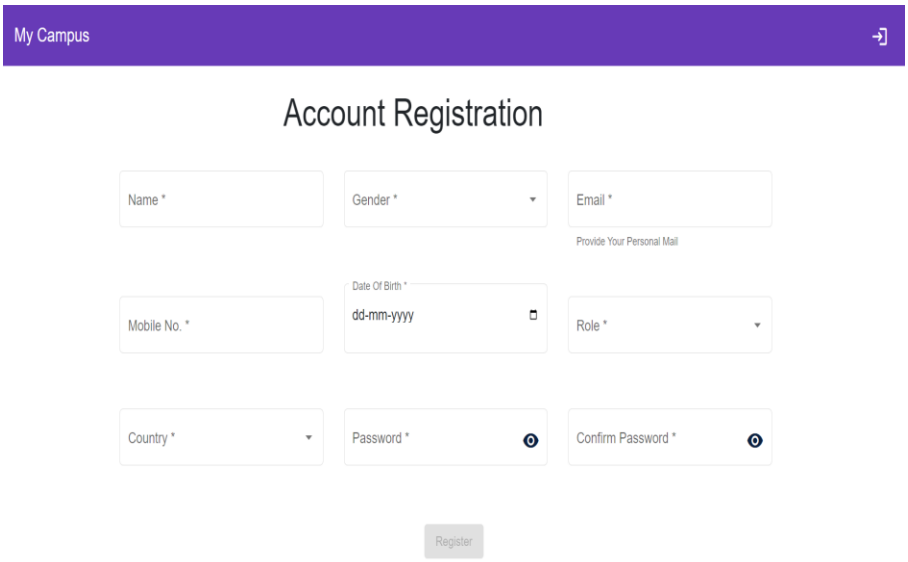

Fig. 8(b): Registration page

Student dashboard: If the student user has entered all the required details and finished the admission procedure in the institution, then they will be redirected to the student dashboard page (as shown in fig.8(c)), they will have Personal Details, Student Details, Faculty Details, Departments, Branches and Fee Payments options. (Each of them are explained in detail below)

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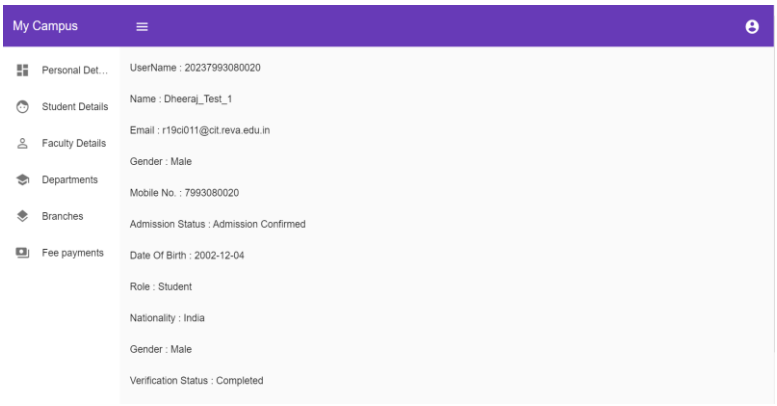

Fig. 8 (c): Student Login Dashboard

Super User Dashboard: If the admin faculty user has entered all the required details and finished the admission or on boarding procedure in the institution, then they will be redirected to the admin faculty dashboard page (as shown in fig.9(a)), they will have Personal Details, Student Details, Faculty Details, Departments, Branches, Authorize Faculty User and Verify Fee Payments options.

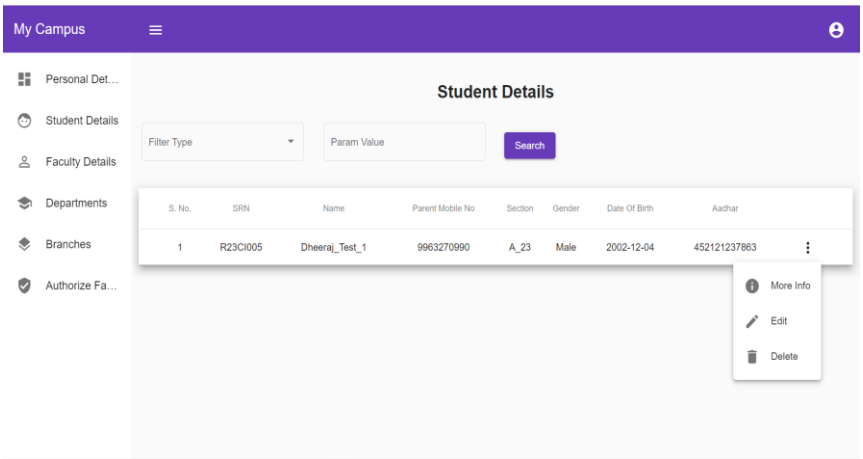

Fig. 9(a): Student details

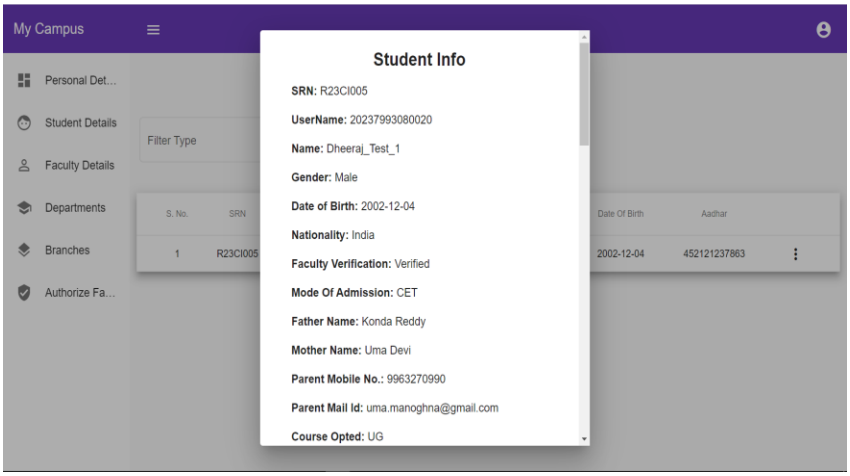

Fig.9(b): Details description

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The admin/super user will have the privilege to perform operations on student, various operations that can be done will be visible on click on more button (as shown in fig 9(b). The admin/super user can retrieve more details of the student by clicking on "More Info" and can edit and delete the user by clicking on the respective buttons. Verify User button will be available only when the student data is retrieved using the UnVerified Users filter, else it will not be visible. Similar to the student details, the operations and views of Faculty details also vary depending on the type of the logged in user. Student users can view only the basic details of the faculty, admin or super users will have the privilege to edit or delete or verify the faculty users and the teaching faculty will have the privilege to view the more info of the faculty. The type of filters available to filter the faculty data vary from that of student details. The below figures, fig 9(c) depicts the faculty details page for admin/super user, fig 9(d) depicts the more info page for faculty.

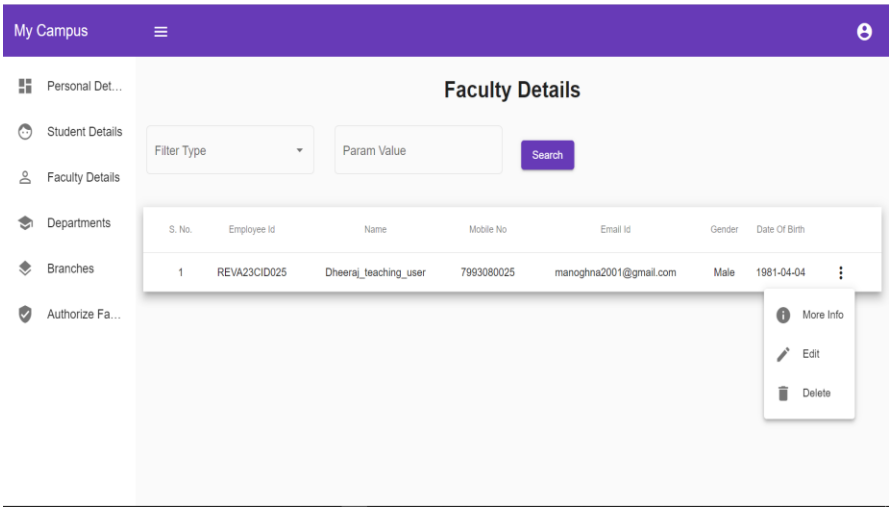

Fig.9(c): Faculty details

Department: The super user will have the privilege to add a new department, edit or delete the existing departments besides viewing them (as shown in fig.10(a)). The fig.10(b) will be displayed on click on the Add Department button, Director Name and Assistant Director Name are to be selected from the dropdown and all the teaching faculty names will be available in the dropdown.

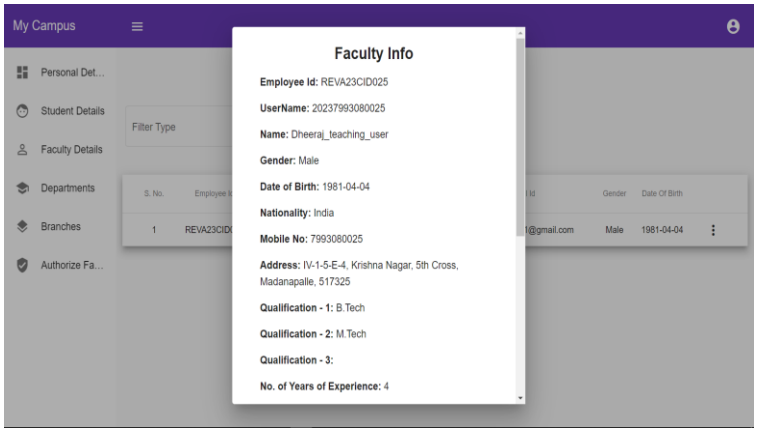

Fig.9 (d): Summary process

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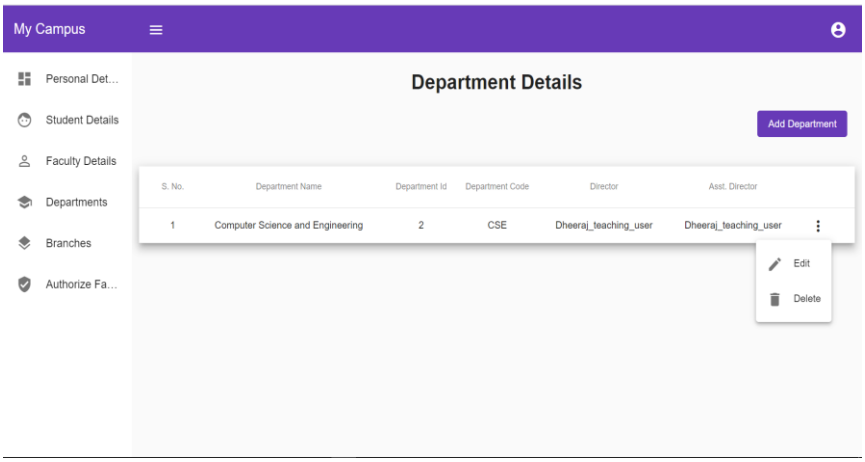

Fig. 10(a): Department Dashboard

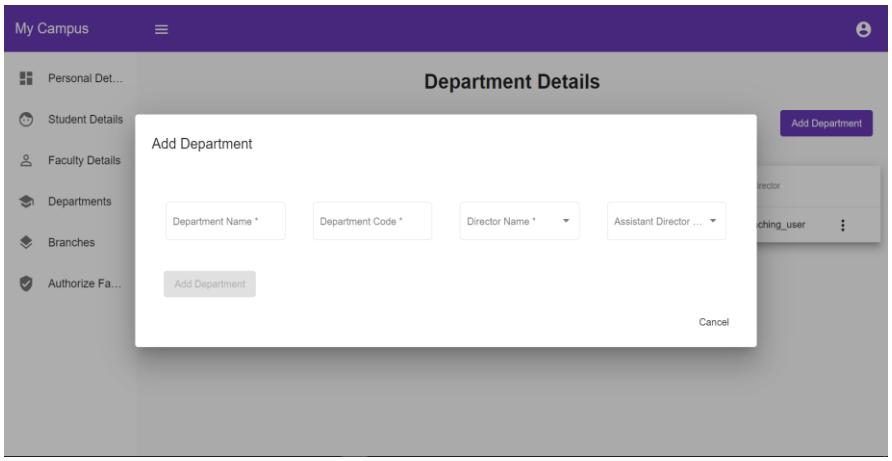

Fig.10(b): Add department

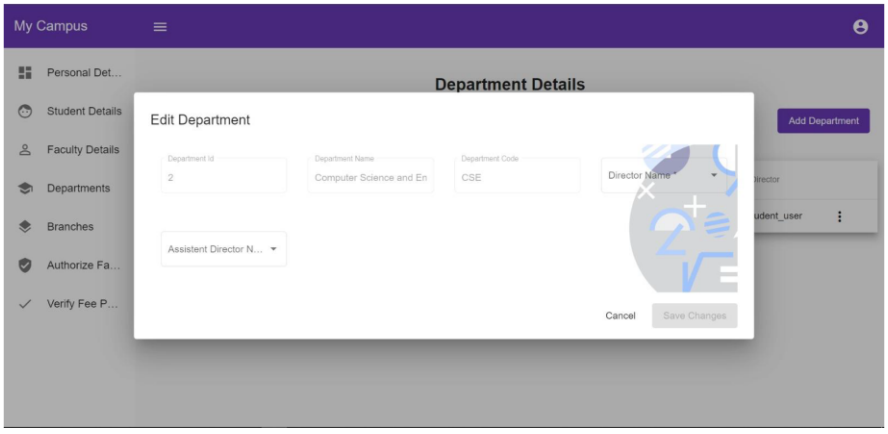

Fig.10(c): Edit department

As shown in fig.10(c) will be displayed on click on the Edit button, Director Name and Assistant Director Name are to be selected from the dropdown and all the teaching faculty names will be available in the dropdown.

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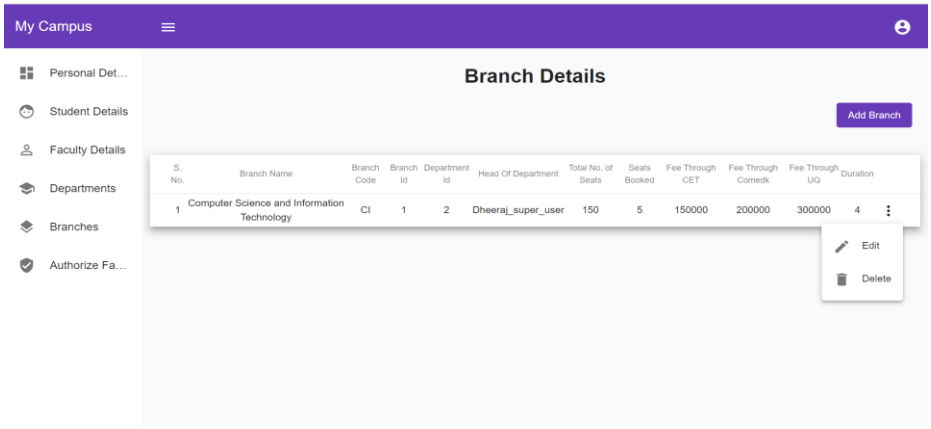

Fig.11 (a) Branch Dashboard

Branch: The super user will have the privilege to add a new branch, edit or delete the existing branch besides viewing them (as shown if fig.11(a)).

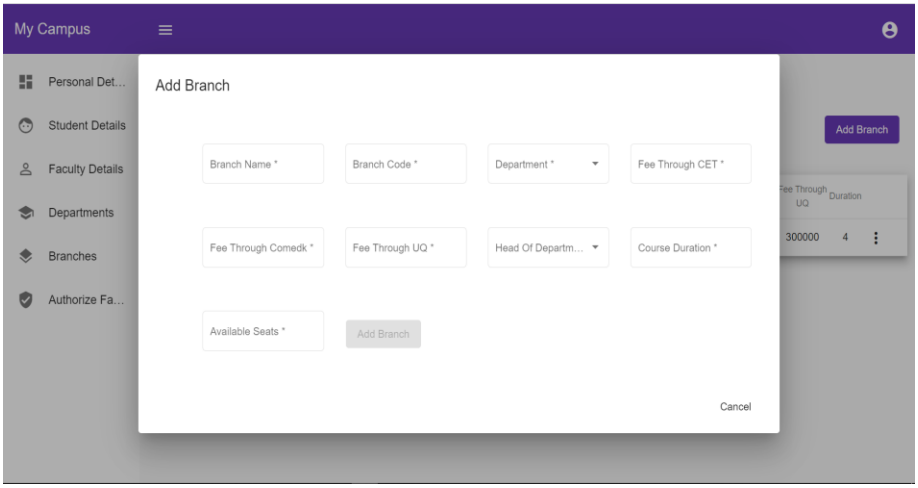

Fig.11(b): Add Branch

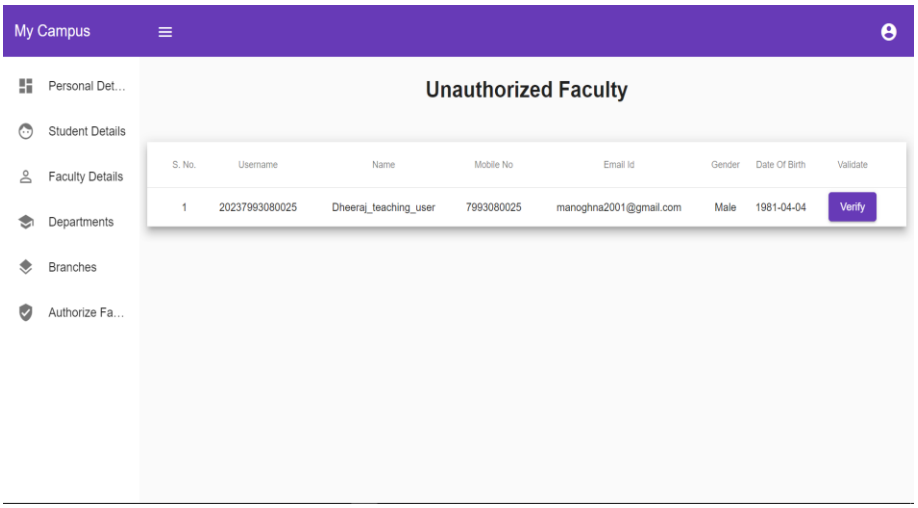

Fig.12: Faculty Authorization

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As shown in fig.11(b) will be displayed on click on the Add Branch button, HOD name is to be selected from the dropdown and all the teaching faculty names will be available in the dropdown and also the department is to be selected from the dropdown and the dropdown will have all the departments available.

Faculty Authorization: The verification of faculty, only the super user can verify their details and permit them by clicking on the verify button (as shown in fig.12)

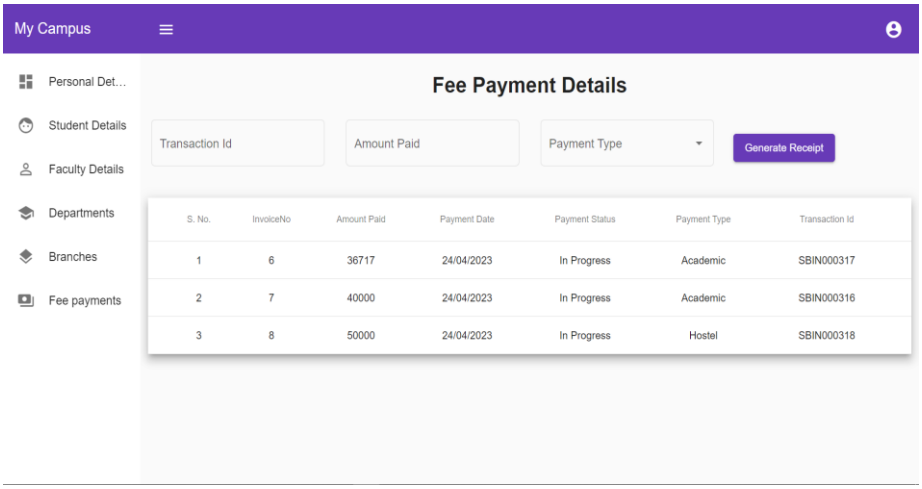

Fig. 13: Fee Payment dashboard (student side)

Fee Payment: The student user can make the payments by navigating to the Fee Payments Page (as shown in fig.13). He/She can view the previous fee payments made by them. He/She has to provide the transaction details and click on the Generate Receipt after paying the fee using Pay Fee button. Initially, the fee payment status will be set to In Progress and will be changed based on verification done by the admin/super user. The student user will be able to view the QR codes (as shown in fig.15) by clicking on the Pay Fee option.

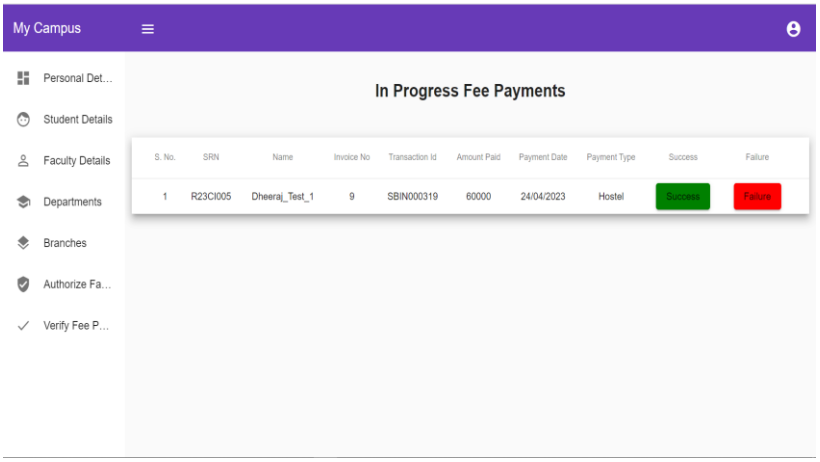

Fig. 14: Fee Payment verification and Validation

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The admin/super user can access by simply navigating to the Verify Fee Payments (as shown in fig.14), admin/super user can click on respective button to verify the fee payment status.

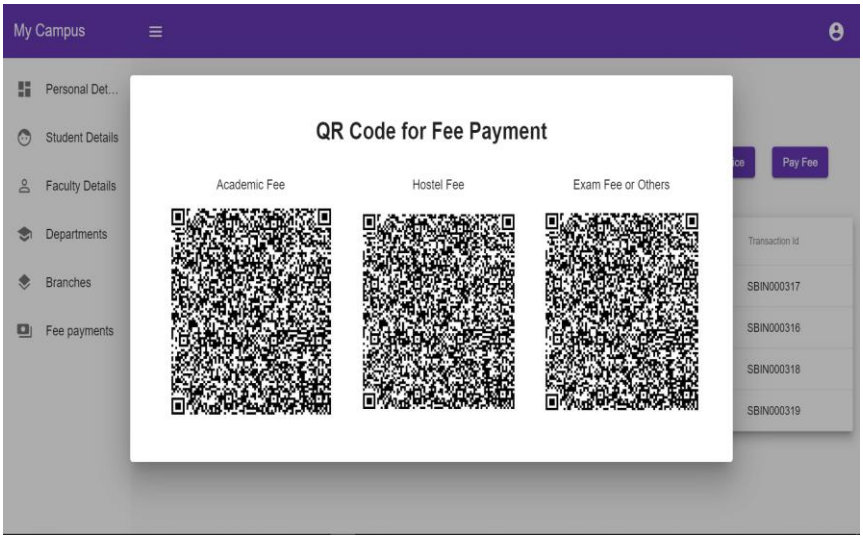

Fig.15: QR code for Fee Payment

IV. CONCLUSION

The application being developed is based on the implementation of a web portal in web development platform, which can be easily customized based on the requirements of various departments/institutes. Some of the user requirements namely user friendliness and data maintainability, are incorporated in the application. Branch and department management can only be done only by the super user. Thus, the application is more flexible and customizable. Our future works may include integration of student class time table, grades he/she scored in various semesters, provision to register to various that happens in the university, register for placements, the application can also be extended to conduct various interacting sections, finally making it a one stop solution for all activities that are required for the student as well as the faculty. Payment gateway to be integrated to allow various types of payment apart from UPI (QR Code). More data clean-up threads to be included to avoid heavy load and the discrepancies caused due to it at the backend can be maintain in the datasheet. Also, improving the user interface and making it more user friendly.

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