MATERIALS UPLOAD PORTAL FOR COLLEGE STUDENTS

Submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering Degree in Computer Science and Engineering

By

SWASHA K (Reg.No – 39111003)
STEFFIE GRACIA S (Reg.No - 39110976)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SCHOOL OF COMPUTING

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)
Accredited with grade "A" by NAAC
JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI – 600119

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SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Accredited with "A" grade by NAAC
Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600 119
www.sathyabama.ac.in

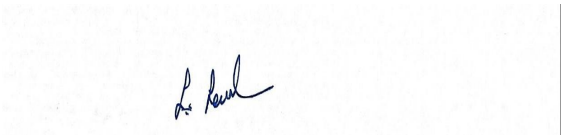
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **Swasha K (39111003) and Steffie Gracia S (39110976)** who carried out the project entitled "**MATERIALS UPLOAD PORTAL FOR COLLEGE STUDENTS"** under my supervision from October 2022 to March 2023.

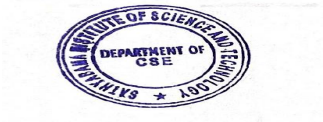
Internal Guide

Dr. M. MAHESWARI M.E., Ph.D.



Head of the Department

Dr. L. LAKSHMANAN,M.E.,Ph.D.



Submitted for Viva voice Examination held on 24.04.2023

Internal Examiner

External Examiner

DECLARATION

I, **Swasha K (Reg.No- 39111003),** hereby declare that the Project Phase-1 Report entitled **"MATERIALS UPLOAD PORTAL FOR COLLEGE STUDENTS"** done by me under the guidance of **Dr. M. Maheswari, M.E.,** is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering degree in **Computer Science and Engineering**.

DATE: 24.04.2023 Swasha K

PLACE: Chennai **SIGNATURE OF THECANDIDATE**

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ABSTRACT

Students frequently experience issues while taking notes, which interferes with their ability to study. There are many reasons students miss to take notes in college. Without notes, they might miss on important information and it would be really hard for the students during their exam times. Students will have a place to congregate and engage in collaborative learning through our application. It is possible for students to their materials (both written notes and documents in PPT, PDF, DOC, etc. format) for free access by other students in any branch or semester. Each user will log in to the application using their individual account. This application will also help the students to earn money. Students who wish to earn money while studying can lock their notes and the other students who want to download the notes have to pay the uploader. This way the application will benefit students to earn part time and also encourage students to take notes in class. There are few existing models for the said application but users face many difficulties like access to notes only after payment, does not accept hand written notes, must upload notes regularly, allows upload only for a particular stream. The proposed method provide solutions like students from different streams can upload their notes, notes can be downloaded for free or paid version based on how the uploader has set the download option. The other important feature is that Student Performance Analysis is done using Random Forest Regressor. The future work of this application is to enable student credit other student for their work by including like feature which will motivate the students to do a better job. This application is intended to be an Educate and Share application.

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1.1 INTRODUCTION

A vital learning skill for both the classroom and the workplace is taking notes. An opportunity to understand and learn from what you have heard is provided by carefully organized notes. Students often miss taking notes in class for many reasons. Some students attend internships and hence they will not be able to attend regular classes, some other students might miss taking notes because they concentrate more on extra-curricular and some organize and attend events, workshops conducted both inside and outside the campus. Few other students miss taking notes because of some personal reasons. It is also very important for students to share their notes with each other because they can share and transfer ideas and knowledge.

This application allows students to upload the notes related to subject, branch and semester. Other students will be benefited by downloading the notes and using it to increase the knowledge.

This application also allows students to sell their notes. Earning while learning and helping can be fun and advantageous both at the same time. Students who wish to earn money while studying can lock their notes and the other students who want to download the notes have to pay the uploader. This way the application will benefit students to earn part time and also encourage students to take notes. Students can sign up for free and start uploading the notes for free.

Students who wish to earn money can lock their notes and set their own selling price and promote their documents so that many students can download it. Selling notes is an excellent way to earn some extra money. This is absolutely motivating the students to take notes and sell them online.

The other important feature of this application is Student Performance Analysis. To predict the student performance Random Forest Regressor algorithm is used. Dataset has been collected from Kaggle. Once the dataset is collected, necessary libraries are imported and feature engineering like checking for null values, Data visualization is done. After that data pre-processing is done. Here categorical data are converted into numerical data. The final step is data modelling. The dataset is split into 75% training data and 25% testing data and the model is created using Random Forest Regressor

which gives an accuracy of 99.72%. The model is the deployed using flask. Students have to enter relevant details to get their average score. This will allow students to understand where they stand and will motivate students to prepare more and perform better in exams.

1.2 Problem Statement

Taking notes can be a big challenge for students with learning and thinking differences. This application can help students with this note taking difficulty. With college notes being an essential aspect of academic success, it's crucial to have the right tools to help you stay organized and efficient. This is where the best note uploading application comes in handy. Not only does it make the process of taking notes and uploading them a breeze.

So why struggle with traditional paper notes when you have an application that simplifies the task and helps develop your skills? Effective listening, clear handwriting, organized outlines, and recording of key points are just a few of the note-taking skills you need to master. These skills are not only useful in the classroom but also in your professional life. Being able to quickly take down notes during a meeting or conference can help you stay organized and focused. One useful application that can help you with your note-taking skills is the ability to upload your notes to the cloud.

This way, you'll have access to them from anywhere at any time. With these skills and tools at your disposal, you can enhance your academic success and achieve your goals with ease. With the ever-increasing cost of education, students are always looking for ways to earn some extra money. The good news is that there are now innovative applications available that help students make money by sharing their notes. One such application allows students to upload and sell their notes to other students who may need them.

This not only helps them earn some extra cash but also enables them to help their peers in their studies. Whether you are a college student or a recent graduate, this application can be an excellent way to earn some money while putting your knowledge and skills to good use.

1.3 Objective

The online interface of the new application is designed to be user-friendly and intuitive, making it easy for even the most technologically-challenged students to upload and download their notes. With just a few clicks, users can navigate through the designated departments and select the correct year to access the relevant course material. The interface is also optimized for efficient and streamlined uploading and downloading, ensuring that users can quickly and easily share notes with their peers.

This user-friendly approach is key to the success of the application, as it encourages students to actively engage with the platform and build a community around shared knowledge. By providing an online platform that is both accessible and efficient, this application is poised to revolutionize the way that students access and share educational resources.

To access the note management system, a user must first go through the process of login. Once logged in, the user can easily upload or download their notes as required. In case the user has not registered already, it is necessary to register before being able to login. Once logged in, the user can create new notes, update existing ones, read and delete them as per their convenience.

This application is an all-in-one solution for students and professors who wish to earn money through their work. With the ability to create, upload, and lock files, users have complete control over their content. Moreover, the system also allows users to update their profile/account details with ease. The uploader can fix their own selling price of the documents they upload, giving them complete autonomy over their earnings.

This innovative platform is designed to benefit students both academically and financially. By sharing their notes, students can help others in their class to better understand the subject matter, while also earning credits that can be redeemed at a later point in time. The application is easy to use and requires only a few simple steps to upload notes and earn credit points. With this app, students can now easily share their knowledge and help create a collaborative learning environment.

1.4 Scope

Many of our students have faced problems taking notes and maintaining it. Managing their daily notes and referring to them faster in the future is one of the challenges they face every day.

Similarly, students might be doing several other side-hustles to fuel your income. Since a student, may not have much time to spend on different side hustles, this idea requires no extra time or effort from them. It is nothing but sharing their notes or selling their notes online. Sell the notes of your previous classes or the ones you no more need or the current year notes and earn some side cash. Selling notes doesn't require the students to do any extra work. The students already spend time in college taking notes every day, that is all the time they need to invest in this side hustle.

This project proposes to keep track of the all the notes a student has made earlier. A student can insert multiple notes and also delete them in the app. The App has a very simple and interactive interface which helps the students maintain their notes and keep it at one place for future references. Most of the activities in the app uses a flexible constraint layout, which is easy to handle for different screen sizes. Use of familiar audience Edit Text with hints and interactive buttons made it easier for students to interact without providing any detailed instructions pages. Additionally, the option to lock files ensures that only those who pay for it can download it. All in all, this application is a boon for content creators who want to monetize their work without any hassle. Encouraging students to take notes and share them with their classmates is now easier than ever before. Thanks to this application that not only helps students upload their notes online.

Apps also uses App Navigation to switch between different screens. This application also allows the uploader to lock the file if the person wishes to earn money through it. The uploader can fix their own selling price of the documents they upload. This application also provides the uploader with credit points based on the number of downloads. The student performance analysis feature of the application allows student to get their average score just by giving few inputs. It helps student understand where they stand and improve themselves.

CHAPTER 2

2.1 LITERATURE SURVEY

Alejandro Lorenzo-Lledó et.al [1] The COVID-19 crisis has had a profound impact on the world at large. Universities have been impacted by the prevailing worldwide pandemic scenario, which has spread to many facets of society. With the use of information and communication technologies as a meeting place for teaching professionals and students, face-to-face learning scenarios were transformed into online or hybrid teaching in this regard. A quantitative strategy was used, with a non-experimental, cross-sectional design.

Dastgir Pojee et.al [2] The goal of this initiative is to digitize and reduce the amount of work required for a college or university to manage all of its documents. Users are made more convenient by the MP-CMF thanks to its online paper checking, attendance, and notice board modules. Also, it helps manage and update student data with the least amount of human labour. This technique eliminates data inconsistency and decreases data redundancy. A quantitative strategy was used, with a cross-sectional, non-experimental design. The online paper correction module of MP-CMF, where all the descriptive answer booklets are scanned and forwarded to the appropriate academics, is its standout feature.

Gang Cui et.al [3] proposed a novel automatic summarization-based method for extracting courseware information is proposed. This method is then used to automatically construct summaries of the knowledge content of online courses. The approach arranges the summarizing of the e-courseware based on the extracted important information. This is done after analysing the structure of the e-courseware and calculating the similarity between two sentences.

Norul Ashikin Abu Kasim et.al [4] This study outlines the architecture of a virtual learning content management system for usage by instructors and students. By evaluating the students' accomplishments, it reports the intended learning objectives and explains the justification for using V-LCMS. The accomplishment is described as a case study that was completed for a course at the undergraduate level. The results of the assessments given to the students who took part in this V-LCMS case study are related to how well they did on

the course's learning goals. The paper focuses on making it simple and quick to upload notes and assessments while also streamlining interactions between teachers and students.

F. H. Yeh et.al [5] With the use of modern video tools, teachers can now record their lectures and transmit them directly to e-learning platforms. Yet, some students might only understand some of the movie, forcing them to waste time downloading the full thing. For this reason, scene segmentation in videos is important. Also, in the traditional teaching paradigm, students are required to listen to lectures and write down what they hear on a chalkboard. When the lecture's write speed is too rapid, students find it extremely challenging to concentrate in class and are susceptible to transcribing errors. Hence, this work proposes a sophisticated support system for lecture films.

Fernandopulle et.al [6] This article's goal is to look into how to make the suggested platform better by developing a module to handle automatic file uploading by classifying and directing to the proper folder and an automated question generation system to boost student performance.

Aparesh Sood et.al [7] introduced an effective method for completing tasks seek to conserve bandwidth. Reducing the language barrier and finding time for online learning videos are the objectives. The article offers a cutting-edge client-server multimedia distribution package for e-learning. Several modules might be used to describe how the software tool works. The technology initially combines the video file's keyword-enhanced subtitle stream with it on the server. The method splits the video file into many streams on the client side. In order to mimic regional language captioned video, the synchronized text feed is then converted into an uncompressed video stream and placed onto the original video.

Toru Nakura et.al [8] In this work, ten times a week, they used Ustream to provide a lecture in raw form. Students asked questions via Twitter once the text and slides were released in advance to our website. More than 500 students registered for the lecture after it was announced via our email list, and more than 150 of them attended it live. Up to 800 additional people are signing up, and more than 2000 people have watched the first lecture. A very big quantity of diverse, in-depth knowledge is required to create LSI that actually works and to be able to accurately measure it. This essay outlines our streaming lecture

delivery method and the reactions of the students.

Paul E. Dickson et.al [9] They offer a revolutionary portable lecture capture system that, unlike the majority of contemporary lecture capture systems, also records content from whiteboards in addition to computer content and video. The white-board material is captured in excellent quality without the requirement for the electronic whiteboards that many capture systems demand, and it is then processed for clarity. Also, the entire lecture is processed in real time by our presenting system. The technology we demonstrate is a logical advancement in lecture capture.

Oenardi Lawanto et.al [10] This ongoing project uses a design-based research methodology to provide fresh educational materials and methods that non-electrical engineering majors can use in a course on electric circuits. These resources and methods are intended to take the place of conventional note-taking techniques or the typical guided notes used in the majority of engineering courses and encourage students to actively participate in worthwhile learning activities. Two new elements that aren't part of the conventional guided notes are included in the enhanced guided notes (EGN) created by this study. The EGN will first contain inquiries that encourage students to gauge their metacognitive proficiency. Second, the addition of extracurricular activities will improve the EGN even more.

2.2 OPEN PROBLEMS IN EXISTING SYSTEM

In the world of education, the internet has played a pivotal role in providing a platform for students to access notes and study material. There are some popular notes uploading websites that cater to the needs of college students. However, these models have certain cons that should be kept in mind.

For instance, some of them restrict access to notes after payment, which offers no benefit for students who are already struggling financially. Moreover, they do not accept hand-written notes and require users to upload notes regularly, which can be time-consuming and

tedious. Also, some models only allow upload for a particular stream, which means students from other streams are left with no option. Despite these cons, these models are still beneficial for students as they provide a platform to upload and access notes online. The existing system/ web applucations does not student performance analysis feature which is a major drawback.

To overcome the limitations of these models, it is essential to choose the right platform that aligns with your requirements and preferences.The models we use are designed to serve the needs of both teachers and students. One of the most significant benefits of our model is that it allows for easy notes uploading and downloading. Teachers can share their class notes, handouts, and study materials with their students effortlessly.

Similarly, students from different streams can upload their notes and share them with others who may require them. This feature of our model has proven to be particularly useful for students who are looking for specific notes related to a particular stream or subject. The process of upload and download is simple, and the notes can be accessed for free based on the download option set by the uploader. Overall, our model is an innovative solution that enables seamless note-sharing between teachers and students, making learning more accessible and convenient for everyone involved.

The process of notes downloading has become quite popular in recent times. This platform offer users the option to upload their notes, which can be downloaded by others either for free or through a payment system. The user can choose to make a payment and access paid notes, or they can opt for free downloads. However, the uploader has complete control over this option and decides whether they want to charge for their work or not.

Moreover, the option of setting the notes as paid ensures that the uploader is compensated for their efforts. This feature is especially helpful for students who put in hours of hard work in creating comprehensive study material. In conclusion, note-sharing platforms provide a win-win situation for both uploaders and downloaders, making it a valuable resource for all.

CHAPTER 3

3.1 ANALYSIS OF THE PROJECT

Features -

- Sign up/ Registration
- Registered User
- Home page/ dashboard
- Department
- Year
- Upload
- Download
- Free Download
- Payment
- Student Performance Analysis
- Logout

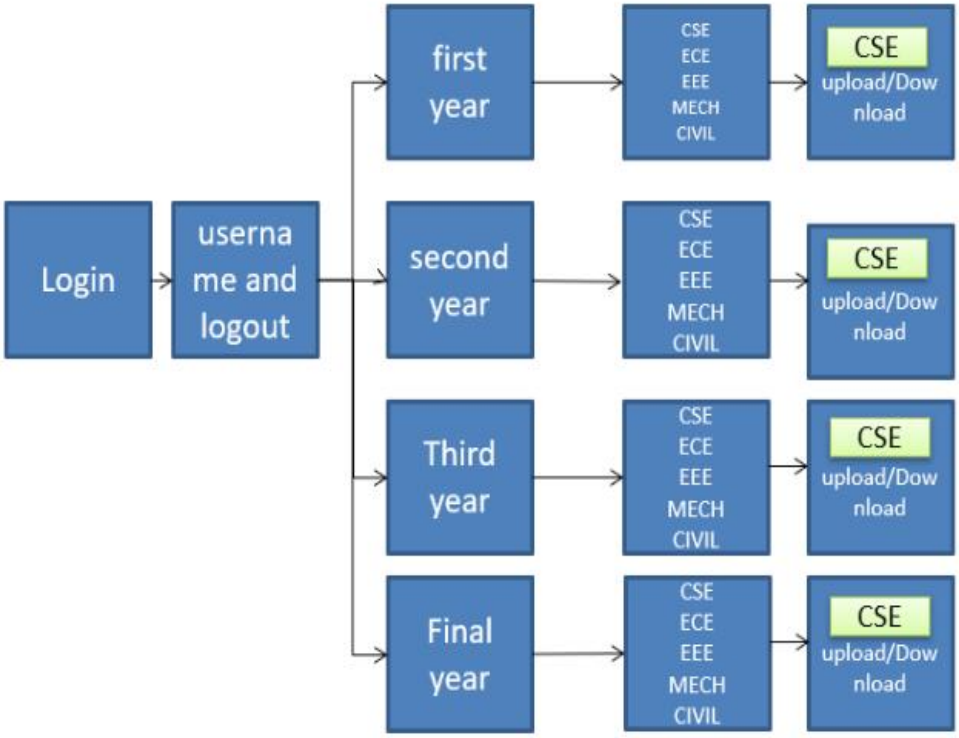

Fig 3.1 Analysis of the Project

The application as a single-page application is developed using React.

Since that this website is dynamic, a server should be able to handle user requests. The Server will be programmed and scripted using Node js.

The information of the registered Users must be maintained on a database for application, management, and security purposes since Our Web Portal will be an interaction of User Profiles. For our project, the database utilized to store the data is firebase.

Student Performance Analysis is done in jupyter notebook using python language. The algorithm used for prediction is Random Forest Regressor. The model is then deployed using Flask.

The bandwidth requirement for internet access is 480kb per session approximately.

3.2 SOFTWARE REQUIREMENT SPECIFICATION

For this project we have used various latest software which will be evaluated in this chapter with every detail of why it is used.

We'll divide this section of explanation of technology based on modules/features in project.

Text Editor – Visual Studio Code:

Visual Studio Code, developed by Microsoft with the Electron Framework, is an exceptional source-code editor that has quickly become a popular choice for developers. It offers a wealth of features that make coding easier, including intelligent code completion, syntax highlighting, and debugging capabilities. Whether you are working on Windows, Linux, or macOS, Visual Studio Code provides excellent support to help streamline your workflow. Moreover, the embedded Git feature allows you to manage your code changes seamlessly. With its sleek design and easy-to-use interface, this source-code editor has become a go-to tool for many developers.

Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality. Instead of a project system, it allows users to open one or more directories, which can then be saved in workspaces for future reuse. This allows it to operate as a language-agnostic code editor for any language.

It supports many programming languages and a set of features that differs per language. Unwanted files and folders can be excluded from the project tree via the settings. Many Visual Studio Code features are not exposed through menus or the user interface but can be accessed via the command palette.

React JS:

React (also known as React.js or ReactJS) is a free and open-source front-end JavaScript library for building user interfaces based on UI components. It is maintained by Meta and a community of individual developers and companies. React can be used as a base in the development of single-page, mobile, or server-rendered applications with frameworks like Next.js. However, ReactJS is only concerned with state management and rendering that state to the DOM, so creating React applications usually requires the use of additional libraries for routing, as well as certain client-side functionality.

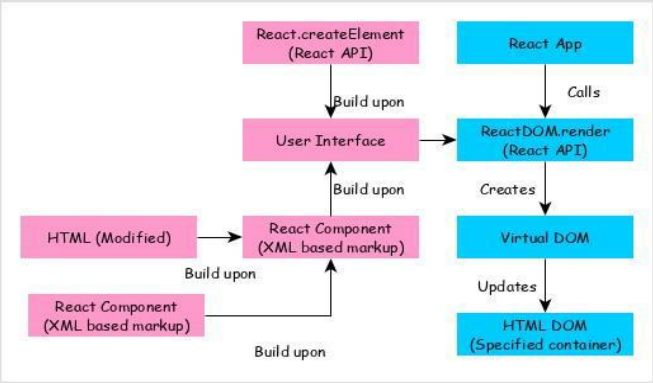

Fig 3.2 ReactJS Architecture

Node Js

Node.js (Node) is an open-source development platform for executing JavaScript code server-side. Node is useful for developing applications that require a persistent connection from the browser to the server and is often used for real-time applications such as chat, news feeds and web push notifications.

Node.js is intended to run on a dedicated HTTP server and to employ a single thread with one process at a time. Node.js applications are event-based and run asynchronously. Code built on the Node platform does not follow the traditional model of receive, process, send, wait, receive. Instead, Node processes incoming requests in a constant event stack and sends small requests one after the other without waiting for responses.

Firebase:

Firebase is a backend platform for building web and mobile applications. Firebase is fundamentally a collection of tools developers can rely on, creating applications and expanding them based on demand.

Firebase aims to solve three main problems for developers:

1.Build an app, fast

2.Release and monitor an app with confidence

3.Engage users,

Developers relying on this platform get access to services that they would have to develop themselves, and it enables them to lay focus on delivering robust application experiences.

Some of the Google Firebase platform's standout features include databases, authentication, push messages, analytics, file storage, and much more.

Since the services are cloud-hosted, developers can smoothly perform on-demand scaling without any hassle. Firebase is currently among the top app development platforms relied

upon by developers across the globe.

Jupyter Notebook:

The Jupyter Notebook App is a server-client application that allows editing and running notebook documents via a web browser. The Jupyter Notebook App can be executed on a local desktop requiring no internet access or can be installed on a remote server and accessed through the internet.

In addition to displaying/editing/running notebook documents, the Jupyter Notebook App has a “Dashboard” (Notebook Dashboard), a “control panel” showing local files and allowing to open notebook documents or shutting down their kernels.

Flask:

Flask is a web framework, it’s a Python module that lets you develop web applications easily. It’s having a small and easy-to-extend core: it’s a microframework that doesn’t include an ORM (Object Relational Manager) or such features.

It does have many cool features like URL routing, template engine. It is a WSGI web app framework.

Language Used:

We have used **Python language** as it is very new and also comes with so many features like we can do Machine Learning, Computer Vision and Also make GUI application with ease.

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code. Python is a programming language that lets you work quickly and integrate systems more efficiently.

Hardware Requirements:

- Any Type of Processor (Preferably, Intel core i5 or i7 processor with a frequency of 3GHz or more)
- 3 GB or above Ram

- Hard Disk 50GB
- Internet Connection

CHAPTER 4

4.1 PROPOSED METHODOLOGY

The proposed system includes Sign up/ Registration, Registered User, Home page/ dashboard, Upload/ Download, payment, Student Performance Analysis.

Sign Up/ Registration:

If the person who is unregistered wants to register can easily register for accessing all the features by providing some of their basic details.

Inputs: Click on “Sign Up/Registration” and provide the basic details that are required

i) Username

ii) Mail

iii) Password

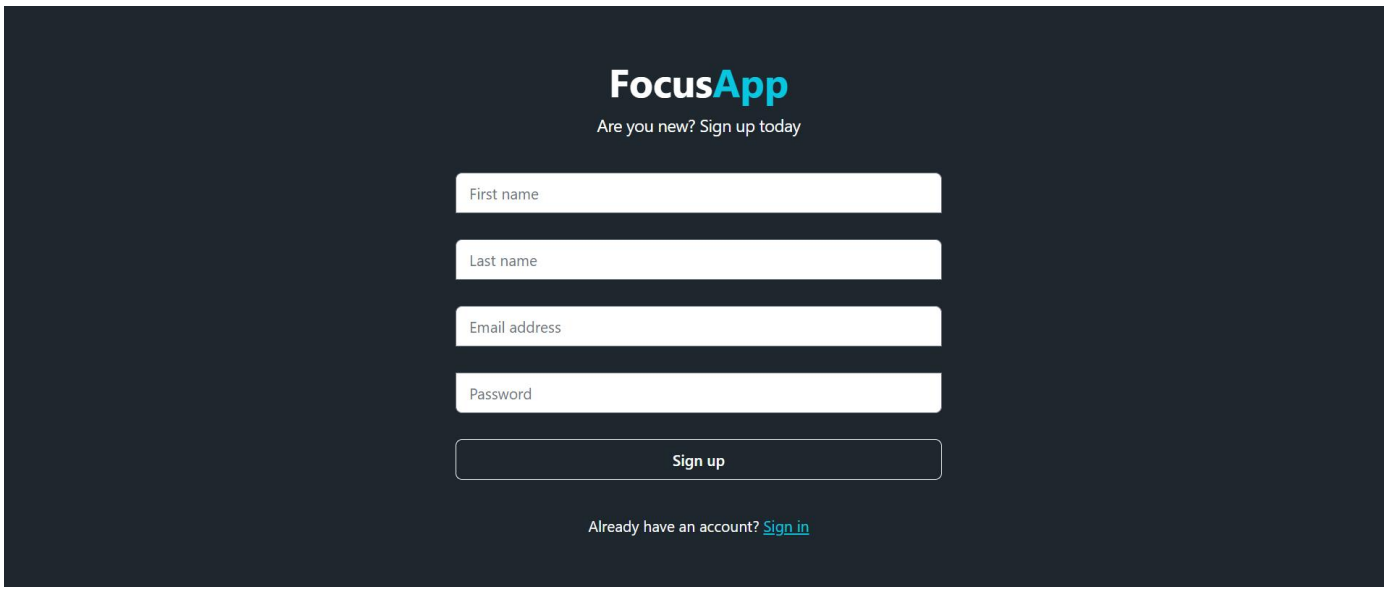

Fig 4.1 Sign Up/ Registration

Registered User:

When a person is registered user. When he wants to access the site. He has to login by providing his username and password.

Inputs:

(i) Username

(ii) Password

Outputs:

(i) Successful Logged in (Open home page)

(ii) Invalid User ID & Password (Return same page) Then it will show register link below the login button.

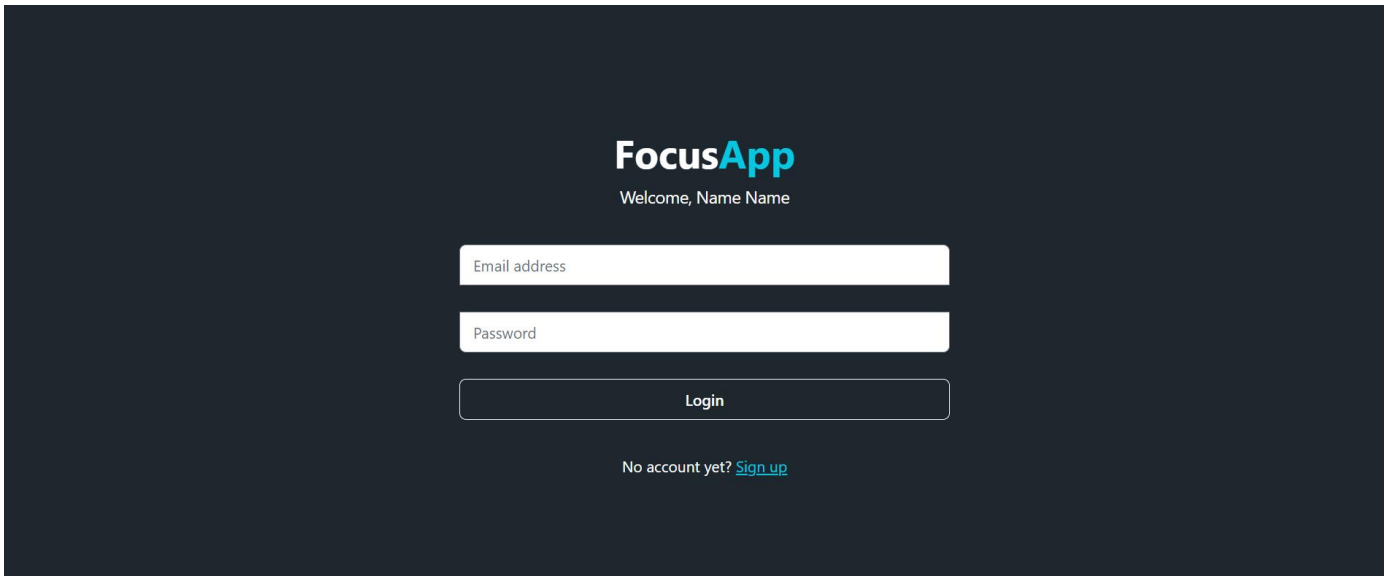

Fig 4.2 Registered User

Homepage:

Home page contains “username” and “logout”. It also contains years and department to choose.

Years:

User should select their year which contains first year, second year, Third year and Final year.

Inputs: Click on “first year” it will show Departments and you can select any department.

Output: open upload or download page.

Departments:

It will display 5 departments which are CSE, ECE, EEE, Mechanical and Civil.

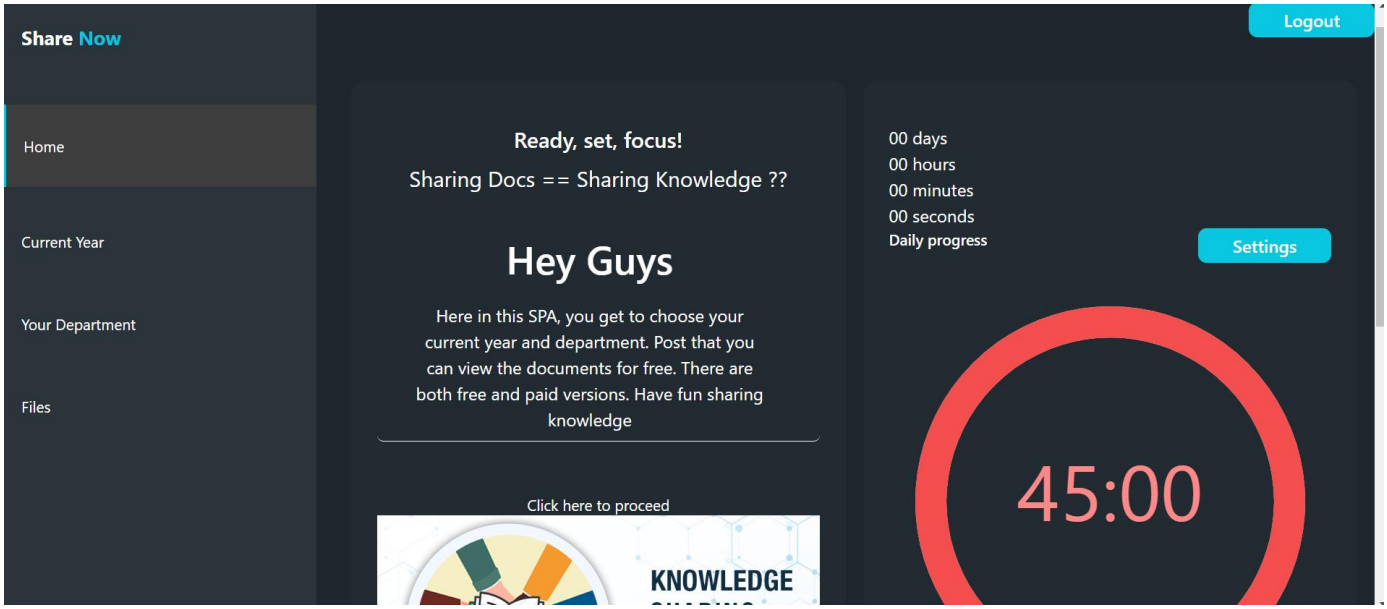

Fig 4.3 Home Page

Upload/Download:

Users can upload or download notes from the application. A registered student can upload notes for free or by setting up a price. Once the selling price is set, the notes are locked. A registered user or can download the notes for free if not locked, otherwise, the user has to pay the uploader to get access to the notes.

Students can share their materials (both written notes and documents in PPT, PDF, DOC, etc. format).

The maximum size of memory that is allocated for uploading the material is 2GB.

Fig 4.4 Free Download

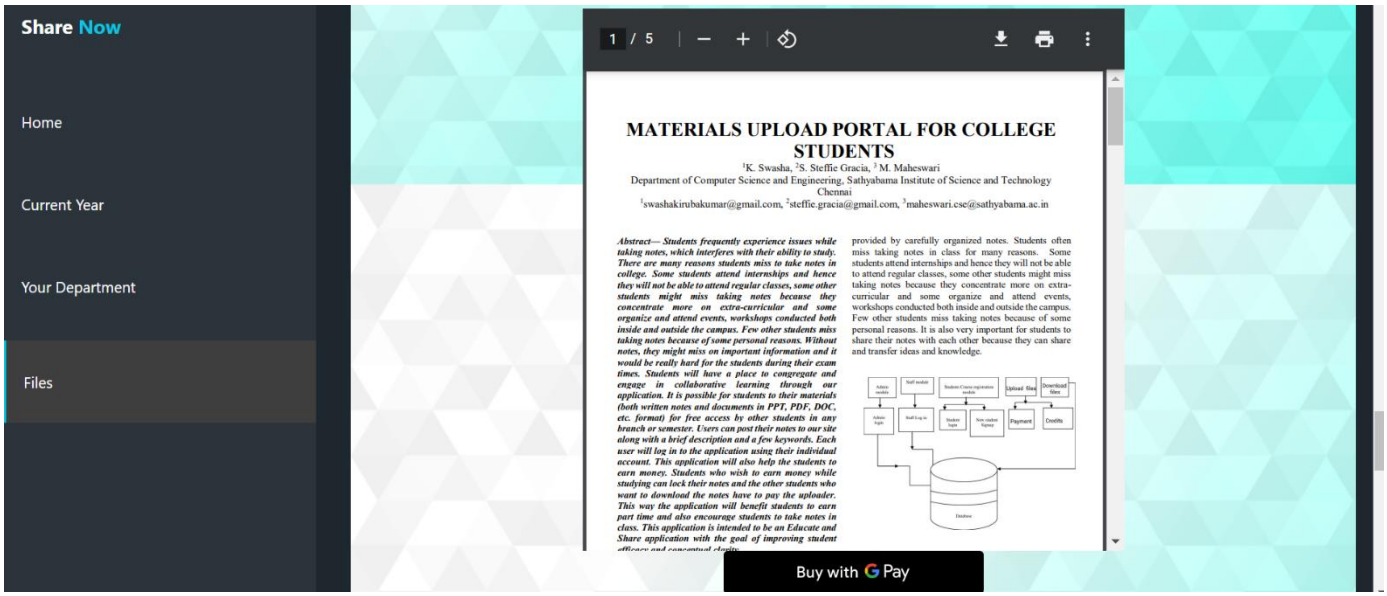

Fig 4.5 Paid Download

Student Performance Analysis:

A. Collecting Dataset:

For analyzing the student performance, a dataset named “Student Performance in Exams” is collected from Kaggle. The dataset consists of 8 columns and 1000 rows. Necessary libraries are imported are the dataset is read into jupyter notebook.

B. Feature Engineering:

The next step is to do feature engineering like checking for null values.
Data visualization is done to under the data better. Visualizations like how many of the students take preparatory classes, student performance in subjects based on gender are done.

C. Data Pre-processing

The next step is Data Pre-processing. This is done by converting all the categorical data to numerical data like in gender male is converted to 1 and female to 0.

D. Training and Testing Data:

For training, the model We pass the larger portion of the dataset that the model is supposed to learn from.
After the model has done understanding from the training set, we must assess its effectiveness. We only use a small fraction of the previously reserved data for this. The test set refers to this fresh data.

E. Data Modelling and Evaluation

The model is created using Random Forest Regressor because it gives the maximum accuracy. During evaluation, we will get predictions from the test data. These models generated predictions will be evaluated. The model is the deployed using flask. Once the model is deployed, students have to input details to get their average score.

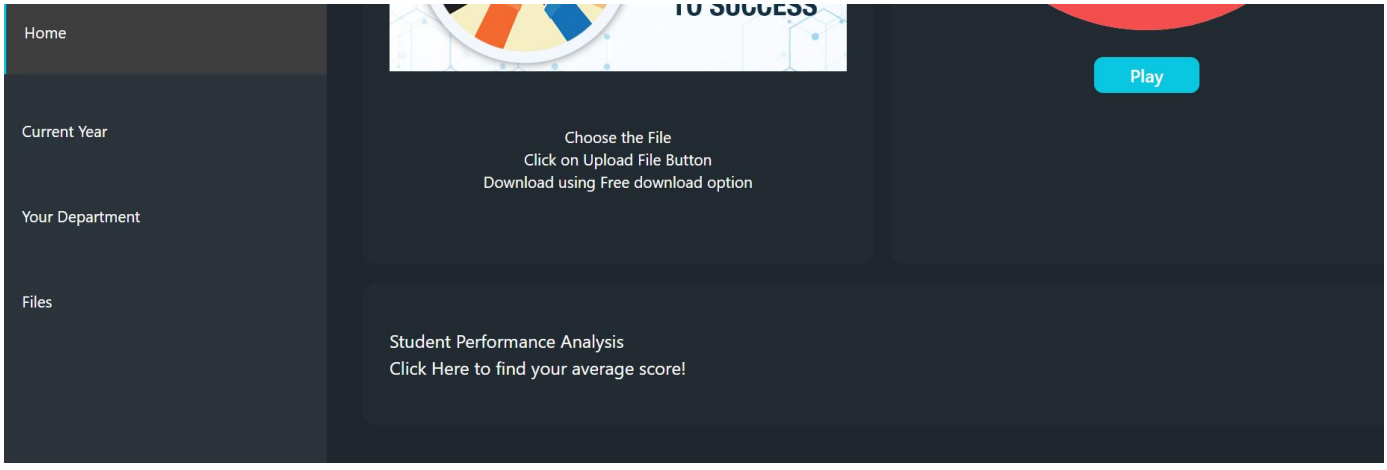

Fig 4.6 Link to Performance Analysis

Performance Analysis:

Although there are many different regression algorithms like Liner Regression, Logistic Regression, Support vector Machine our research suggests that Random Forest regressor is the most accurate prediction technique. We were able to get a 99.7% accuracy utilizing the Random Forest Regressor.

Fig 4.7 Student Performance Analysis

4.2 SYSTEM ARCHITECTURE

The proposed system includes Sign up/ Registration, Registered User, Home page/ dashboard, Upload/ Download, payment, Student Performance Analysis.
The application as a single-page application is developed using React.
Since that this website is dynamic, a server should be able to handle user requests. The Server will be programmed and scripted using Node js.

The information of the registered Users must be maintained on a database for application, management, and security purposes since Our Web Portal will be an interaction of User Profiles. For our project, the database utilized to store the data is firebase.
Student Performance Analysis is done in jupyter notebook using python language. The algorithm used for prediction is Random Forest Regressor. The model is then deployed using Flask.

The bandwidth requirement for internet access is 480kb per session approximately.

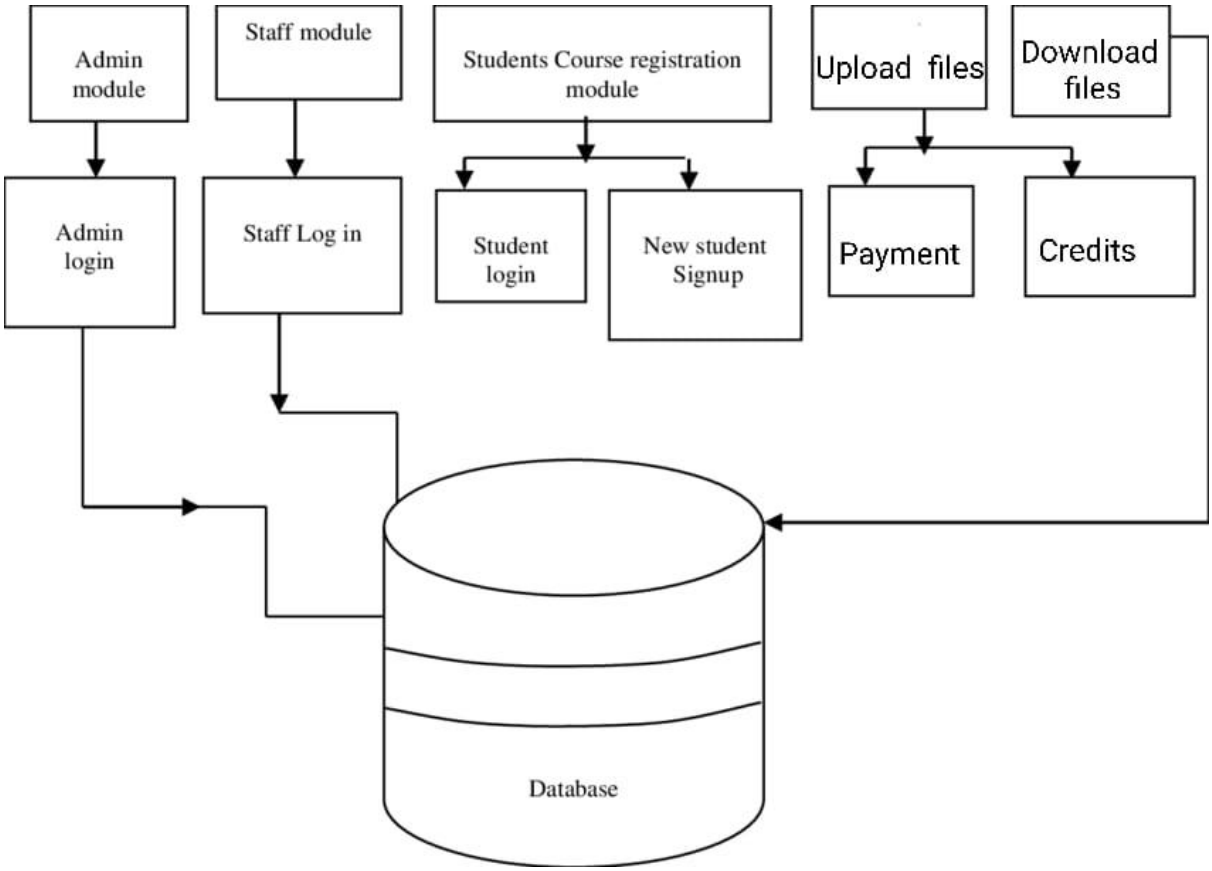

Fig 4.8 System Architecture

The other important feature of this application is Student Performance Analysis. To predict the student performance Random Forest Regressor algorithm is used. Dataset has been collected from Kaggle. Once the dataset is collected, necessary libraries are imported and feature engineering like checking for null values, Data visualization is done. After that data pre-processing is done. Here categorical data are converted into numerical data. The final step is data modelling. The dataset is split into 75% training data and 25% testing data and the model is created using Random Forest Regressor which gives an accuracy of 99.72%. The model is the deployed using flask. Students have to enter relevant details to get their average score. This will allow students to understand where they stand and will motivate students to prepare more and perform better in exams.

CHAPTER 5

5.1 DEVELOPMENT AND DEPLOYMENT SETUP

DEVELOPMENT

The Client-side deals with the actual Web Pages which will be accessible to the User on his/her machine. The Web Pages needs to be dynamic and responsive. For this Purpose, we would be implementing HTML & CSS along with java script. The pages will be coded in HTML, the CSS will give design and structure to the page and java script will enhance the dynamic functionality of the page. ReactJS Library is used to develop the application as a single-page application.

The Server end deals with Server hosting the web pages. Since, this is a Dynamic Website a Server should be capable of handling User requests. Node js will be used to script and code the Server. Node. js is widely used for the back-end of applications, like using Express. js to build the back-end of classic web applications. Also, it is used for server-side programming and non-blocking, event-driven servers like typical websites and backend API services. Node.js servers are set up quickly, and a simple API can be up and running in under a minute.

And is ideal for developers constructing microservice environments since they link multiple APIs together due to how simple it is to create an API in Node.

Also, with NodeJS, prototyping solutions and architectures allow quick and easy experimentation.

Since, Our Web Portal will be an interaction of User Profiles, the data of the registered Users have to be stored on a database for Application, Management and Security Purposes. Firebase is used for our project to store the data in the database. Firebase is built on a scale-out architecture that has become popular with developers of all kinds for developing scalable applications with evolving data schemas. As a document database, Firebase makes it easy for developers to store structured or unstructured data.

DEPLOYMENT:

Machine learning is a process that is widely used for prediction. N number of algorithms are available in various libraries which can be used for prediction. Building/Training a model using various algorithms on a large dataset is one part of the data. But using these models within the different applications is the second part of deploying machine learning in the real world.

To put it to use in order to predict the new data, we have to deploy it over the internet so that the outside world can use it. In this application, we have trained a machine learning model and created a web application on it using Flask.

Flask is a web application framework written in Python. It has multiple modules that make it easier for a web developer to write applications without having to worry about the details like protocol management, thread management, etc.

Flask gives is a variety of choices for developing web applications and it gives us the necessary tools and libraries that allow us to build a web application.

Once the model is deployed using flask it is hosted in render. Once it is hosted in render, the link generated by render is then integrated in our application for student performance analysis. Students can find their average score by just entering few input and get accurate average score.

5.2 ALGORITHM

The algorithm that is used in our project to train the model is Random Forest Regressor.

Random Forest Regression is a supervised learning algorithm that uses ensemble learning method for regression. Ensemble learning method is a technique that combines predictions from multiple machine learning algorithms to make a more accurate prediction than a single model.

A Random Forest operates by constructing several decision trees during training time and outputting the mean of the classes as the prediction of all the trees. To get a better understanding of the Random Forest algorithm, let’s walk through the steps:

1.Pick at random k data points from the training set.

2.Build a decision tree associated to these k data points.

3.Choose the number N of trees you want to build and repeat steps 1 and 2.

For a new data point, make each one of your N-tree trees predict the value of y for the data point in question and assign the new data point to the average across all of the predicted y values.

A Random Forest Regression model is powerful and accurate. It usually performs great on many problems, including features with non-linear relationships. Disadvantages, however, include the following: there is no interpretability, overfitting may easily occur, we must choose the number of trees to include in the model.

From the sklearn package containing ensemble learning, we import the class RandomForestRegressor, create an instance of it, and assign it to a variable. The. fit () function allows us to train the model, adjusting weights according to the data values in order to achieve better accuracy. After training, our model is ready to make predictions, which is called by the. predict () method.

R^2 score tells us how well our model is fitted to the data by comparing it to the average line of the dependent variable. If the score is closer to 1, then it indicates that our model performs well versus if the score is farther from 1, then it indicates that our model does not perform so well.

We achieved an accuracy score of approximately 99.72%.

CHAPTER 6

6.1 RESULTS AND DISCUSSION

When it comes to finding websites to upload notes for college students, there are many options available. However, it is important to note that these platforms come with certain cons that may not be suitable for everyone. One common issue is the requirement of payment before accessing the notes. This can be a drawback for students who are already struggling with finances. Additionally, some websites do not accept hand-written notes, which can be frustrating for those who prefer this method of note-taking. It is also often mandatory to upload notes regularly, which can be time-consuming and inconvenient for busy students.

Moreover, some websites only allow upload of notes for a particular stream or subject, limiting the scope and variety of notes available. Despite these limitations, these websites do provide a convenient platform to share and access study materials.

Therefore, it is vital to choose the right website that suits your specific needs and requirements. Whether you are looking for a platform that accepts hand-written notes or one that allows uploads for all subjects, there are many options available in the market.

In addition to providing a platform for online learning, the website also enables students from different streams to share their notes with one another. This feature proves to be highly beneficial for learners who need to refer to subject material beyond their own course of study. The uploader can set the download option depending on their preference, thus allowing others to access the notes for free. The availability of notes from diverse streams helps students gain a better understanding of concepts and enhances their overall knowledge base.

In addition to sharing notes, this application also serves Student performance Analysis where the average score of the student is predicted using Random Forest Regressor with an accuracy of 99.72%.

CHAPTER 7

7.1 CONCLUSION

Taking notes can be a big challenge for students with learning and thinking differences. This application can help students with this note taking difficulty by sharing their notes with fellow classmates. This application also serves as a platform for students to earn money part-time just by uploading their notes by setting a selling price of their choice. This application motivates the students to actively take notes and promotes collaborative learning. Student Performance Analysis is also done to help students predict their average score just by giving few inputs. Thereby this application serves as a very helpful tool for students to learn, share and grow.

Moreover, this sharing of knowledge fosters a collaborative learning environment, leading to improved academic performance. With this convenient tool at their disposal, students can streamline their study process and save time by accessing relevant information in one place. The option to download notes ensures that learners can review the material at their own pace and convenience, making it an ideal resource for exam preparation. In summary, this platform serves as a great aid not only for online learning but also for sharing and obtaining notes across different streams.

6.2 Future Scopes

The future work of this application is to enable student credit other student for their work by including credit system (like feature) which will motivate the students to do a better job. Students get extra credit and ranking based on the number of downloads. The more the notes of a particular person get downloaded the more the person earns credit points. The popularity of the notes is decided by the credit points. The credit points are earned by the uploader when their notes get downloaded. The more popular the notes are, the higher the credit points they earn. This system not only motivates uploaders to create quality content but also allows users to access valuable information while rewarding the creators. This is absolutely motivating the students to take notes and sell them online.

In addition to the credit system, the student performance analysis predicted using random forest regressor has an accuracy of 99.72%. Though the accuracy is very good and close to 1, the future scope is to increase the accuracy to 100%.

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Sample Code

Home.jsx

```
import React, { useState, useEffect, useRef } from 'react';
import Card from '../components/elements/Card';
import Text from '../components/elements/Text';
import Button from '../components/elements/Button';
import Time from '../components/widgets/Time';
import Settings from '../components/widgets/Settings';
import { onAuthStateChanged } from "firebase/auth";
import { auth } from '../firebase';
import {NavLink} from 'react-router-dom';

const Home = () => {
    const [ openTaskInput, setOpenTaskInput ] = useState(false);
    const [open, setOpen] = useState(false);
    const [workMin, setWorkMin] = useState(45);
    const [breakMin, setBreakMin] = useState(15);
    const inputRef = useRef(null);
    const [remainingTime, setRemainingTime] = useState({
        seconds: '00',
        minutes: '00',
        hours: '00',
        days: '00'
    })

    const handleTaskButton = () => {
        setOpenTaskInput(true);
        inputRef.current.focus();
    }
```

```
const handleSettings = () => {
        setOpen(true);
    }

    useEffect(()=>{
        onAuthStateChanged(auth, (user) => {
            if (user) {
              // User is signed in, see docs for a list of available properties
              // https://firebase.google.com/docs/reference/js/firebase.User
              const uid = user.uid;
              // ...
              console.log("uid", uid)
            } else {
              // User is signed out
              // ...
              console.log("user is logged out")
            }
          });

        const intervalID = setInterval(()=>{
            // console.log("yes")
        }, 1000)

        return () => clearInterval(intervalID);
    }, [])

  return (
    <section className="text-white pt-10 pb-20">

        <section className="grid grid-cols-2 gap-4">
            <Card className="text-center pb-16">
```

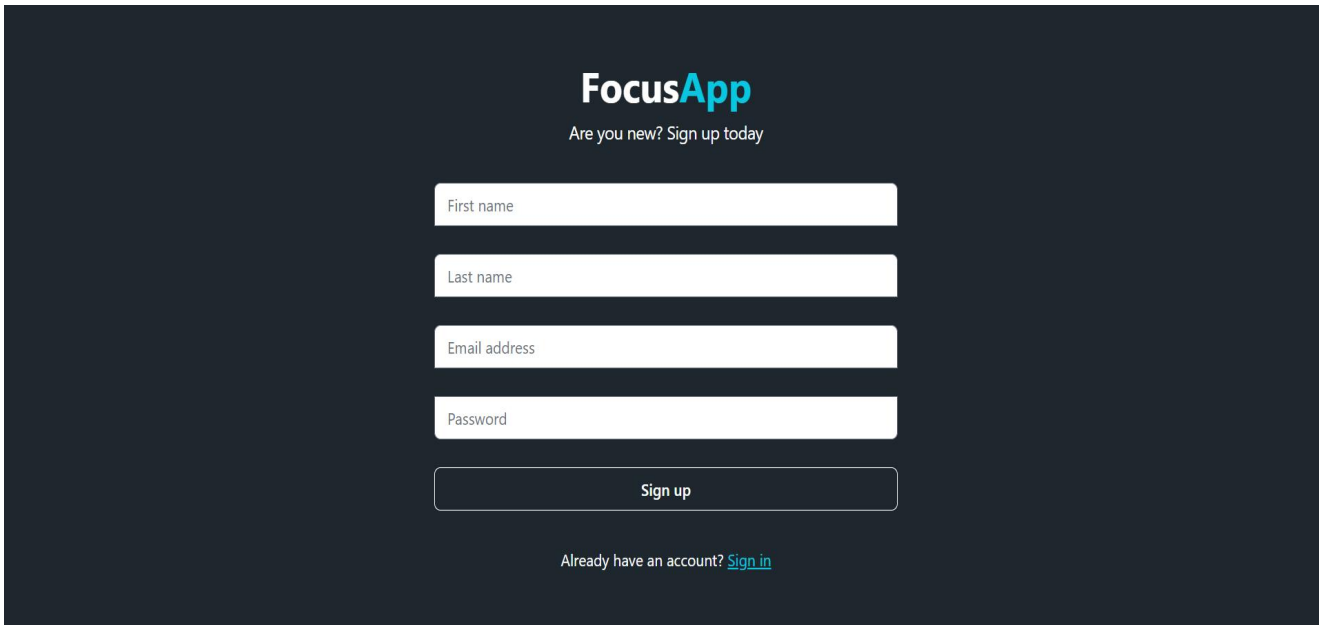
```
      <Text className="font-semibold text-xl">
          Ready, set, focus!
        </Text>

        <Text className="text-xl pt-2">
          Sharing Docs ==
          Sharing Knowledge 📚
        </Text>

        <div className="flex justify-center items-center mt-8">
          <div className="py-2 px-4 rounded-md border-b border-x-0 border-x-white
border-t-0 border-t-white border-white ">
            <div className='px-4 flex space-x-4 rounded-md'>
              <div className='flex flex-col'>
                <span className="text-4xl font-semibold">
                  Hey Guys
                </span>
                <span className="text-l pt-5">
                  Here in this SPA, you get to choose your current year and department.
                  Post that you can view the documents for free.
                  There are both free and paid versions.
                  Have fun sharing knowledge
                </span>
              </div>

              <div className='flex flex-col justify-between'>
                <span>

                </span>
                <span>

                </span>
              </div>
```

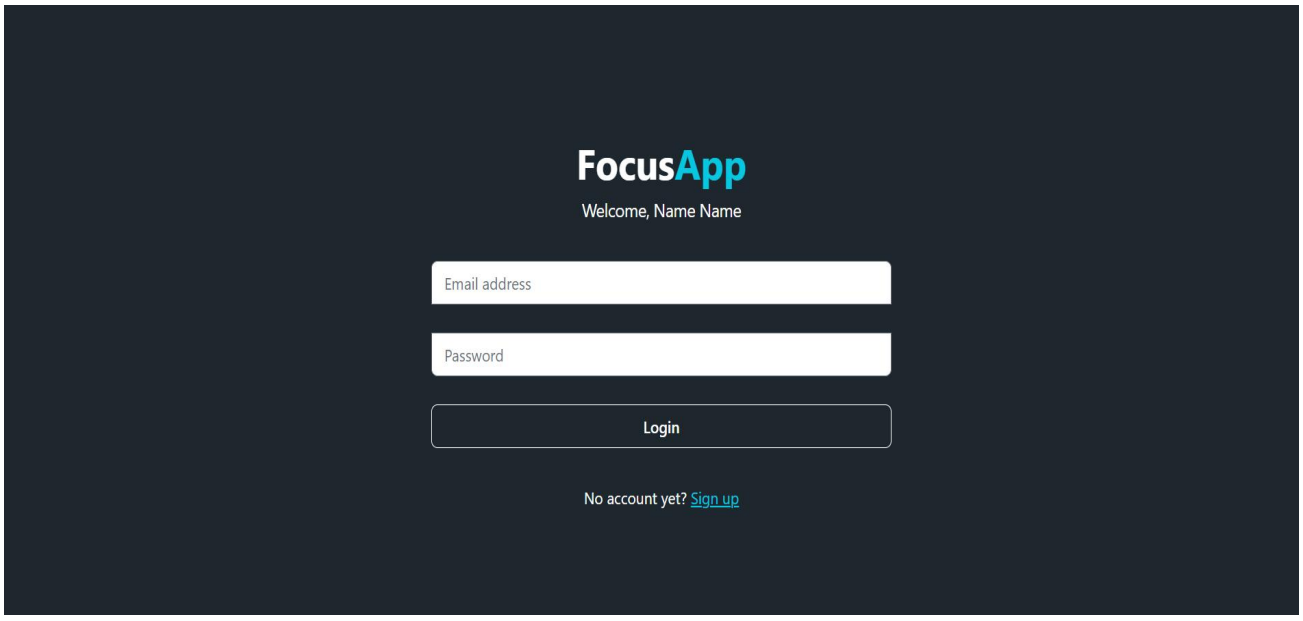
```
          </div>
             </div>
          </div>

<NavLink
             to="/timer"
             className={({isActive}) =>
                isActive? "bg-secondary w-full block border-l-2 border-l-tertiary mr-2 py-3  text-
   sm"
                :
                "mr-2 text-sm py-3 pl-4"
             }
          >
          <Text className="text-sm mt-6">
            Click here to proceed
          </Text>


       <img src="https://www.globsyn.edu.in/wp-content/uploads/2022/03/Knowledge-
   Sharing-as-the-Key-to-Success.png"/>
       </NavLink>


        <Text className="text-sm mt-6">
        <ul>
          <li>Choose the File   </li>
          <li>Click on Upload File Button </li>
          <li>Download using Free download option </li>
          </ul>
          </Text>

       </Card>
```

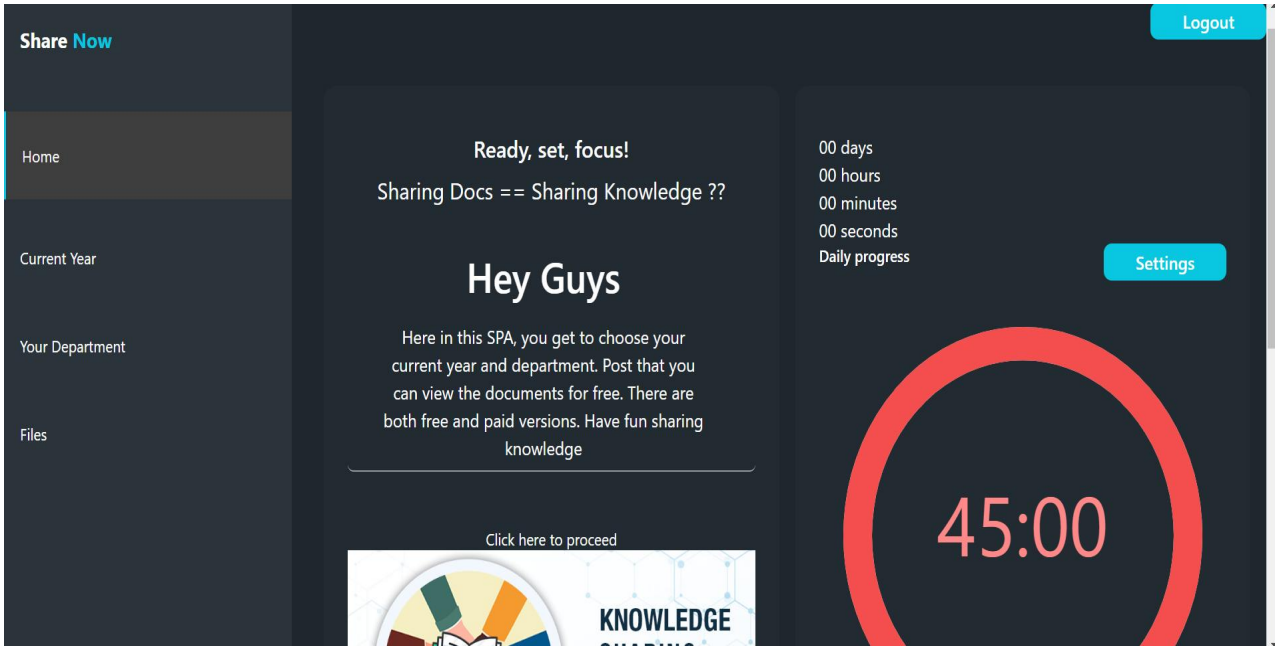
```
<Card className="py-4">
  <div>
    <p>
      {remainingTime.days} days
    </p>
    <p>
      {remainingTime.hours} hours
    </p>
    <p>
      {remainingTime.minutes} minutes
    </p>
    <p>
      {remainingTime.seconds} seconds
    </p>
  </div>

  <div>
    <div className="flex justify-between">
      <Text className="text-sm font-semibold">
        Daily progress
      </Text>

      <Button
        onClick={handleSettings}
        className="py-1 px-6"
      >
        Settings
      </Button>
    </div>

    {open? <Settings
          setOpen={setOpen}
```

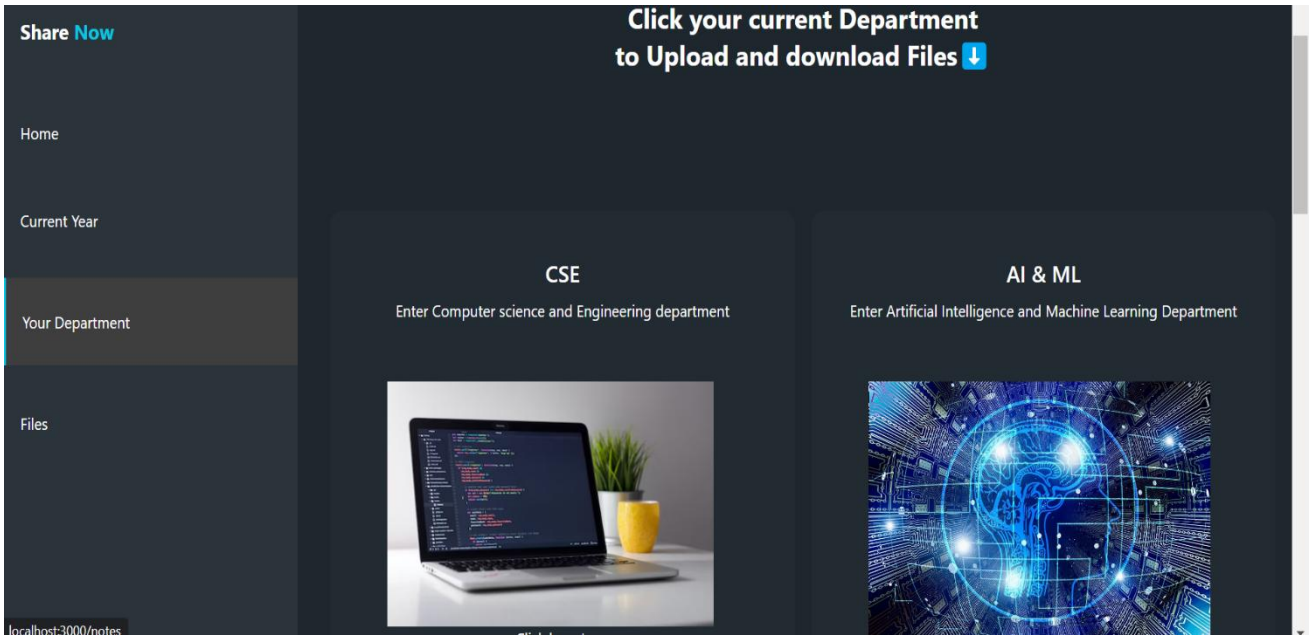
```
                    workMin={workMin}
                    breakMin={breakMin}
                    setWorkMin={setWorkMin}
                    setBreakMin={setBreakMin}
                  />
                  :
                  <Time
                    workMin={workMin}
                    breakMin={breakMin}
                    setWorkMin={setWorkMin}
                    setBreakMin={setBreakMin}
                  />
                }

              </div>
            </Card>

            <Card className="py-4 col-span-2">
              <h1>Student Performance Analysis</h1>
              <a href='https://performanceapp.onrender.com' >Click Here to find your average
        score!</a>

            </Card>
          </section>

      </section>
    )
}
```

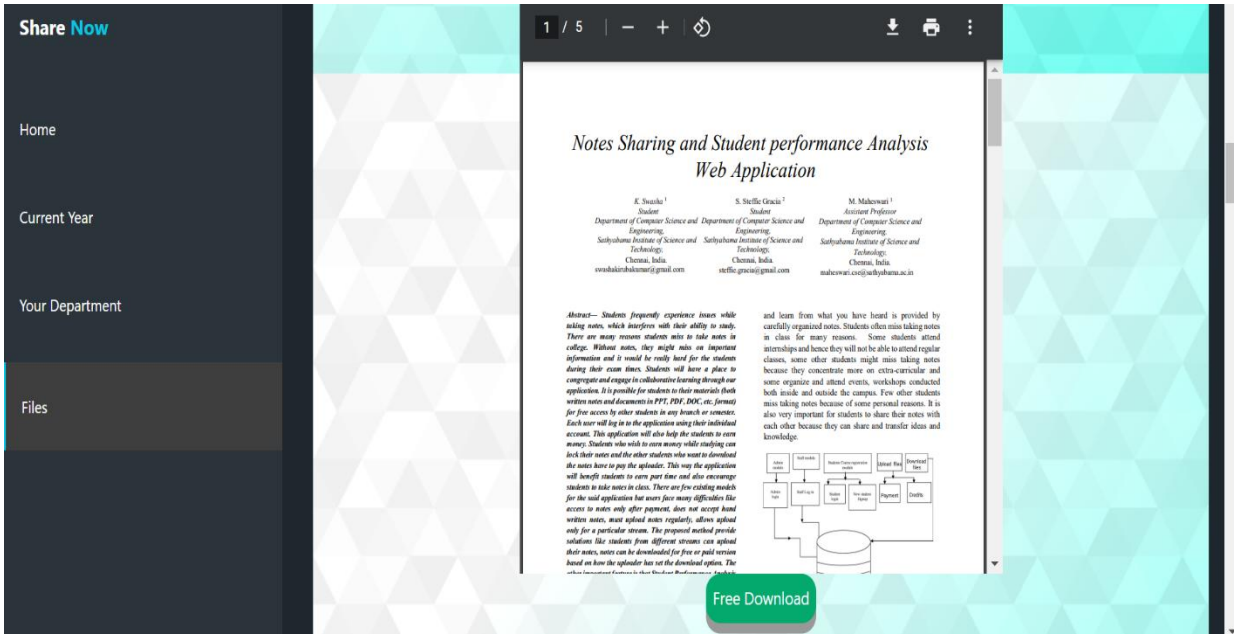
SCREENSHOTS






Share Now
Logout
Home
Current Year
Your Department
Files
Ready, set, focus!
Sharing Docs == Sharing Knowledge ??
Hey Guys
Here in this SPA, you get to choose your current year and department. Post that you can view the documents for free. There are both free and paid versions. Have fun sharing knowledge
Click here to proceed
00 days
00 hours
00 minutes
00 seconds
Daily progress
Settings
45:00
KNOWLEDGE


Share Now
Click your current Department
to Upload and download Files
Home
Current Year
Your Department
Files
CSE
Enter Computer science and Engineering department
AI & ML
Enter Artificial Intelligence and Machine Learning Department
localhost:3000/notes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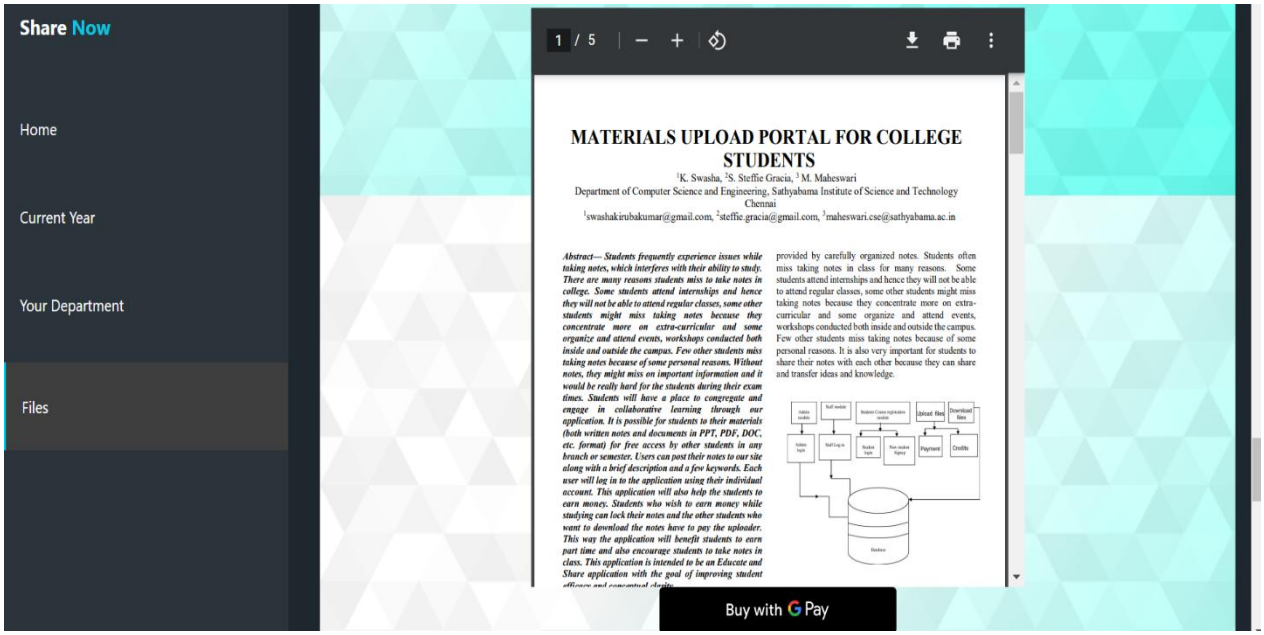
1 / 5
Notes Sharing and Student performance Analysis Web Application
K. Swasha [1] Student Department of Computer Science and Engineering, Sathyabama Institute of Science and Technology, Chennai, India. swashakirubakumar@gmail.com
S. Steffie Gracia [2] Student Department of Computer Science and Engineering, Sathyabama Institute of Science and Technology, Chennai, India. steffie.gracia@gmail.com
M. Maheswari [3] Assistant Professor Department of Computer Science and Engineering, Sathyabama Institute of Science and Technology, Chennai, India. maheswari.cse@sathyabama.ac.in
Abstract— Students frequently experience issues while taking notes, which interferes with their ability to study. There are many reasons students miss to take notes in college. Without notes, they might miss on important information and it would be really hard for the students during their exam times. Students will have a place to congregate and engage in collaborative learning through our application. It is possible for students to their materials (both written notes and documents in PPT, PDF, DOC, etc. format) for free access by other students in any branch or semester. Each user will log in to the application using their individual account. This application will also help the students to earn money. Students who wish to earn money while studying can lock their notes and the other students who want to download the notes have to pay the uploader. This way the application will benefit students to earn part time and also encourage students to take notes in class. There are few existing models for the said application but users face many difficulties like access to notes only after payment, does not accept hand written notes, must upload notes regularly, allows upload only for a particular stream. The proposed method provide solutions like students from different streams can upload their notes, notes can be downloaded for free or paid version based on how the uploader has set the download option. The
and learn from what you have heard is provided by carefully organized notes. Students often miss taking notes in class for many reasons. Some students attend internships and hence they will not be able to attend regular classes, some other students might miss taking notes because they concentrate more on extra-curricular and some organize and attend events, workshops conducted both inside and outside the campus. Few other students miss taking notes because of some personal reasons. It is also very important for students to share their notes with each other because they can share and transfer ideas and knowledge.
Free Download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MATERIALS UPLOAD PORTAL FOR COLLEGE STUDENTS
[1]K. Swasha, [2]S. Steffie Gracia, [3] M. Maheswari
Department of Computer Science and Engineering, Sathyabama Institute of Science and Technology Chennai
[1]swashakirubakumar@gmail.com, [2]steffie.gracia@gmail.com, [3]maheswari.cse@sathyabama.ac.in
Abstract— Students frequently experience issues while taking notes, which interferes with their ability to study. There are many reasons students miss to take notes in college. Some students attend internships and hence they will not be able to attend regular classes, some other students might miss taking notes because they concentrate more on extra-curricular and some organize and attend events, workshops conducted both inside and outside the campus. Few other students miss taking notes because of some personal reasons. Without notes, they might miss on important information and it would be really hard for the students during their exam times. Students will have a place to congregate and engage in collaborative learning through our application. It is possible for students to their materials (both written notes and documents in PPT, PDF, DOC, etc. format) for free access by other students in any branch or semester. Users can post their notes to our site along with a brief description and a few keywords. Each user will log in to the application using their individual account. This application will also help the students to earn money. Students who wish to earn money while studying can lock their notes and the other students who want to download the notes have to pay the uploader. This way the application will benefit students to earn part time and also encourage students to take notes in class. This application is intended to be an Educate and Share application with the goal of improving student
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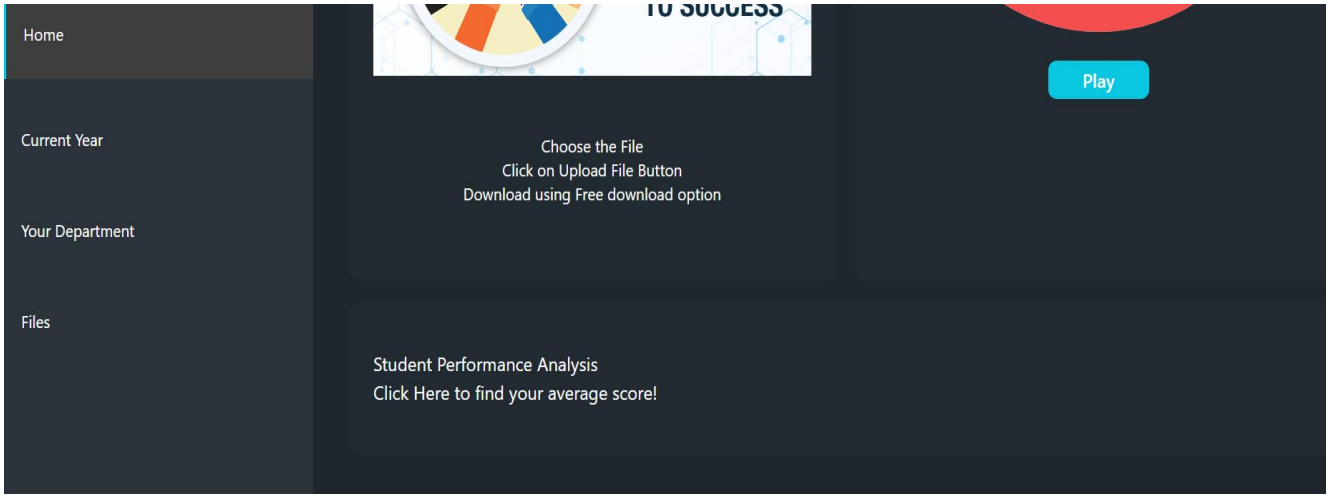
Home
Current Year
Your Department
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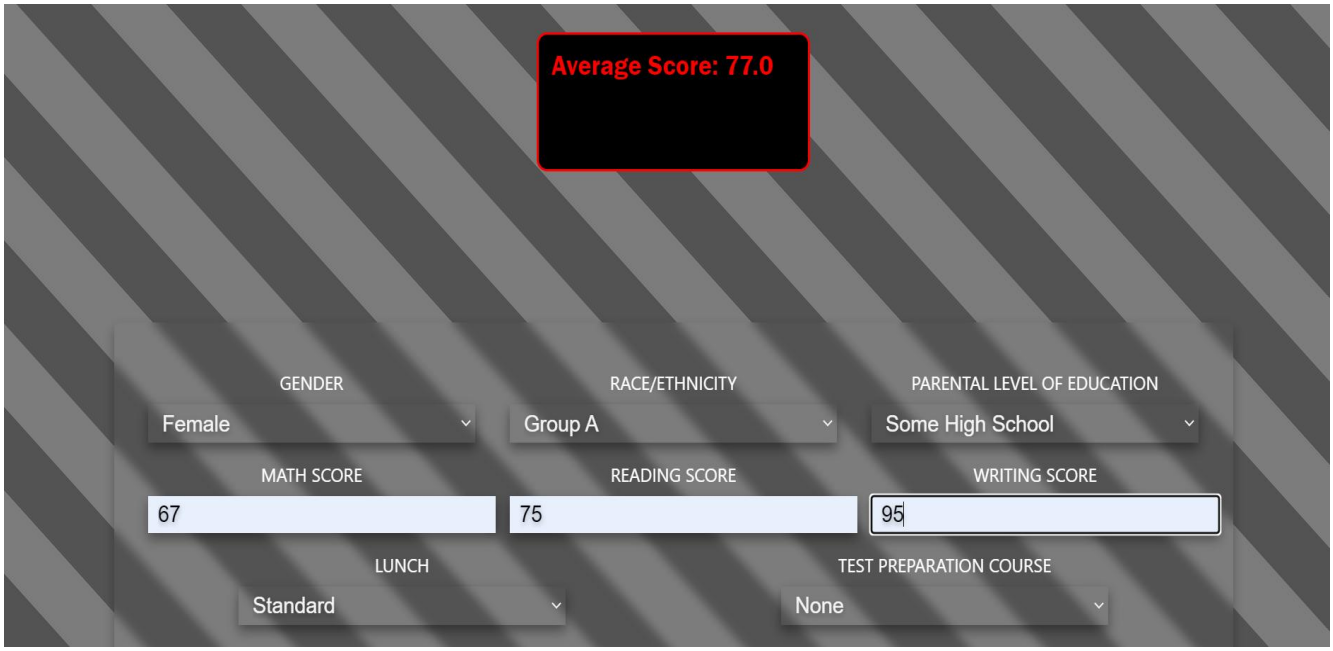
Choose the File
Click on Upload File Button
Download using Free download option
Play
Student Performance Analysis
Click Here to find your average score!


Average Score: 77.0
GENDER
Female
RACE/ETHNICITY
Group A
PARENTAL LEVEL OF EDUCATION
Some High School
MATH SCORE
67
READING SCORE
75
WRITING SCORE
95
LUNCH
Standard
TEST PREPARATION COURSE
None

Notes Sharing and Student performance Analysis Web Application

K. Swasha [1]
Student
Department of Computer Science and Engineering,
Sathyabama Institute of Science and Technology,
Chennai, India.
swashakirubakumar@gmail.com

S. Steffie Gracia [2]
Student
Department of Computer Science and Engineering,
Sathyabama Institute of Science and Technology,
Chennai, India.
steffie.gracia@gmail.com

M. Maheswari [3]
Assistant Professor
Department of Computer Science and Engineering,
Sathyabama Institute of Science and Technology,
Chennai, India.
maheswari.cse@sathyabama.ac.in

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dex Terms — Collaborative learning, earn money while udying, students from different streams, Student erformance Analysis, Random Forest Regressor.

I. INTRODUCTION

vital learning skill for both the classroom and the orkplace is taking notes. An opportunity to understand and learn from what you have heard is provided by carefully organized notes. Students often miss taking notes in class for many reasons. Some students attend internships and hence they will not be able to attend regular classes, some other students might miss taking notes because they concentrate more on extra-curricular and some organize and attend events, workshops conducted both inside and outside the campus. Few other students miss taking notes because of some personal reasons. It is also very important for students to share their notes with each other because they can share and transfer ideas and knowledge.

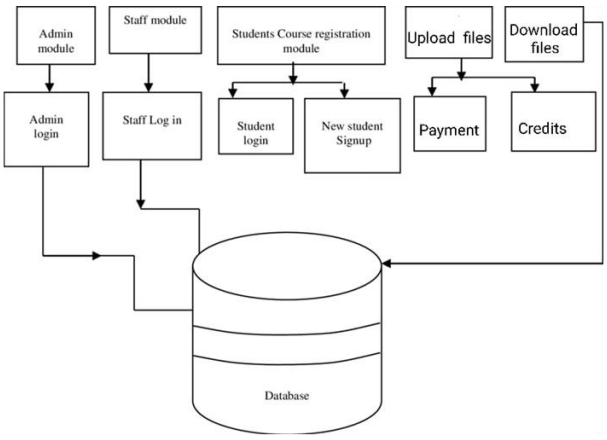

Fig 1. Architecture Diagram

Fig 1 shows that there are three modules for Admin, Staf and students. They can create their own account and login Once they login they can upload or download files based on their requirement.

This application allows students to upload the notes related to subject, branch and semester. Other students will be benefited by downloading the notes and using it to increase the knowledge. This application also allows students to sel

eir notes. Earning while learning and helping can be n and advantageous both at the same time. Students ho wish to earn money while studying can lock their otes and the other students who want to download the otes have to pay the uploader. This way the application ill benefit students to earn part time and also encourage udents to take notes. Students can sign up for free and art uploading the notes for free. Students who wish to rn money can lock their notes and set their own selling ice and promote their documents so that many students n download it. Selling notes is an excellent way to earn me extra money. This is absolutely motivate the udents to take notes and sell them online.

ne other important feature of this application is Student erformance Analysis. To predict the student erformance Random Forest Regressor algorithm is sed. Dataset has been collected from Kaggle. Once the ataset is collected, necessary libraries are imported and ature engineering like checking for null values, Data sualization is done. After that data pre-processing is one. Here categorical data are converted into numerical ata. The final step is data modelling. The dataset is split to 75% training data and 25% testing data and the odel is created using Random Forest Regressor which ves an accuracy of 99.72%. The model is the deployed sing flask. Students have to enter relevant details to get eir average score. This will allow students to nderstand where they stand and will motivate students prepare more and perform better in exams.

II. LITERATURE REIVEW

lejandro Lorenzo-Lledó et.al [1] The COVID-19 isis has had a profound impact on the world at large. niversities have been impacted by the prevailing orldwide pandemic scenario, which has spread to any facets of society. With the use of information and mmunication technologies as a meeting place for aching professionals and students, face-to-face arning scenarios were transformed into online or /brid teaching in this regard. A quantitative strategy as used, with a non-experimental, cross-sectional esign.

astgir Pojee et.al [2] The goal of this initiative is to gitize and reduce the amount of work required for a llege or university to manage all of its documents. sers are made more convenient by the MP-CMF anks to its online paper checking, attendance, and otice board modules. Also, it helps manage and odate student data with the least amount of human bour. This technique eliminates data inconsistency nd decreases data redundancy. A quantitative strategy as used, with a cross-sectional, non-experimental esign. The online paper correction module of MP-MF, where all the descriptive answer booklets are scanned and forwarded to the appropriate academics, is its standout feature.

Gang Cui et.al [3] proposed a novel automatic summarization-based method for extracting courseware information is proposed. This method is then used to automatically construct summaries of the knowledge content of online courses. The approach arranges the summarizing of the e-courseware based on the extracted important information. This is done after analysing the structure of the e-courseware and calculating the similarity between two sentences.

Norul Ashikin Abu Kasim et.al [4] This study outlines the architecture of a virtual learning content managemen system for usage by instructors and students. By evaluating the students' accomplishments, it reports the intended learning objectives and explains the justification for using V-LCMS. The accomplishment is described as a case study that was completed for a course at the undergraduate level. The results of the assessments given to the students who took part in this V-LCMS case study are related to how well they did on the course's learning goals. The paper focuses on making it simple and quick to upload notes and assessments while also streamlining interactions between teachers and students

F. H. Yeh et.al [5] With the use of modern video tools teachers can now record their lectures and transmit them directly to e-learning platforms. Yet, some students might only understand some of the movie, forcing them to waste time downloading the full thing. For this reason scene segmentation in videos is important. Also, in the traditional teaching paradigm, students are required to listen to lectures and write down what they hear on a chalkboard. When the lecture's write speed is too rapid students find it extremely challenging to concentrate in class and are susceptible to transcribing errors. Hence this work proposes a sophisticated support system for lecture films.

Fernandopulle et.al [6] This article's goal is to look into how to make the suggested platform better by developing a module to handle automatic file uploading by classifying and directing to the proper folder and an automated question generation system to boost studen performance.

Aparesh Sood et.al [7] introduced an effective method for completing tasks seek to conserve bandwidth. Reducing the language barrier and finding time for online learning videos are the objectives. The article offers a cutting-edge client-server multimedia distribution package for e-learning. Several modules might be used to describe how the software tool works. The technology initially combines

.e video file's keyword-enhanced subtitle stream with it ı the server. The method splits the video file into many reams on the client side. In order to mimic regional nguage captioned video, the synchronized text feed is .en converted into an uncompressed video stream and .aced onto the original video.

oru Nakura et.al [8] In this work, ten times a week, .ey used Ustream to provide a lecture in raw form. ıdents asked questions via Twitter once the text and ides were released in advance to our website. More than)0 students registered for the lecture after it was ınounced via our email list, and more than 150 of them tended it live. Up to 800 additional people are signing ɔ, and more than 2000 people have watched the first cture. A very big quantity of diverse, in-depth ıowledge is required to create LSI that actually works ıd to be able to accurately measure it. This essay ıtlines our streaming lecture delivery method and the :actions of the students.

aul E. Dickson et.al [9] They offer a revolutionary ɔrtable lecture capture system that, unlike the majority : contemporary lecture capture systems, also records ɔntent from whiteboards in addition to computer ɔntent and video. The white-board material is captured . excellent quality without the requirement for the ectronic whiteboards that many capture systems ɛmand, and it is then processed for clarity. Also, the ıtire lecture is processed in real time by our presenting 'stem. The technology we demonstrate is a logical lvancement in lecture capture.

enardi Lawanto et.al [10] This ongoing project uses a ɛsign-based research methodology to provide fresh lucational materials and methods that non-electrical ıgineering majors can use in a course on electric rcuits. These resources and methods are intended to ke the place of conventional note-taking techniques or .e typical guided notes used in the majority of ıgineering courses and encourage students to actively ırticipate in worthwhile learning activities. Two new ements that aren't part of the conventional guided notes e included in the enhanced guided notes (EGN) created / this study. The EGN will first contain inquiries that ıcourage students to gauge their metacognitive oficiency. Second, the addition of extracurricular ctivities will improve the EGN even more.

III. EXISTING SYSTEMS

he Existing systems collectively have certain cons in .em-access to notes after payment, does not accept hand ritten notes, must upload notes regularly, allows upload ıly for a particular stream. Our model overcomes this oblem by allowing both teachers and students to ɔload college notes and download them. Moreover, it lows students from different streams to upload their ɔtes. Notes can be downloaded for free or paid version based on how the uploader has set the download option The proposed model has additional feature of studen performance analysis which is not available in any othe existing systems.

IV. PROPOSED SYSTEM

The proposed system includes Sign up/ Registration Registered User, Home page/ dashboard, Upload Download, payment, Student Performance Analysis.

The application as a single-page application is developec using React.

Since that this website is dynamic, a server should be able to handle user requests. The Server will be programmed and scripted using Node js.

The information of the registered Users must be maintained on a database for application, management and security purposes since Our Web Portal will be ar interaction of User Profiles. For our project, the database utilized to store the data is firebase.

Student Performance Analysis is done in jupyte notebook using python language. The algorithm used fo prediction is Random Forest Regressor. The model is then deployed using Flask.

The bandwidth requirement for internet access is 480kb per session approximately.

Sign Up/ Registration:

If the person who is unregistered wants to register car easily register for accessing all the features by providing some of their basic details.

Inputs: Click on "Sign Up/Registration" and provide the basic details that are required e.g:

i) Username
ii) Mail
iii) Password

Registered User:

When a person is registered user. When he wants to access the site. He has to login by providing his username and password.

Inputs:

(i) Username
(ii) Password

Outputs:

(i) Successful Logged in (Open home page)
(ii) Invalid User ID & Password (Return same page) Then it will show register link below the login button.

Homepage:

Home page contains "username" and "logout". Also, contain years.

YEARS:

User should select their year which contains first year, second year, Third year and Final year.

Inputs: Click on "first year" it will show Departments and you can select any department.

Output: open upload or download page.

DEPARTMENTS:

It will display 5 departments which are CSE, ECE, EEE, Mechanical and Civil.

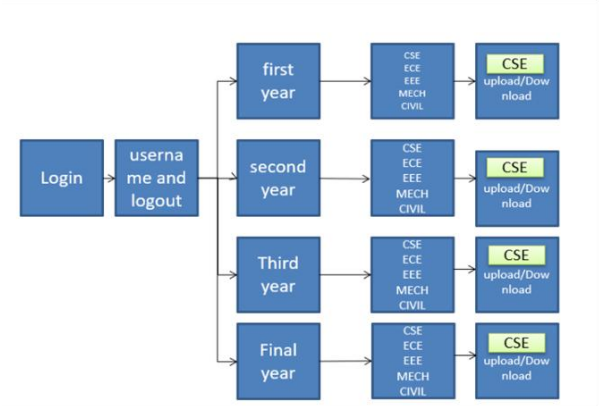

Figure. 2. Structure of the Application

Upload/Download:

Users can upload or download notes from the application. A registered student can upload notes for free or by setting up a price. Once the selling price is set, the notes are locked. A registered user or can download the notes for free if not locked, otherwise, the user has to pay the uploader to get access to the notes.

Students can share their materials (both written notes and documents in PPT, PDF, DOC, etc. format).

The maximum size of memory that is allocated for uploading the material is 2GB.

Student Performance Analysis:

A. Collecting Dataset

For analysing the student performance, a dataset named "Student Performance in Exams" is collected from Kaggle. The dataset consists of 8 columns and 1000 rows. Necessary libraries are imported are the dataset is read into jupyter notebook.

B. Feature Engineering

The next step is to do feature engineering like checking for null values.

Data visualization is done to under the data better. Visualizations like how many of the students take preparatory classes, student performance in subjects based on gender are done.

C. Data Pre-processing

The next step is Data Pre-processing. This is done by converting all the categorical data to numerical data like in gender male is converted to 1 and female to 0.

D. Training and Testing Data:

For training, the model We pass the larger portion of the dataset that the model is supposed to learn from.

After the model has done understanding from the training set, we must assess its effectiveness. We only use a smal fraction of the previously reserved data for this. The tes set refers to this fresh data.

D. Data Modelling and Evaluation

The model is created using Random Forest Regresso because it gives the maximum accuracy. During evaluation, we will get predictions from the test data These models generated predictions will be evaluated The model is the deployed using flask. Once the mode is deployed, students have to input details to get thei average score.

V. Performance Analysis

Although there are many different regression algorithms like Liner Regression, Logistic Regression, Suppor vector Machine our research suggests that Randon Forest regressor is the most accurate predictio technique. We were able to get a 99.7% accuracy utilising the Random Forest Regressor.

VI. Conclusion

Taking notes can be a big challenge for students wi learning and thinking differences. This application c help students with this note taking difficulty by shari their notes with fellow classmates. This application al serves as a platform for students to earn money part-ti just by uploading their notes by setting a selling price their choice. This application motivates the students actively take notes and promotes collaborative learnir Student Performance Analysis is also done to help stude predict their average score just by giving few inpu Thereby this application serves as a very helpful tool f students to learn, share and grow.

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