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Design of Curriculum Based System: A Website for Students

Chirag Parchani, Kunal Godhwani, Gulam Mohammad Ali, Piyush Nihalani, Dr. Dashrath Mane

Department of Computer Engineering, Vivekanand Education Society's Institute of Technology, Chembur, Mumbai
Maharashtra, India

ABSTRACT: The struggle of a regular BE student has been increasing due to more and more study materials and different kinds of courses. A student visits more than enough websites to collect study materials and other related content such as Syllabus, Online Courses, etc. What if the student finds everything he needs in one place? **“A place for everything, everything in its place”** quoted by Benjamin Franklin (also known as The First American), inspired by this quote we decided to make a website where students get everything such as a Syllabus of a particular subject, Study material, Skill-based course links, recommendations of Courses, Event Updates conducted by councils, Informative Blogs by other students and many more.

I. INTRODUCTION

Nowadays, the educational sector plays a very important role and has a very big impact on the development of each individual. We aim to provide resources to students who are pursuing their Bachelor's as well as Master's Degree. These resources will help them learn as well as improve their skills. Also, our website provides data containing the syllabus, semester contents and as well as other needful things. Our system provides course links as per students' needs. Also, our system provides a Blog section where students of the college can post their queries and other important things regarding placements and courses. And also provides a special section for events where students will get updates on Upcoming as well as Ongoing events. We also know that students often face problems downloading the latest version of engineering books. On our website, we will provide updated books as per the syllabus. They can get knowledge about the events of the college they missed for any reason by viewing the recorded session of these events which will be available on our website. The Blog Section on our website will act as a guide to students in their professional life. Links to recommended courses (Paid and unpaid) will be available due to which students will find courses that are suitable for them.

II. LITERATURE SURVEY

“A Comprehensive Framework to Evaluate Websites: Literature Review and Development of GoodWeb(24/10/2019)”

This scoping study aimed to review and define existing worldwide methodologies and techniques to evaluate websites and provide a framework of appropriate website attributes that could be applied to any future website evaluations.

**“A Review Development of Digital Library Resources at University Level
(16 Feb 2021) Gwo-Jen Hwang”**

The purpose of this paper is to present an innovative approach that is proposed for developing e-libraries with metadata to meet the need of training observation and classification skills in a mobile learning environment.

“Development of a Mobile Application for Lending Free Books and Class Notes,(2020) IEEEat 7th ICETAS R. Borromeo, S.P. Espiritu, M. Luma-as and M. N. Young”

The Book Stack was made to focus on helping students, faculty members and administration in enhancing learning experience by lending textbooks and class notes that can be used as educational materials.

**MeSHx-Notes: Web-System for Clinical Notes Information Extraction
(2018) Henrique D. P. dos Santos, Rafael O. Nunes**

In this context, we present an easy-to-use system that provides users with extra knowledge of the information given in clinical notes, which can be used by anyone with access to the internet.

III. PROPOSED WORK

The proposed work focuses on the implementation of the website Curriculum-Based System. The website acts like a guide as well as a data storage system where students can get all the basic data they need regarding their courses. For authentication, we have made the login and signup functionality.

The frontend part is done in express JS Framework. The login and signup systems are also made using ExpressJs and MongoDB for the backend.

The system is divided into two parts :

1. Users
2. Admin

3.1 Users :

After signup, the user can easily log in and create a profile that contains their Name, email-id, College Name, Year, Branch, etc. Since, the system knows the Year and Branch of the user the system will recommend the same year's data such as Syllabus, Books, etc. After logging in, the user will be directed to the Home Page which will consist of a Navigation Bar (aka Header) and Footer as a component of the website and the Home Page will display recommendations of some Courses and Ongoing Events Update.

Navigation Bar - It contains a Logo, Features with a dropdown menu, About Us and Contact Us. The Logo when clicked will reload and the user will be redirected to the Home Page. The Features dropdown menu will contain sections such as Notes, Courses, Blogs, and Events. About Us consists of information about the website and its role in helping students. Contact Us contains a frame where users can fill in their information and add any query or feedback about the website.

The Notes section contains the Books of subjects according to the branch and year of the specific student. The Courses section contains the description as well as a link to a particular course. The Blog section contains the informative blogs posted by the users for other users. The Event section contains the data regarding upcoming as well as Ongoing events with the countdown UI.

3.2 Admin :

The admin will maintain the website and provide updates to the website if any. The admin will be provided with the login credentials which will help to find bugs as well as edit the Blog section's posts that are unreasonable. The admin has to report the errors, and bugs to the developers.



Figure 1 : Admin

IV. METHODOLOGY

1. Users are authenticated using the passport package and bcryptjs library. The users are required to first sign in to access all the functionalities of our website. This task of preventing the user is handled by two authentication middlewares named 'check authenticated' and 'checkNotAuthenticated'.

2. In the notes section, the user can create, delete as well as edit them. Another middleware is used here to give only the creator of the notes the permission to edit or delete them. Other users can read these notes but don't have permission to do anything else. The student can filter the page based on his/her requirements. (Whether they must of a particular semester, subject or year, etc)

3. The Blogs section also has the same authorization functionality as the notes section. The author of the blog would be visible and the users can ask a query through the comments section of the particular blog.

4. The Links section contains all the courses or youtube playlists that will be recommended by the students to each other which can also be filtered based on the user's/student's preferences. (Whether the link should be paid/free, which domain it must belong to, etc)

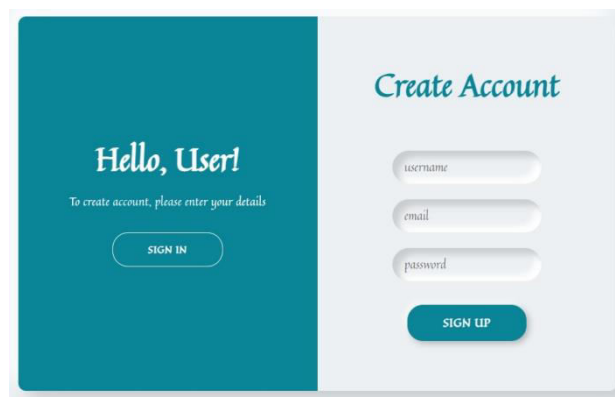
5. The database of our website is stored on MongoDB Atlas Server which is a NoSQL database hence it is relatively faster as compared to SQL databases. MongoDB has a document based data storage.

6. We are using the Express framework for the frontend of our application which is very compatible with Nodejs. We designed templates for the website using the express template engines like EJS.

V. USER INTERFACE

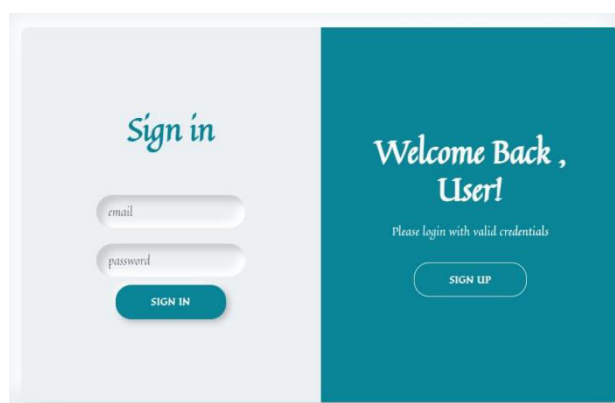
Login & Sign-up System

In the Sign-Up section, the user has to write Name, email-Id, and Password (new). And In the Login or Sign-In section user has to write the verified Email-Id and Password (created).



The image shows a 'Create Account' form. On the left, a teal background contains the text 'Hello, User!' and 'To create account, please enter your details' with a 'SIGN IN' button. On the right, a light gray background contains the title 'Create Account' and three input fields for 'username', 'email', and 'password', followed by a 'SIGN UP' button.

Figure 2 : Sign Up



The image shows a 'Sign in' form. On the left, a light gray background contains the title 'Sign in' and two input fields for 'email' and 'password', followed by a 'SIGN IN' button. On the right, a teal background contains the text 'Welcome Back , User!' and 'Please login with valid credentials' with a 'SIGN UP' button.

Figure 3 : Sign In

Home Page

The first page is an animated UI for a better experience. The START has to be clicked by the user.



Figure 4 : Home Page - I

After clicking on the START button the user will be directed to the actual home page of the website where the user will find a Navigation Bar to navigate further functionalities.

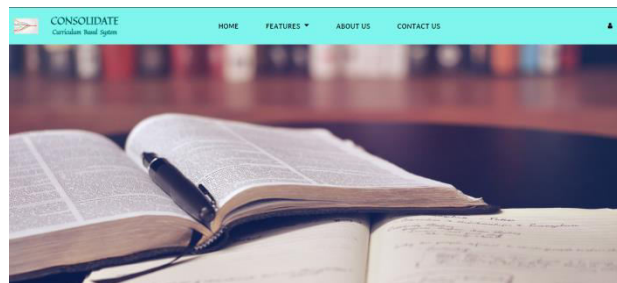


Figure 5 : Home Page - II

Notes Section

In Notes Section, the user will find a filter Bar to select the options such as Courses, Branch, Year and Semester.

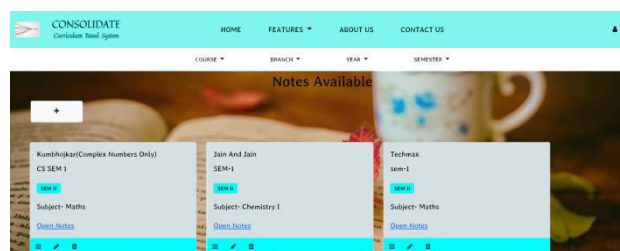


Figure 6 (a) : Notes - I

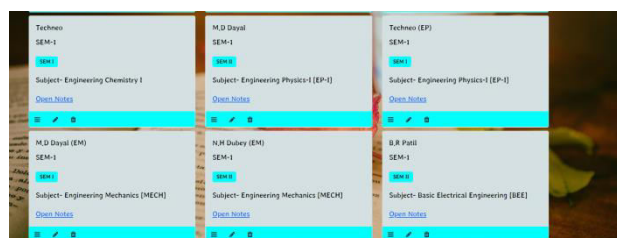


Figure 6 (b) : Notes - II

Link Section

Similar to Notes Section, the user will find a filter Bar to select the options such as -

In the course filter, the options are Paid or Free which means whether the course that is to be selected is either Paid or Free. And so on...

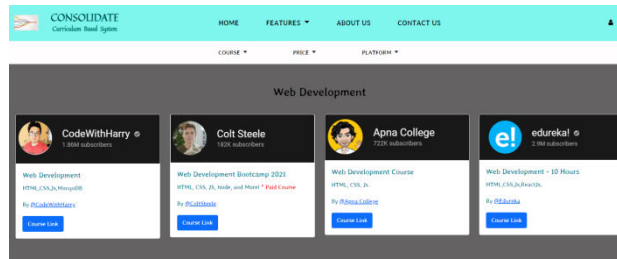


Figure 7 (a): Link Page - I

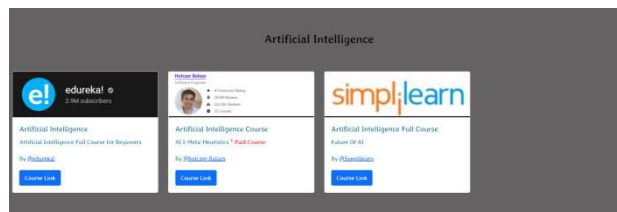


Figure 7 (b) : Link Page - II

Blog Section

In the Blog Section, the user can add blogs that will be read by other users. The blogs should be informative and helpful. If any blog is a scam or reportable, then the blog will get deleted by the admin.



Figure 8 (a) : Blog Page - I

Figure 8 (b) : Blog Page - II

Event Section

In the Event Section, the User will be able to see the Upcoming Events. The User has to click on the Event Image. Also, we have added a Countdown timer for the event.

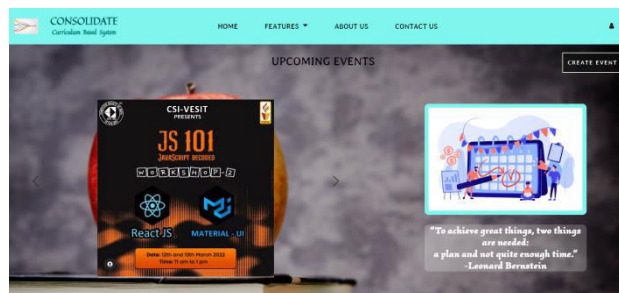


Figure 9 : Events Page - I

After clicking on the Image, the user will be directed to a specific event page where the user will be able to see the Time, Venue, Date, Description and Co-ordinators of the Event.

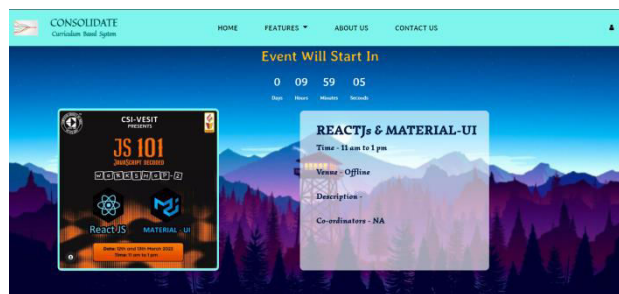


Figure 10 : Events Page - II

Profile Section

In the Profile Section, the user can view and edit details.

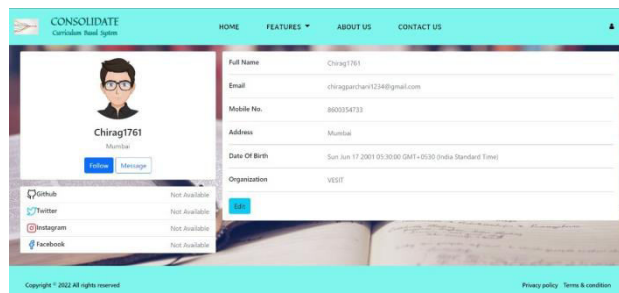


Figure 11 : Profile View

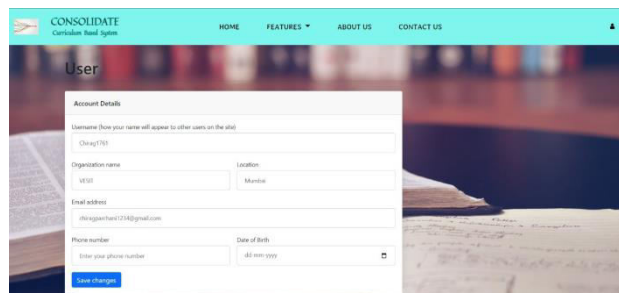


Figure 12 : Profile Edit

VI. RESULTS

The results are a comparison between the Desktop View and the Mobile View. This comparison is done to prove that the website is fully responsive.

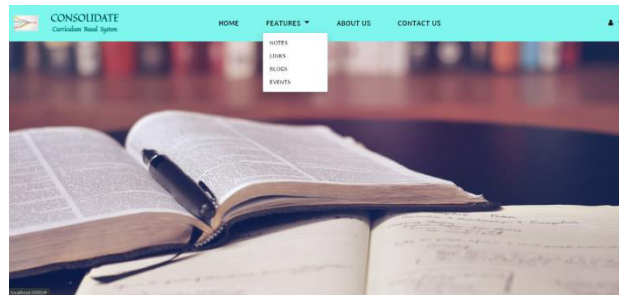


Figure 13 : Desktop View (Home Page)

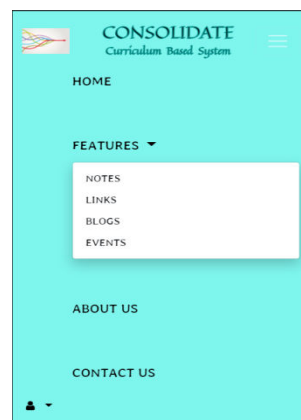


Figure 14 : Mobile View (Home Page)

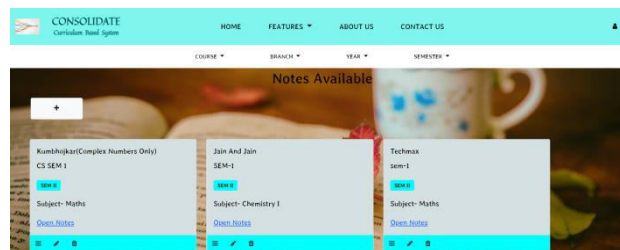


Figure 15 : Desktop View (Notes Section)

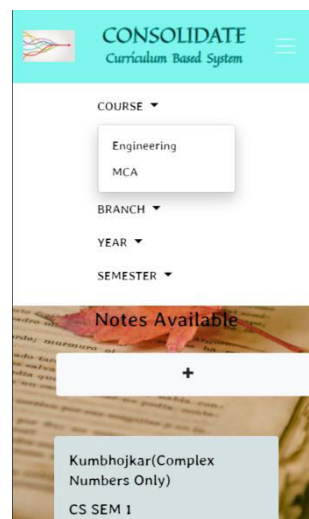


Figure 16 :
Mobile View (Notes Section)



VII. CONCLUSION

Thus, the final system will help students to get everything they want in one place. We will be creating a centralized website where students can get easy access to resources and can improve their skill set. Our website will provide Events Updates as well as reviews and recommendations to other students on notes, books and courses. This website will be helpful for students to keep track of study material, events and many other things. It will be a helping hand to have all data portable and easy to view whenever they want and also ensure data integrity, privacy, and security in an open-access environment.

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