Online College Admission Management System (OCAMS)

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Abstract: The system is developed using Python and Django, a popular web framework for Python. Django's Object-Relational Mapping (ORM) is used to define the data models for College, Stream, Cut-off-list, and Student, which store information about colleges, their streams, previous year cut-off marks, and student details. The system consists of two modules: admin and user. The admin panel is created using Django's built-in admin interface, which provides an easy-to-use interface for managing data models. The user module is designed for students, allowing them to view college and stream details, check the previous year's cut-off marks, and apply for admission to their desired stream. Students can also get notifications if they are selected for admission. The user interface is created using Django's built-in templates and forms, making it easy to create web pages for students to interact with. The admission process is implemented using Python and Django, which allows college staff to create cut off lists for each stream and students to apply for admission to their desired stream.

Keywords: **-** Django, Sql3lite, Object Relational Mapping, Python, Html, CSS

I. INTRODUCTION

The online college admission system is a web-based application developed to simplify the traditional college admission process. It is designed to reduce the time and effort by automating the admission process and maintaining a database of students and their admission status.

With OCAMS we have the following Drawbacks,
a) Students who do not have access to the internet or digital devices may face difficulty in using the platform.
b) Technical issues or security concerns could lead to delays or disruptions in the admission process, potentially affecting the admission of students.

II. THE EXISTING WAYS OF THE SOLUTION AND THEIR SHORTCOMINGS

Existing System:

- The application process relies on manual, paper-based forms and record-keeping, leading to inefficiencies and potential errors.
- Prospective students face challenges in accessing comprehensive information about colleges, available courses, and admission requirements.
- The manual nature of the process results in lengthy processing times, leading to significant waiting periods for applicants.
- The lack of transparency regarding admission status and cut-off scores creates uncertainty and makes it difficult for applicants to plan accordingly.

Proposed System:

- Digital process with no need for paper-based applications and record-keeping, record-keeping is much easier in this system
- Accessible information about college, courses, admission requirements and can view cut-off.
- Faster process with reduced waiting times and easier document verification easily accessible
- Greater transparency with real-time application and admission status updates with no delay and faster information notification

III. THE DESCRIPTION OF MODULES AND ARCHITECTURE OF THE ONLINE COLLEGE ADMISSION SYSTEM (OCAMS)

OCAMS has two major modules Admin module and Student module.

a) Admin Module

- Add, update and delete college details and stream details.
- Create cut-off marks list for each stream based on the previous year's data.
- View the list of students who have registered for the admission.
- Select or reject students for admission.
- Generate the final list of students who have been granted admission.

b) Student Module

- View the previous year's cut-off marks list for each stream.
- Register on the website and fill out the admission application form.
- Pay the admission application fees online (if applicable).
- View the status of the application and receive notifications if selected or rejected.
- Download the admission letter if selected.

The architecture design of a OCAMS involves several components working together to ensure the application performs its intended functions efficiently and effectively. Here are the typical components of a OCAMS architecture:

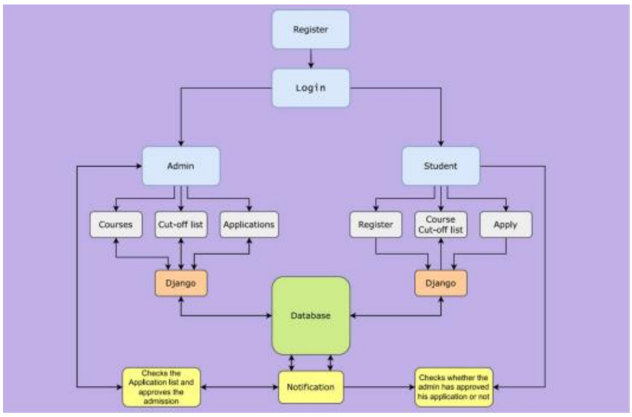


Figure 1: Architecture diagram of OCAMS (Components Overview)

a) Register

This is the first thing the user has to do to gain access for OCAMS, after registering he can use the login portal to get into OCAMS. Based on the username and password entered the login portal will open the student portal or Admin portal accordingly.

b) Notification System

The notification system will be responsible for sending the info to the students regarding their admission status. When the Admin updates the application status it will show in the Application status panel.

c) User Interface (Student Panel)

The user interface is the first component of the project that users will interact with. It is responsible for providing a user-friendly interface for students to apply for college admission, view college details and cut off marks, and receive notifications about their admission status. The user interface will be designed using either Django.

d) Database Management

The database management component of the project is responsible for storing and managing all the data related to the admission process. It will store details of students, their applications, college details, stream details, cut off marks etc.

e) Admin Panel

The admin panel is the part of the system that the college administration will use to manage the admission process. The admin panel will be used to add and edit college and stream details, create the cut off list for the current year, register new students, and remove students who deny admission. The admin panel will be accessible only to the authorized users.

f) Authentication and Security

The authentication and security component of the project will be responsible for ensuring that only authorized users can access the system. It will use login credentials and two-factor authentication to prevent unauthorized access to the system. It will also implement data encryption to ensure the security of student data.

IV. DESIGN

ER Diagram

The ER diagram provides a clear representation of the data model for the college admission system, showing how the different entities are related to each other and how data is stored and retrieved from the system.

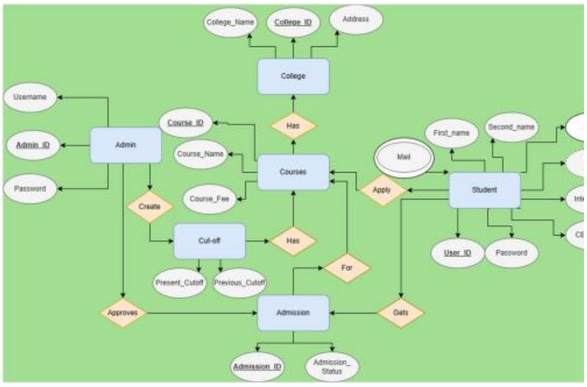


Figure 2: ER diagram of OCAMS

a) College

This is the main entity for which the admission process will be done and this entity has three attributes college name, college id, college address etc...

b) Courses

As we all know colleges will have many courses to offer this is a course entity which has three attributes and these attributes are used to describe various courses and their descriptions, it also had the course fee attribute.

c) Admin

The admin entity is used to represent the root user of the system, this person will have the access of write operation of database through which he can make changes in it, all the admission approval and dis-approval is done by the admin. Admin will have username, password, id and email.

d) Admission

This entity has two attributes Admission ID and the Admission status through this the system will be able to determine whether an application has been accepted or not accepted, the admission status will be updates by the root user i.e., Admin.

d) Cut-off

The cut-off entity has two attributes they are present cutoff and previous cutoff these they attribute determine the cutoff list for a particular course, these cutoffs will be given by the admin.

e) Student

Student is the user of the website and we need to gather a lot of info for the application purpose so we have a lot of attributes for this purpose few of them are: Name, age, number, course applied, inter percentage, CET percentage and JEE percentage so like that we gather all the study and personal related information into application form using these attributes.

V. METHOD AND ALGORITHM

The following method used for the project:

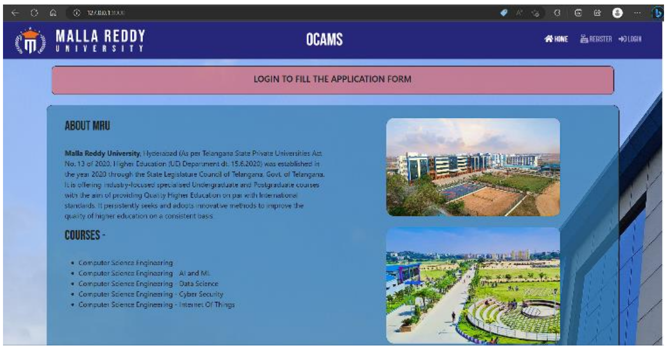
- HTML get method using Django. (To get data from database)
- HTML post method using Django. (To send data to database)
- Views and Models (To initialize and use database)

VI. EXPERIMENTAL RESULTS

The online college admission management system, screenshots off the working project:

a) Home Page

Home page consists of the basic information about the college and the navigation bar has three links: one is home; another is register; and the last one is log in; using these three we can navigate through the register login and home portals.



ABOUT MRU

Malla Reddy University, Hyderabad (As per Telangana State Private Universities Act No. 13 of 2020, Higher Education (UE) Department dt. 15.6.2020) was established in the year 2020 through the State Legislature Council of Telangana, Govt. of Telangana. It is offering industry-focused specialised Undergraduate and Postgraduate courses with the aim of providing Quality Higher Education on par with International standards. It persistently seeks and adopts innovative methods to improve the quality of higher education on a consistent basis

COURSES -

- Computer Science Engineering
- Computer Science Engineering - AI and ML
- Computer Science Engineering - Data Science
- Computer Science Engineering - Cyber Security
- Computer Science Engineering - Internet Of Things

Figure 3: Home Page

b) Register Page

This is the registration page where the new students register themselves into the website, in this page basic details like username, first name, second name, email, password and confirm password are filled. By submitting, they create an account for which the data will be stored in the database.

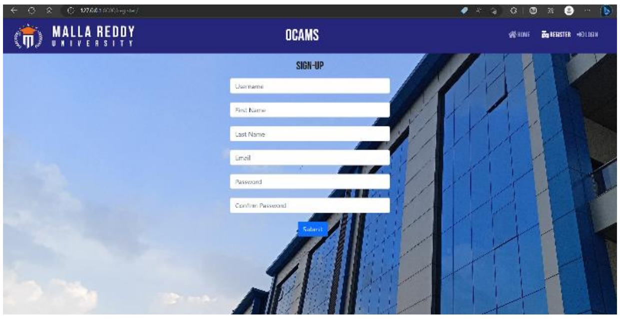


Figure 4: Register Page

c) *Login Page*

This is the login page where all the users and admin can log-in and can view the website. Based on the username and password the website will automatically redirect to the student or admin interface accordingly.

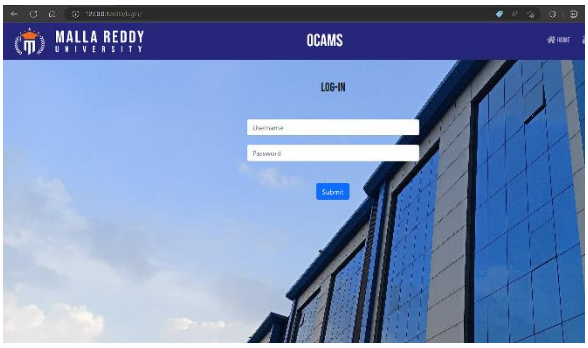


Figure 5: Login Page

d) *Student Home Page*

The home page will be same for all. In the home page you can find the links for cutoff lists and the navigation bar consists of two new portal links, they are: application and application status.

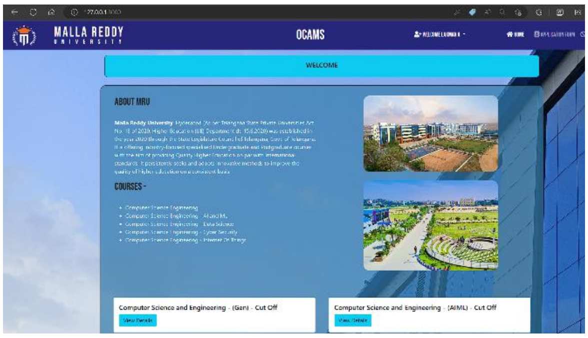

MALLA REDDY
UNIVERSITY
OCAMS
WELCOME
HOME
WELCOME
ABOUT MRU
COURSES -
Computer Science and Engineering - (Gen) - Cut Off
View Details
Computer Science and Engineering - (AIML) - Cut Off
View Details

Figure 6: Student Home Page

e) *Application Pages*

The left one is before filling the details and right one is after filling application the details. Once they fill the details, it will send the application to the administration.

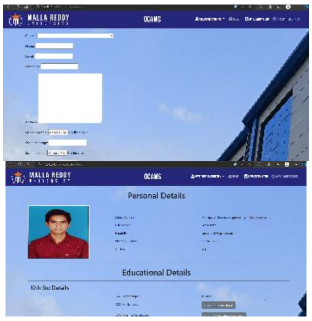


Figure 7: Application Pages

f) *Admin Page*

Admin Page is also similar to the User Interface, but once he switches to the admin option, he can view the admin accessing features.

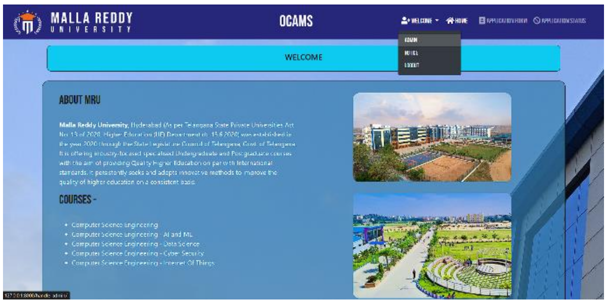


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Figure 8: Admin Page

g) *Admin Handle Page*

In this page admin have four portal links which can take him to all users, pending, approved and rejected applications pages, this is where the admin interacts with applications.

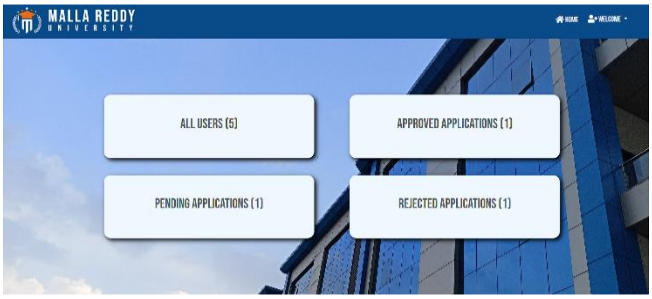


Figure 9: Admin Handle Page

h) *Application List Pages*

All the applications are well organized in these four pages based on their application status.

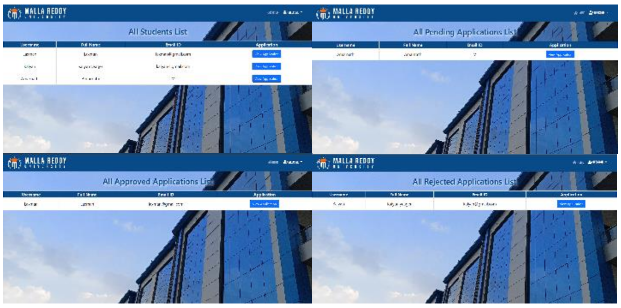
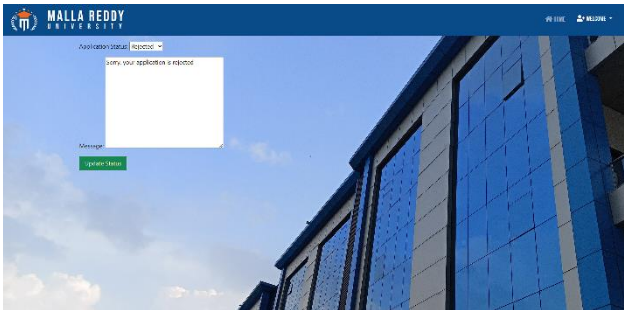

MALLA REDDY
UNIVERSITY
All Students List
All Pending Applications List
All Approved Applications List
All Rejected Applications List
Username
Full Name
Email ID
Application

Figure 9: Lists page

i) *Application Status Changing Page*

Using the view application button on the application list the admin can redirect into below page. Then the admin can approve the application and can reject the application based on the certain criteria.



Application Status: Rejected

Message: Sorry, your application is rejected

Figure 10: Application Status Changing Page

VII. CONCLUSION

In conclusion, an online college admission management system can make the admission process much easier and efficient for both colleges and students. With this project, colleges can handle student applications and admissions electronically, and keep an organized database of their admissions process.

Using Python and Django, we can create a website that will allow college administrators to add details about their college and streams, create cut-off lists for each stream, and manage student registrations and admissions. Students can also register on the website, apply to their desired stream, and receive notifications if they are selected.

The online college admission management system is user-friendly and eliminates the need for manual paper-based applications and record-keeping. This project can save time and effort for both colleges and students during the admission process.

In short, this project can be a helpful tool for colleges to make their admission process more efficient and to make it easier for students to apply, this online admission management system can serve as an example for other educational institutions looking to automate their admission process and improve their resources.

VIII. ACKNOWLEDGMENT

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