VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI

Mini Project Report on

"UNITY"

Submitted in the partial fulfillment for the requirements of Web Technology Laboratory of 7th semester CSE requirement in the form of the Mini Project work

Submitted By

ABHILASH S	USN: 1BY17CS005
AMBIKA	USN: 1BY17CS021
AMITHBHUSHAN	USN: 1BY17CS022

Under the guidance of

Mr. MUNESHWARA M.S
Assistant Professor, CSE, BMSIT&M

Mr.JAGADISH.P
Assistant Professor, CSE, BMSIT&M

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT
YELAHANKA, BENGALURU - 560064.

2020-2021

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Project work entitled **"UNITY"** is a bonafide work carried out by **Abhilash S (1BY17CS005) , Ambika (1BY17CS021) and Amithbhushan (1BY17CS022)** in partial fulfillment for *Mini Project* during the year 2020-2021. It is hereby certified that this project covers the concepts of *Web Technology and its Applications*. It is also certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in this report.

Signature of the Guide with date
Mr. Muneshwara M.S
Assistant Professor
CSE, BMSIT&M

Signature of the Guide with date
Dr. Jagadish P
Assistant Professor
CSE, BMSIT&M

Signature of HOD with date
Dr.Anil G N
Prof & Head CSE, BMSIT&M

INSTITUTE VISION

To emerge as one of the finest technical institutions of higher learning, to develop engineering professionals who are technically competent, ethical and environment friendly for betterment of the society.

INSTITUTE MISSION

Accomplish stimulating learning environment through high quality academic instruction, innovation and industry-institute interface.

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PROGRAM EDUCATIONAL OBJECTIVES

1. Lead a successful career by designing, analyzing and solving various problems in the field of Computer Science & Engineering.
2. Pursue higher studies for enduring edification.
3. Exhibit professional and team building attitude along with effective communication.
4. Identify and provide solutions for sustainable environmental development.

ACKNOWLEDGEMENT

We are happy to present this project after completing it successfully. This project would not have been possible without the guidance, assistance and suggestions of many individuals. We would like to express our deep sense of gratitude and indebtedness to each and every one who has helped us make this project a success.

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Lastly, we thank our parents and friends for the support and encouragement given throughout in completing this precious work successfully.

ABHILASH S (1BY17CS005)

AMBIKA (1BY17CS021)

AMITHBHUSHAN (1BY17CS022)

ABSTRACT

Unity :

An application which acts as a bridge between Teachers and Students to solve most of Students Problem!! Students Get all the class room details along with subject details, lecture videos , submit assignments and ask queries and doubts . Teacher Get track of the syllabus completed in particular class and get all the students details , upload lecture video link to database. Students get all the videos at a single shot at one place can watch videos and have them as reference. Q & A Section for students, If any students wants to know anything related to academics or any other details they can directly ask here.

Users are divided into 3 category

1. Admin

2. Teachers

3. Students

Each users have their own specific dashboard to view and interact with the application, Students can view the class details , watch class room videos , ask their queries and get all their teachers notes at one shot. Teachers can create class for students and update notes and syllabus as they complete the topic in the classroom , Super admin can grant the permission for teachers and manage all the users and data at the database.

TABLE OF CONTENTS

Chapter 1

Introduction

Unity is a web interfce application for both teachers and students favoring them to help get their required classroom imformation directly with in a blink.The application helps students to get the notes ,details of completion of syllabus, and all the classroom videos at one single place. Students gets all their teachers notes and ask thier queries at one place.

The application is completely built using Django one of the python framework for the backend and have used MongoDB as the databse and the user interface is built with HTML ,CSS, and Javascript. Where in HTML facilitates the structure of the web page ,CSS describes the design for the HTML structure and javascript helps in functional aspect of the application Django helps in the managing the backend services and connect the content of the databse with the application, it helps in rich communication between front end and backend and also the functional aspect of the application.

Students can login to the application and see the classes they belong to and see teachers notes and the video link at one shot. Can go thought the entire class any time they want ask any of their study related queries.Teachers can login and will have their own specific User Interace and can create classes to any specific class and update Status and Question and Answers for that perticular class.Super admin can manage all the content of the application and give user teachers permission and can manage all the students of the entire institue.

1.1 WEB DEVELOPMENT

Full stack development – It refers to the development of both front end (client side) and back end (server side) portions of web application.

Full stack web Developers – Full stack web developers have the ability to design complete web application and websites. They work on the frontend, backend, database and debugging of web application or websites.

1.1.1 FRONT-END WEB DEVELOPMENT

It is the visible part of website or web application which is responsible for user experience. The user directly interacts with the front-end portion of the web application or website. The front-end portion is built by using some languages which are discussed below:

HTML – HTML stands for Hyper Text Mark-up Language. It is used to design the front-end portion of web pages using mark-up language. HTML is the combination of Hypertext and Mark-up language. Hypertext defines the link between the web pages. The mark-up language is used to define the text documentation within tag which defines the structure of web pages.

CSS – Cascading Style Sheets, fondly referred to as CSS, is a simply designed language intended to simplify the process of making web pages presentable. CSS allows you to apply styles to web pages. More importantly, CSS enables you to do this independent of the HTML that makes up each web page.

JAVASCRIPT – JavaScript is a famous scripting language used to create the magic on the sites to make the site interactive for the user. It is used to enhancing the functionality of a website to running cool games and web-based software.

Front End Frameworks – The list of front-end frameworks is: AngularJS, React.js, Bootstrap, jQuery, etc.

1.1.2 BACK-END WEB DEVELOPMENT

It refers to the server-side development of web application or website with a primary focus on how the website works. It is responsible for managing the database through queries and APIs by client-side commands. This type of website mainly consists of three parts front end, back end, and database. The back-end portion is built by using some libraries, frameworks, and languages which are discussed below:

PHP – PHP is a server-side scripting language designed specifically for web development. Since, PHP code executed on server side so it is called server-side scripting language.

C++ – It is a general-purpose programming language and widely used now a days for competitive programming. It is also used as backend language.

JAVA – Java is one of the most popular and widely used programming language and platform. It is highly scalable. Java components are easily available.

PYTHON – Python is a programming language that lets you work quickly and integrate systems more efficiently.

JAVASCRIPT – JavaScript can be used as both (front end and back end) programming languages.

NODE.JS – Node.js is an open source and cross-platform runtime environment for executing JavaScript code outside of a browser. You need to remember that NodeJS is not a framework and it's not a programming language. Most of the people are confused and understand it's a framework or a programming language. We often use Node.js for building back-end services like APIs like Web App or Mobile App. It's used in production by large companies such as PayPal, Uber, Netflix, and Walmart and so on.

Back End Frameworks – The list of back end frameworks is: Express, Django, Rails, Spring, etc.

Chapter 2

Literature Survey

The [1]system has come up withmany functionalities for educational institutions totrack the student progress andmanaging attendance. Ithelps both student and guardian to keep track of student progress without visiting to the college. It also notifies student and guardian during the time of important events which are happening in institution. One more feature is guardian get alerted whenever student get failed in the exam or student not able to meet the expected attendance average. Student Information Report System (SIRS) is applicationsoftwareandwhich has intentiontobegina conductive and directinterchanging the statistics in a secureplatform to coalescewith students, faculties, parents and the college/schooladministration.The student information has the particulars(like register numbersem, date-of-birth,sex, parent phone number, address, parent name,etc.) invade to the system by the faculties. Allthese particularsis storedin the database. SIRS application is trouble free to useinschools,colleges, universities, and any other educational institutions.It can be customized as per the need.It can be used in private and government educational institutions also.

The paper[2]providesthe particularsto carry outthe performance, management and decision-making functions of enterprises or organizations.Enormousgrow of students is caused to expand the functionality in the respective educational institutions. As student added to the educational system it is difficult to manage and track student details.To overcome difficulties we come up with this new approach student information management system with additional features. This new approach will provide fast processing, efficient student tracking, and produces desired result.

Attendance[3] is part of any system to keep track of the particular person. It is mandatory process in educational system which directly reflects the student progress. In educational institutes attendance management is normally a manual process.There is enormous grow in the software industry which has privileged colleges to maintain the attendance system by using gadgets which is the best way. As we are using the smartphones we not require

maintainingattendance register. It can beeasily done in mobile application.Faculty will be going to take the attendance when class gets started. They will initially login to the system through mobile application. Once attendance has been taken successfully for the class it willsent tosever throughGPRS.The facultiescan alsodo the necessary functions likeregistering new students, deleting theinformation about a particular student, modifying theinformation regarding the student etc.

The model [4] utilizescomputer aided system.The model playsmainrole inan institution or in the college management. Initially,the system has developed with four layers based on the hierarchy suchas Web display layerwhere application is deployed and displayed for end users.Business logic layerresponsible for handling the functionality of the product.Data access layeris responsible for viewing the data.Database layerresponsible for storing the student data. In Database layer ER diagram has been designed to provide data normalization.

The paper [5] providesend user to seamless navigation to the application and ease of access. The model provides information management storing of student academic reports. This model consistsof various functionalities like information about the courses available in the college starting from first grade to graduation. It also enables students to enrol to particular course through online, online fees payment, examination results, and also get notified when important events occur.

The papers [6] willexplains how it is playing animportant role in the education domain. This system is provides seamless access through the web based application to access and manage different departmentor all over the organization. Thissystemis developed for an engineering college it will provide end users to maintain their data with minimum effort.Initially faculties/students getregistered with the system once they finish registration processthey can accessthe systemas well as they are able to do the changes in thedata.Either student or faculty can upload and copy the statistics from the database. Since it is a web based application which is accessible from any part of the world it has certain features like accessibility, easy to use. IOT, easy to manage etc. It is developed to suite the current environment which is rapidly growing in the student domain.

Chapter 3

PROJECT IN DETAIL

3.1 PROBLEM STATEMENT

Students face a lot of problem searching for relavent notes for studying and to clear their doubts and also gets the syllabus status.Many a times students may also miss the classes dude to some problem and they are provied with all the classroom videos at one shot in a single place where in they can go thought any class on any time of instence.Teahcers on the other had have a difficult time on remembering the syllabus completed to perticular class.

3.2 SCOPE AND MOTIVATION

With this application we have provided an Interface for both teachers and students wheren in when the students login to the website they can view the classes they belong to go throught all the classroom material and videos all at same place. Teachers can login to their dashboard and create class for any particular class and update notes and status as they complete it in any of the class.Admin can manage all users and grand teachers permision for any users and maintain the appliation resources.

3.3 PROPOSED SYSTEM

UNITY is a web based application. The application is completely built using Django one of the python framework for the backend and have used MongoDB as the databse and the user interface is built with HTML ,CSS, and Javascript. Where in HTML facilitates the structure of the web page ,CSS describes the design for the HTML structure and javascript helps in functional aspect of the application Django helps in the managing the backend services and connect the content of the databse with the application, it helps in rich communication between front end and backend and also the functional aspect of the application.

Chapter 4

REQUIREMENT SPECIFICATION

4.1 HARDWARE REQUIREMENTS

- Processor: INTEL / AMD
- Main memory: 2 GB RAM (Min.)
- Hard Disk: Built-in is sufficient
- Basic input and output devices.
- Monitor: 1024 x 768 display resolution.
- Internet Connection Broadband with a speed of 4 Mbps or higher.

4.2 SOFTWARE REQUIREMENTS

As a part of Software Requirements, the tools, plugins and technologies used are –

- **HTML5 –** Page layout has been designed in HTML.
- **CSS3** – CSS has been used for all the designing part.
- **JavaScript** – All the validation tasks and animations has been developed in JavaScript.
- **Django –** Back end functinalities are built with Django.
- **MongoDB** – MongoDb database is used as the database for the project.
- **Django-Server –** To run the project on localhost using Server.
- **Web Browser** – A web browser like google, Firefox, Edge to run the application.

Chapter 5

DESIGN AND IMPLEMENTATION

5.1 DESIGN

The design of the unity has following Users, each of them has its own functionality.

- Admin
- Students
- Teachers

5.1.1 ADMIN

- Manager all the teachers.
- Provide Subject details to teacher.
- Look after all the data and its
- management.
- Managing databases.

5.1.2 STUDENTS

- They get all the class Room details at a single place.
- Can upload assignment and get evaluated.
- Get all the class video at a single place at one shot.
- Can ask any doubt and get clearify in the Q & A section.

5.1.3 TEACHERS

- Create class and add students to specif class.
- Manage all students assignment and evaluate based on the performance.
- Keep track of the syllabus of each section.
- Upload lecture video to database.

5.2 IMPLEMENTATION:

The Applications is built using all open source and free Software. Git is a version control application thought which the application can be maintained easily with out any worrying of saving the status in zip file or so. Github facilitates the project files to store which also help in collaboration. Visual Studio Code is a code editor used to code the project with ease . It also helps in navigating through all the files and edit the code quick and easy.

Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.

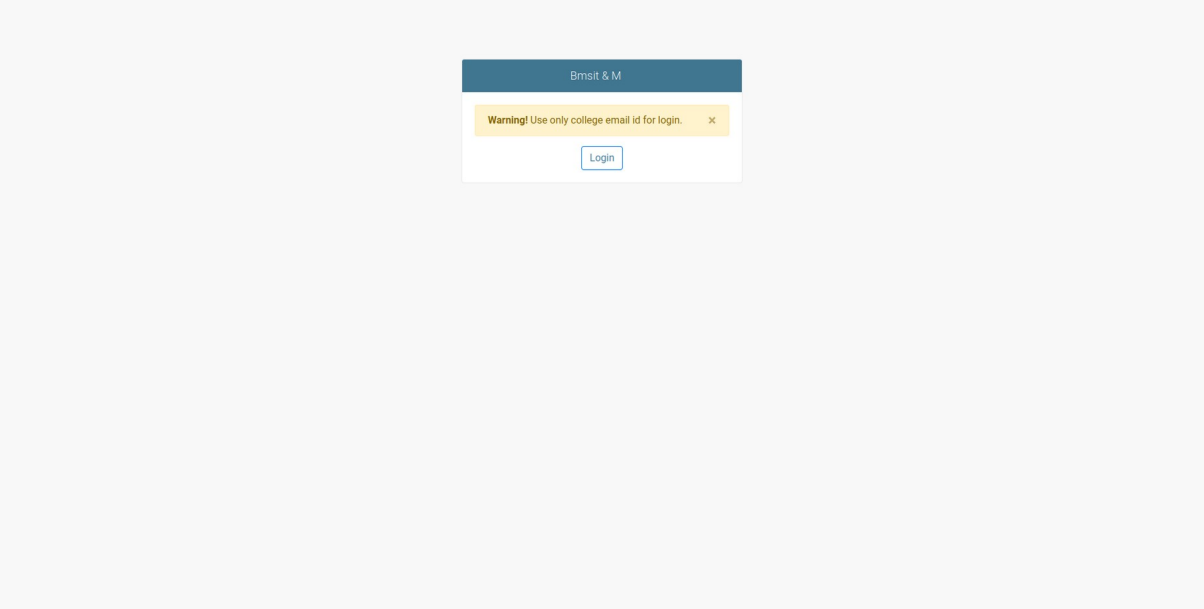
Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains CSS- and JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components

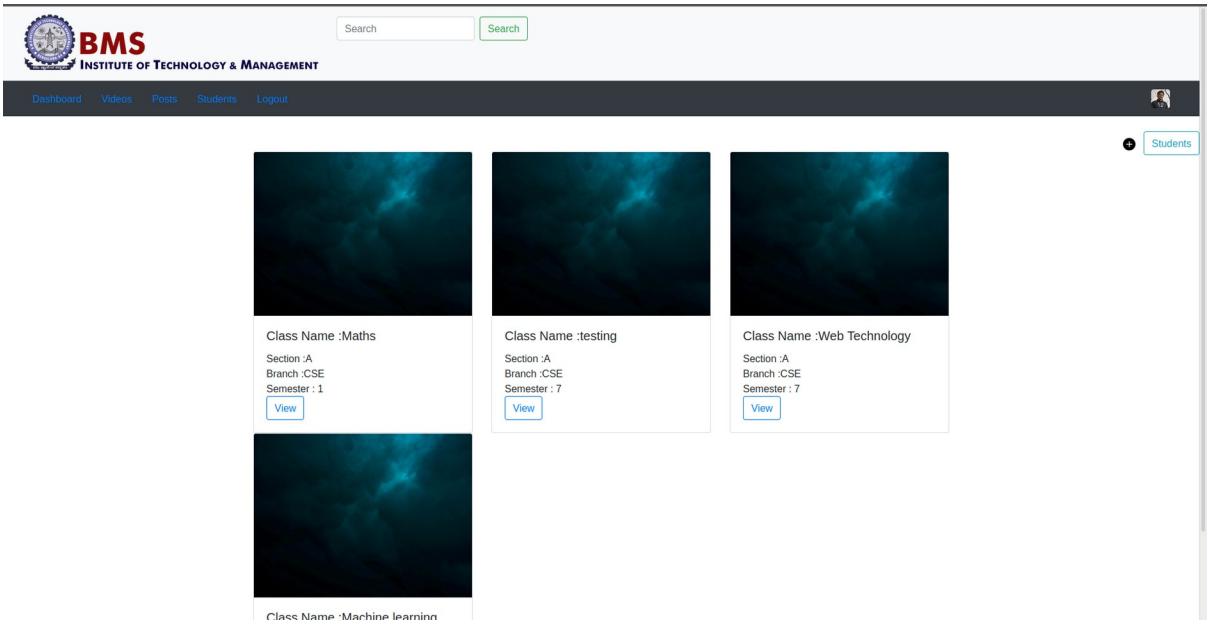
MongoDB is a cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server Side Public License.

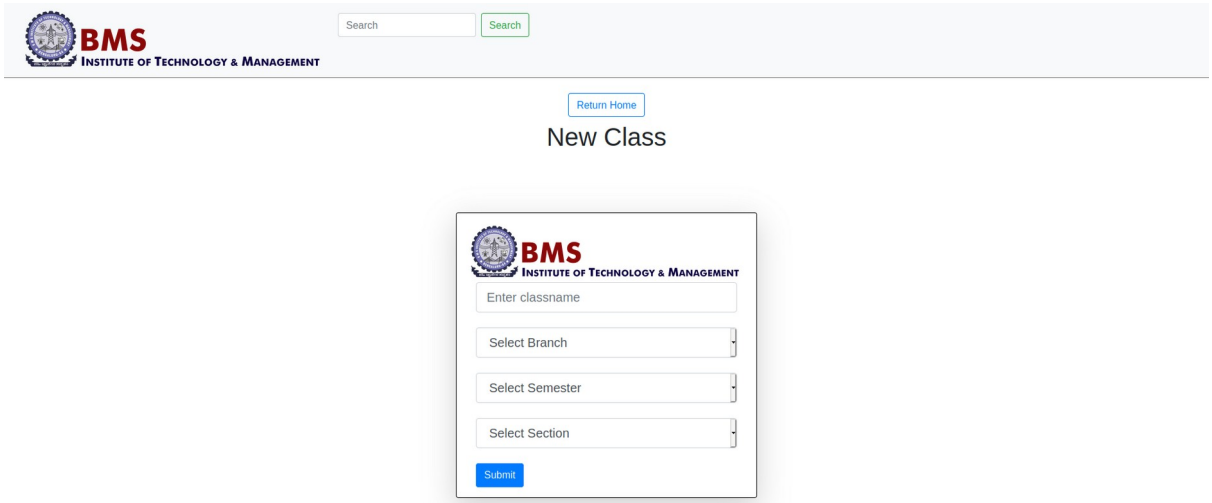





5.2.1 IMPLEMENTATION WITH SCREENSHOTS



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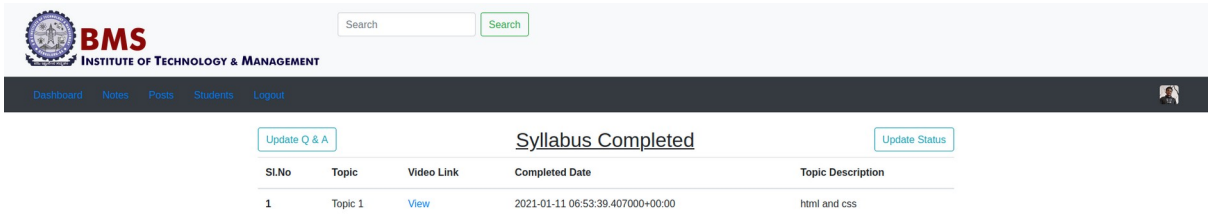
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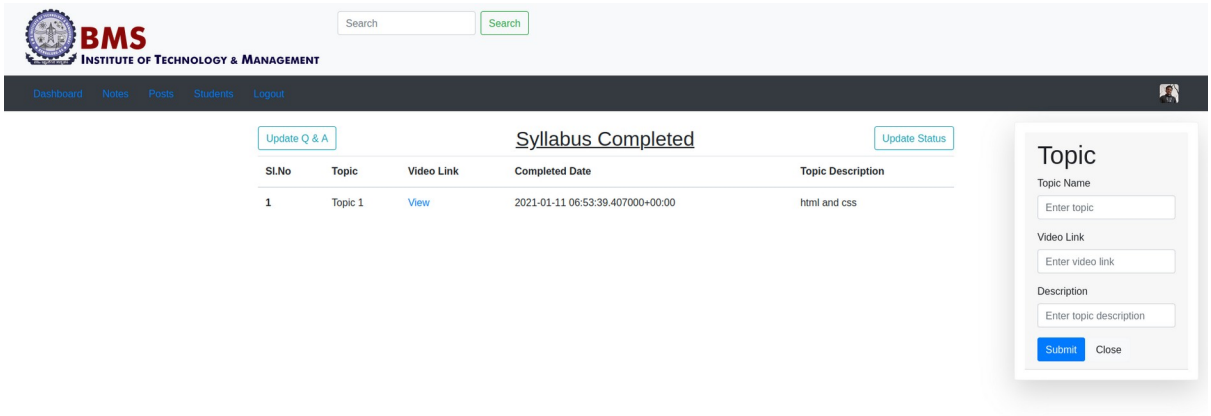
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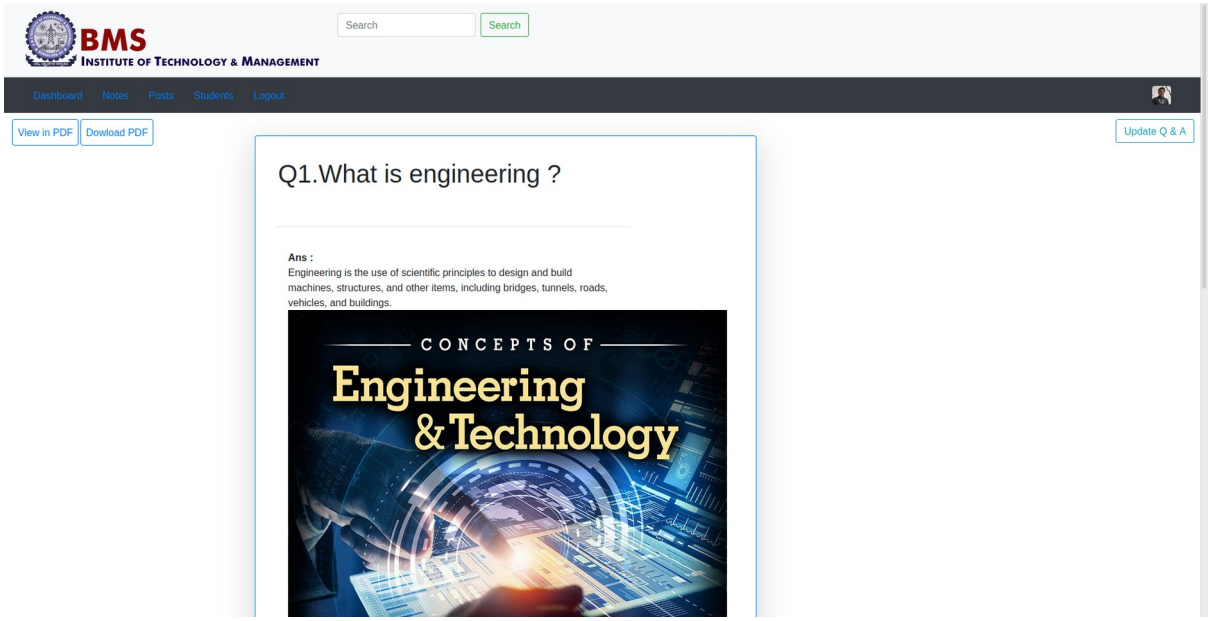
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Ans :
Engineering is the use of scientific principles to design and build machines, structures, and other items, including bridges, tunnels, roads, vehicles, and buildings.
CONCEPTS OF
Engineering
& Technology


1 of 2
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Q1.What is engineering ?
Engineering is the use of scientific principles to design and build machines, structures, and other items, including bridges, tunnels, roads, vehicles, and buildings.
CONCEPTS OF
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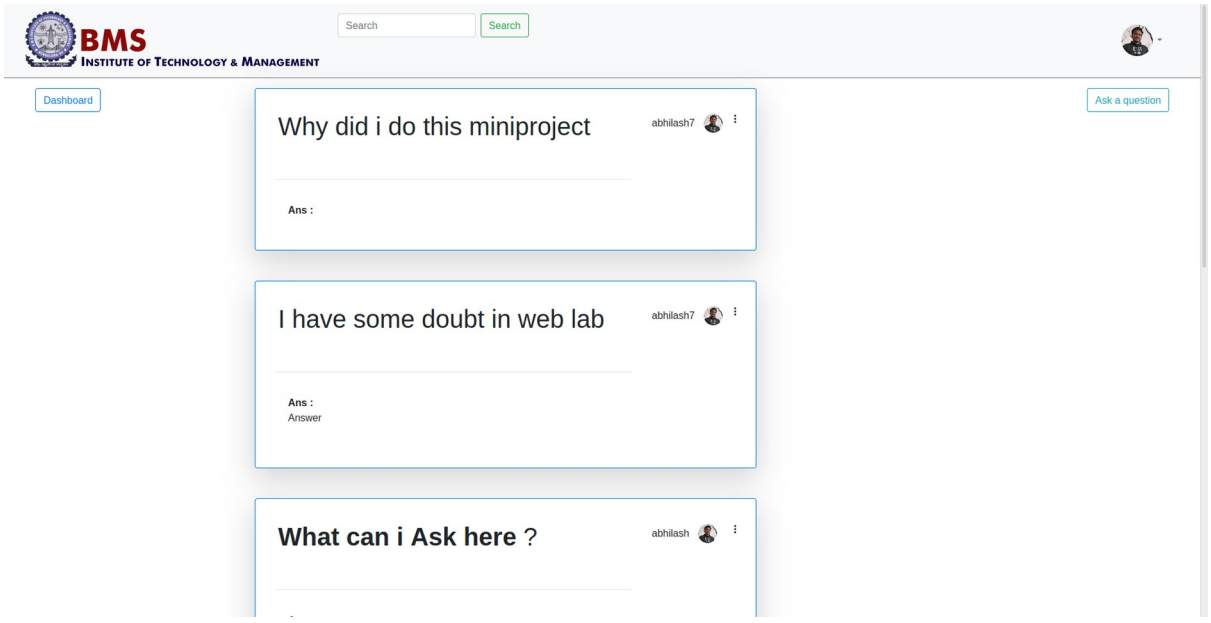
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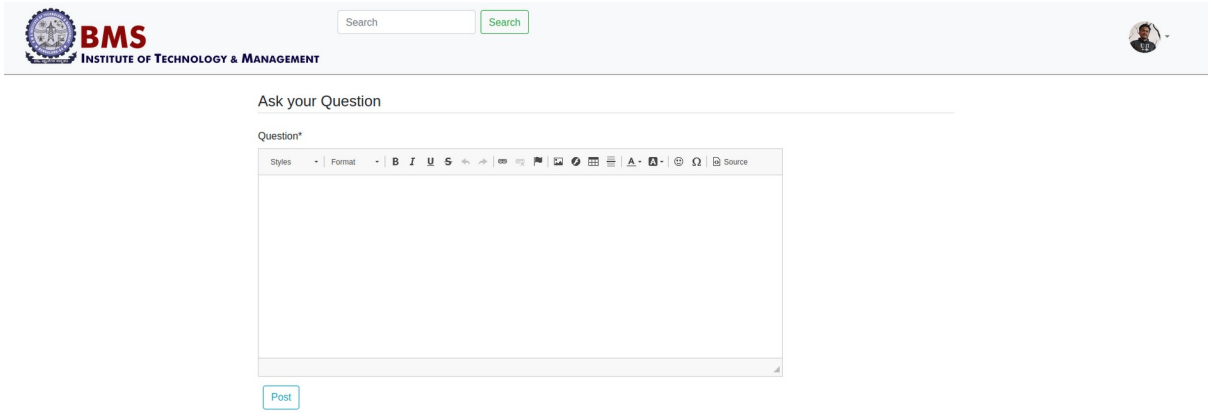
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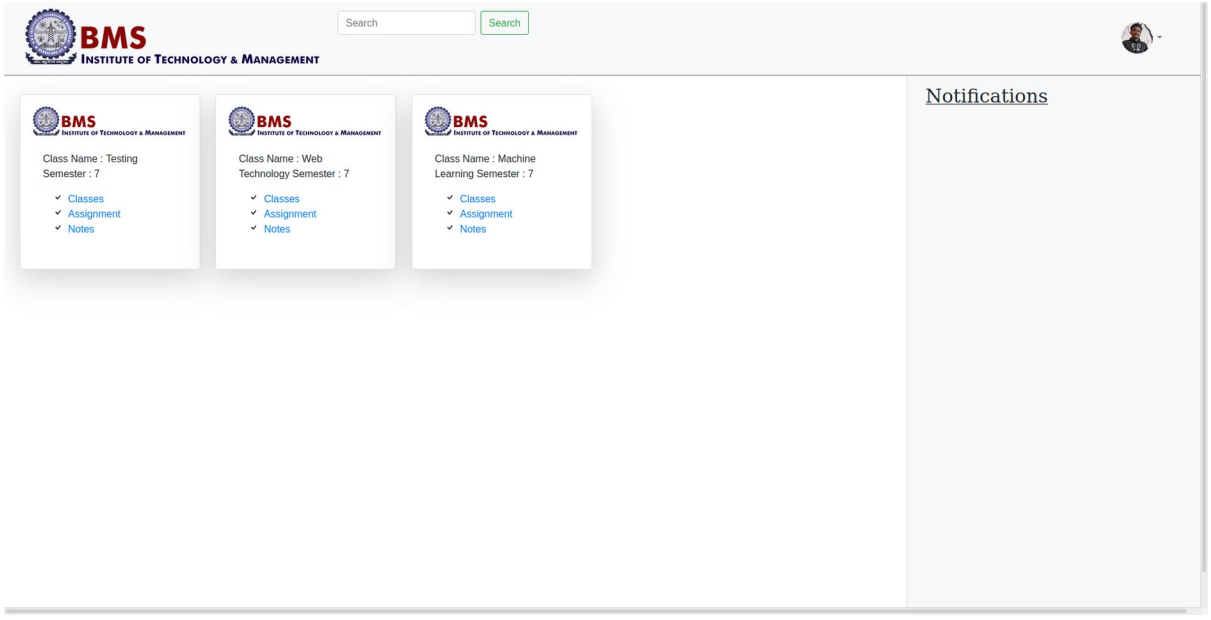
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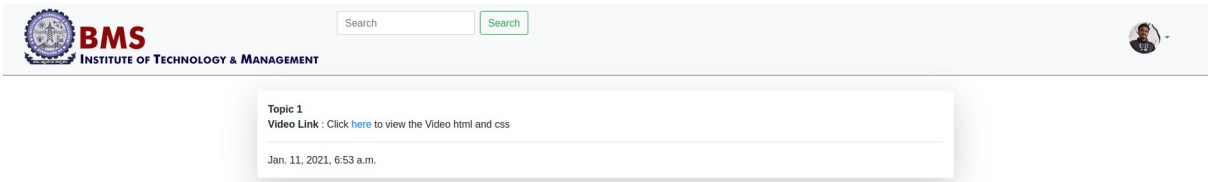
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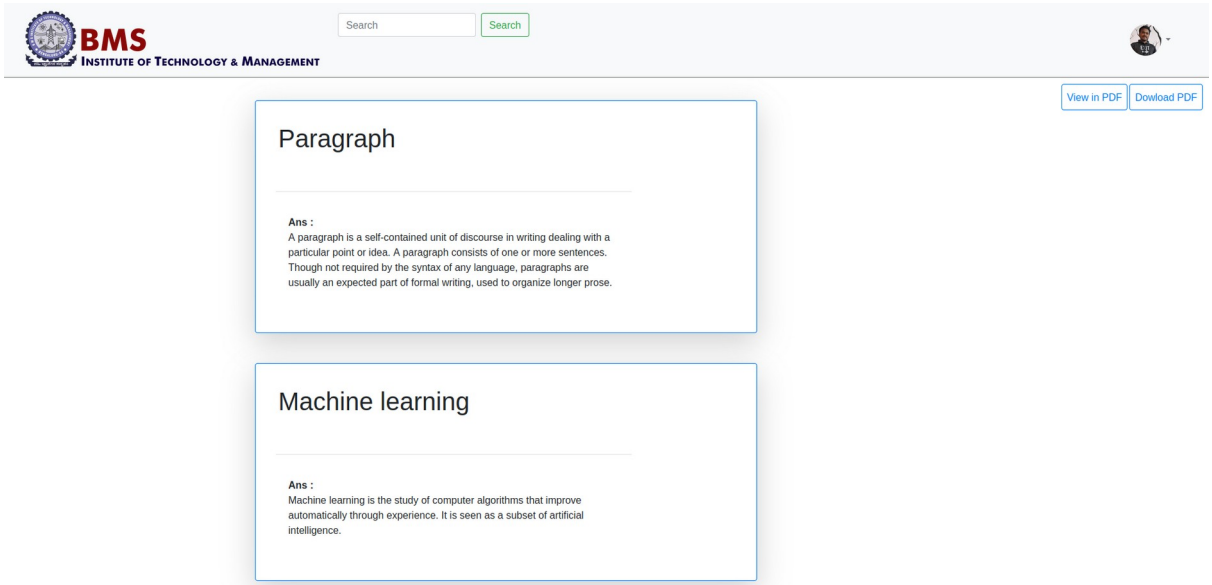
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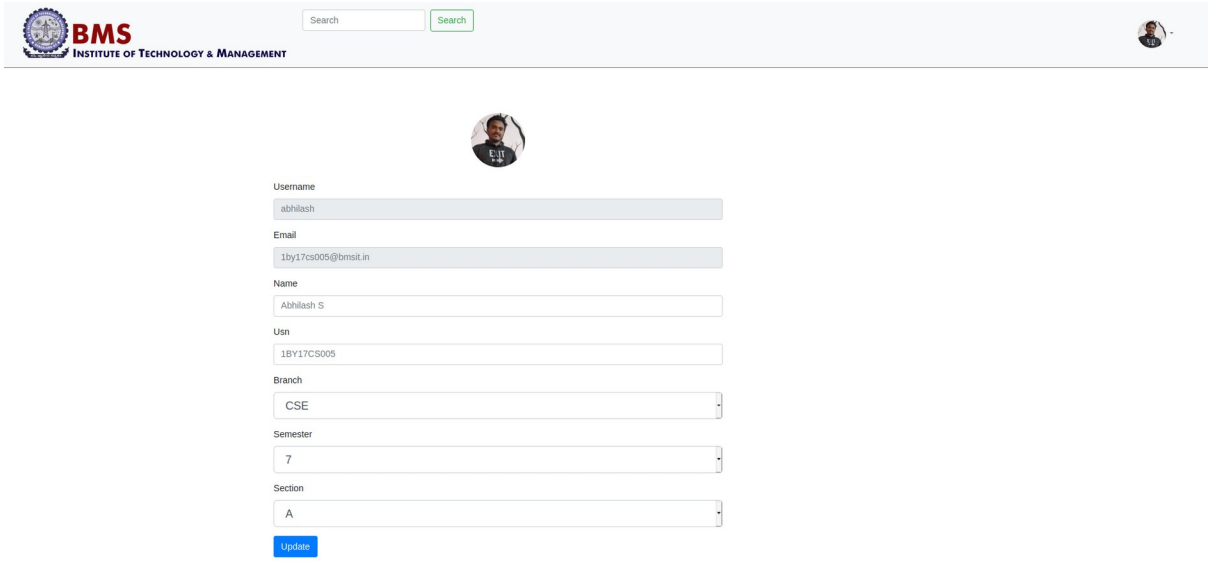
A paragraph is a self-contained unit of discourse in writing dealing with a particular point or idea. A paragraph consists of one or more sentences. Though not required by the syntax of any language, paragraphs are usually an expected part of formal writing, used to organize longer prose.
Machine learning
Ans :
Machine learning is the study of computer algorithms that improve automatically through experience. It is seen as a subset of artificial intelligence.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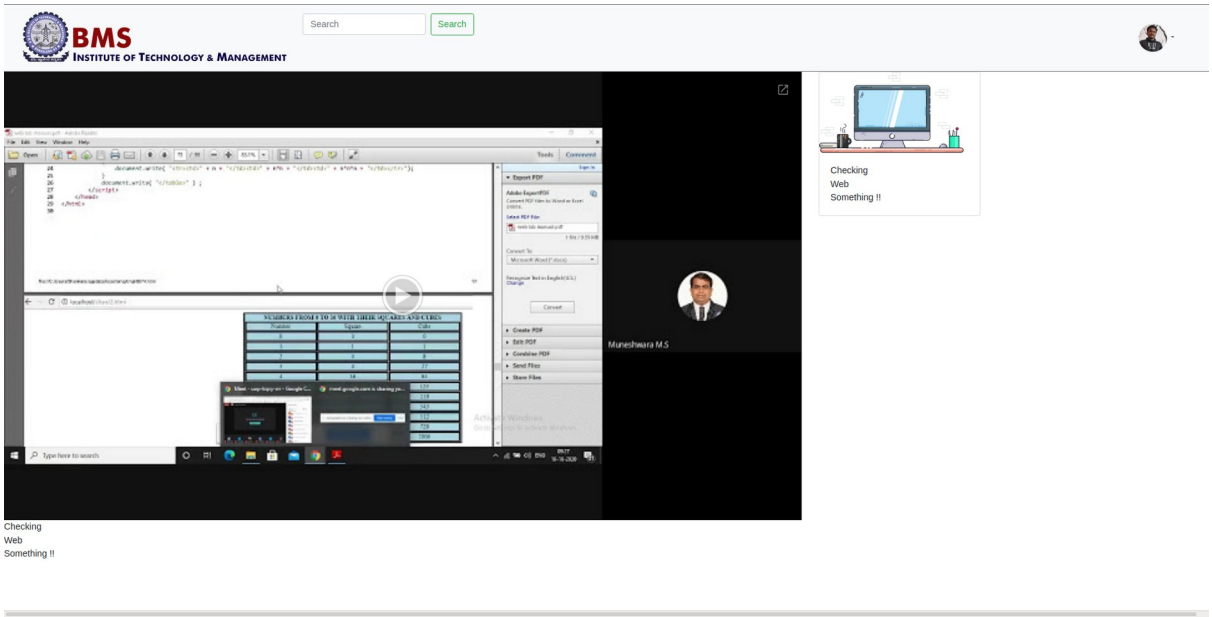
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Chapter 6

FEATURES AND FUNCTIONALITIES

6.1 FEATURES

Students can get all the class room details along with subject details, lecture videos , submit assignmets and ask quaries and doubts .

Teacher can keep track of the syllabus completed in particular class and get all the students details , upload lecture video link to databse.

Videos, users can get all the videos at a single shot at one place can watch videos and have them as refrence.

Q & A Section for students, If any students wants to know anything related to accademics or any other details they can direcly ask here.

6.2 FUNCTIONALITIES

- ✔ Students Login
- ✔ Teachers Login
- ✔ Admin Login
- ✔ View class
- ✔ View Notes
- ✔ View Videos
- ✔ Ask queries
- ✔ Download Notes
- ✔ Create Class
- ✔ Update Syllabus Status
- ✔ Update Notes
- ✔ Update user permission
- ✔ View Syllabus Status

CONCLUSION AND FUTURE ENHANCEMENT

CONCLUSION

Student Management System is very useful in an institution or in college or in universities. There is no paper work in this proposed system. Supervision can be done from anywhere. This project especially minimizes human effort necessary. This application is handled by the college so there is no information leak and data will be secured. Since it is a web based application anyone can use the system anywhere at any time and it is very easy to get the necessary information without the latency. It is very useful to the students to get their report on attendance and internal assessments. Parents also get benefited more since college is going to send the notification of the student via the SMS or email will be sent to get the recent activities happen in the college. Since this application will be handled by the college whenever they need any changes in an application they can make it without the upfront investment, and the system will be more secure when it is handled by the own college

FUTURE ENHANCEMENT

This application can still be enhanced with provided real time notification and providing rich communication and user interface can still be made more attractive. The information provided gets updated in the real time and make modify in a better way to feature and enhance the usability of the application and facilitate the ease of communication.

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