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INSCRIBE - College Notes Sharing Application

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Abstract: ***The lecture is still the primary teaching and learning form in university and will remain so due to its cost effectiveness. However, student disengagement caused by the traditional didactic style of lecture - with its one-way information flow allowing little or no interaction - prevents students from taking full advantage of this learning paradigm. Some work has been done to address this issue by re-designing lectures to incorporate more lecturer-and student interaction, but has yet to be widely adopted. In this paper, we present a novel approach to applying a student centered collaborative learning pedagogy into the lecture environment through a novel real-time collaborative notes sharing application Group Notes on Smartphones to let students voluntarily engage themselves by means of student-to-student interaction and also with the faculty members. Preliminary student feedback has shown that the approach is pedagogically and technically feasible and students are quite open to this approach due to its learning-sharing factor and peer motivation.***
Keywords: Android, IOS, Dart - Flutter, encryption, collaboration, Smartphones, education.

I. INTRODUCTION

With the advance in time and technology there is a need for faster dissemination of information .The increasing advantages of automated systems now are at their highest position thus many manual processes are automated.[1] Since the automated system is demanded now-a-days, educational infrastructures like colleges needed their manual system to function on mobile computing systems. Changes in Information Technology (IT) allow institutes to utilize databases and applications such as Student Information System thus, making the accessing of records centralized. One of the changes that came about is web based applications. These applications are an improvisation to the traditional- transaction processing systems.[2] For this is a notes sharing Android Application that allows the students of RGPV Bhopal from all branches across all 4 years of B.Tech to share notes, upload them and download them. For storage of files Firebase Storage is used. There are sections in this app namely known as "Branch Notes" and "Topic wise notes". Branch Notes give the notes for a specific branch whereas "Topic wise Notes" give the notes that can be shared across all years and branches like the "Quantitative notes" or "Logical reasoning notes".

A. Objectives

The objectives of the system are-

1) To reduce manual paperwork.
2) Reduced sharing and distribution time.
3) Increased reliability.
4) Increased operational efficiency.
5) Data security.

This Notes Management System can be readily used by non-programming personal avoiding human handled chances of error. This project is used by Three types of users

a) Students
b) Teachers
c) Administrators

Students and Teachers can create their accounts and start viewing notes shared by other users as well as upload their own notes. Administrator must be an authorized user who will keep track of all the uploaded notes and manage users as well through the admin panel. New features can be added to the system as per requirements.

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II. LITERATURE REVIEW

A. *Android Based Smart Learning and Attendance Management System*

This system basically includes the attendance tracking and till some part the idea of notes or study materials sharing. In short, the system to some extent isn't able to fulfil the aim of notes sharing as there is no such provision mentioned in the paper or the system as well.[3]

B. *Lecture Monkey*

This app is basically aims at capturing the live video of the lectures and uploading on the domain so the students can watch and learn. But the videos just can't clear the doubts if the student or the user has any which in turn creates the communication gap between professor and student.[4] All the above mentioned systems are either not able to implement the idea or creates a communication gap. In the proposed project Android based study materials and notes management system is designed to overcome such errors or implementing the idea to its extreme.

C. *Providing Students with Instructors' Notes*

Problems with reading, studying, and attendance. Researchers have found that instructor-provided notes improved student performance but were criticized for a lack of ecological validity in the research designs.[5] This study improved on past research by using instructor-provided notes in a required class throughout an entire semester. Previous findings were not supported in that final grades and attendance were similar across student-generated notes, instructor-provided partial notes, and instructor-provided full notes. Students evidenced poor reading, studying, and attendance behaviours in all 3 conditions.

D. *Evaluating the advantages and disadvantages of providing lecture notes: The role of internet technology as a delivery system and research tool*

Relationships among patterns of access to online notes, examination performance, and student absenteeism were examined. Students who made more frequent use of online notes performed at a higher level on course examinations. Students most frequently accessed online notes while corresponding lecture content was being presented in class, but this pattern weakened to some extent during the semester. Students who attended class most consistently made greater use of online notes. Patterns of online note use were different for students with low and high rates of absenteeism.[6]

Smart Phones has changed the life of everyone. Along with other features, an App in Smart Phones allows to do almost everything, from playing games to do business. The development of app described in present paper has given a strong understanding of various challenges associated with design and development of apps.[7] The experience has been quite challenging, motivating as well as satisfying. Android as a full, open and free mobile device platform, with its powerful function and good user experience rapidly developed into the most popular mobile operating system. We want to address this issue from a different perspective by introducing collaborative learning, a student-centered learning pedagogy, into the lecture environment utilizing a Smartphone - the mobile communication device that most students either already own, or will in the near future. Our primary objective is to provide a platform which encourages student engagement in a lecture by allowing them to take notes of particular session, and then share those notes either during, or after the session, with other group members.[8] The taking and sharing of notes is proven to be an effective learning technique that aids memory of the lecture by fostering encoding, articulation and rehearsal. The difference between the present state and the innovation after implementation is that in present State there are subscriptive Software present which demands premium subscription.They are time consumed in distributing notes to everyone individually. Manual Paperwork is done in most institutions. Students are informed by sending mail to them manually about the notes. And also lack of accessibility.[9]

III. PROBLEM FORMATION

As the world is being developed with the new technologies, discovering and manipulating new ideas and concepts of taking everything online are rapidly changing .It is difficult for teacher's to circulate their notes to each and every student whom is he/she teaching. College Notes Sharing App provide an easy approach for both students and teachers to circulate the notes whether of any kind like lecture notes, Unit wise descriptions and all the important documents. The teachers and students can upload the documents from anywhere and students can download it. Overall it is managed by the admin. The lecture format though is subject to many variables, e.g., the knowledge, structured delivery and presentation skills of the lecturer, the actual content to be delivered, the size, shape and acoustics of the venue and the facilities available to aid in content delivery, the level of student interaction encouraged, and the number of other students attending and their motivation for being there, and so on.

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Common to the majority of lectures is a didactic style of presentation where the lecturer delivers content to the students in a one-way flow of information.[10] Questions to the lecturer are generally not encouraged during the lecture as they would interrupt the information flow and may possibly put the lecture behind schedule, despite instant feedback being of most benefit to the students doing the asking, and presumably others in the audience as well. Instead, questions are postponed until the end of the lecture, or deferred until tutorial or practical sessions.

The second avenue to obtaining quick feedback during the lecture is discussions between students however there is a real or implied prohibition on this as it may disrupt students in the vicinity. Students can only get the full benefits of the lecture if they are fully engaged however the traditional didactic style of lecture - with unidirectional flows and very little, or no, interaction between lecturer and students, and among students themselves - is the major cause of student disengagement. A student will lose attention after approximately 20 minutes (10 – 15 minutes) unless something occurs to re-engage them.

IV. PROPOSED SYSTEM

A lecture is typically not interactive and will continue its didactic style of one-way information flow into the foreseeable future. In a lecture, the presenter, or content expert actively pushes information to a mass group of students, who passively process the information alone in an attempt to build the relevant knowledge for themselves.

The lack of feedback or interaction, at the time when it is most needed for a student to process relevant information during a lecture is a major contributing factor to student disengagement, which consequently causes negative impacts on their willingness to attend lectures and on their learning outcome eventually.

If a student cannot ask the lecturer or their peers critical questions at the right time to reconcile their own understanding they may lose interest and find other ways to occupy themselves, such as doodling, sleeping, texting, twittering etc., or just getting up and leaving.

In addition, the attention span of an average student is approximately 20 minutes before their attention begins to wander. If the lecturer does not take special measures to engage students by, for instance, asking or answering questions, quick breakout sessions, quizzes, or simply telling a joke, their attention would wander in 20 minutes at most. If taking into account that approximately 50% of contact hours between students and teaching staff are comprised of lectures, there is a real possibility that around 30% of all student contact hours are essentially wasted.[11]

In recent years, much attention has been paid to redesigning lectures in a bid to incorporate lecturer-and student interaction (we call it vertical interaction) by taking advantage of new teaching gadgets such as clickers or mobile phones. Empirical evidence as to how student engagement can be improved by this approach as well as to their effectiveness in increasing student learning outcomes is yet to be proven. More importantly, many lecturers have yet to be convinced of making extra efforts to redesign their lectures in order to harness these new technologies.

Our approach is complementary to the current endeavour, but from an orthogonal perspective, i.e., student-to-student interaction (we call it horizontal interaction), which has been practiced in small-class tutorials, workshops, or practical sessions, but virtually prohibited in large-class lectures because it does not fit well in the lecture context and is likely to disrupt other students who are in the vicinity of students involved in the interaction. To make this approach viable in lectures, we specifically want to address this issue.

College Notes Sharing App is a web based notes sharing and management system which helps students and teachers to share their notes online effectively. It reduces the wasting of time in manually distributing notes to each individual.[12] It greatly overcomes the lack of availability and converts the manual old school paperwork to a fully automated and managed online system. College Notes Sharing App allows its users to securely register and log in to their individual accounts and create, read, update, delete notes according to their needs.

It provides notes to everyone in a very secure manner. Multiple users can work in this system at the same time under centralized supervision by the administrator. It is a very useful notes management system for Colleges, Schools and other Institutes to manage and share their notes in a secure, efficient and effective manner. After implementation of this project, it gives an easy to use web based system, users can register online, also notes are accessible from anywhere, and can centralized control by administrator and managed notes in a secure manner. This app is subscription free.

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A. Diagram

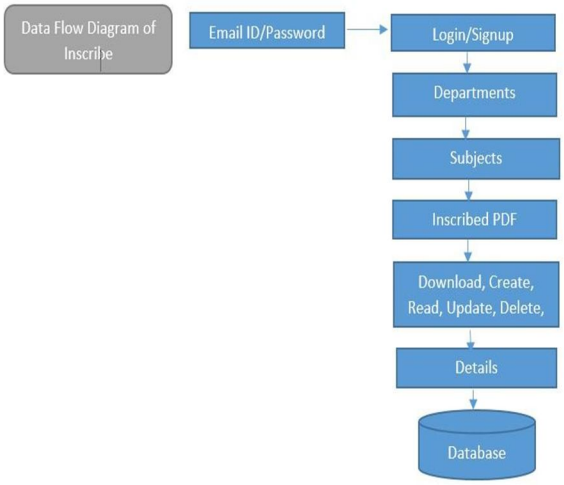


Figure: Data Flow Diagram

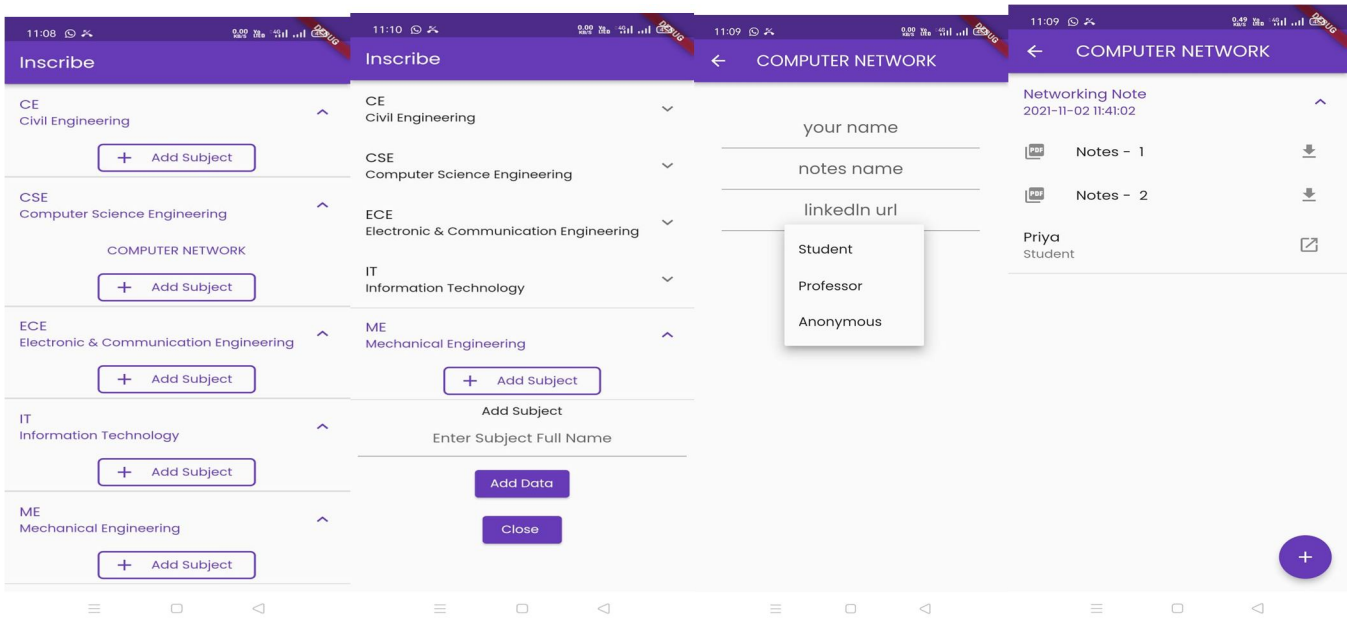
V. RESULT DISCUSSIONS

Our approach is to handle all the notes of the particular subject with respect to their branches. Also, it has a chat option through LinkedIn in which students can question and answer each other. The main purpose of the project is to integrate notes of the subjects in a consistent manner so that students get help in exam times from it to maintain all notes in one place rather than maintaining copies or using books. The result aims at the following - Get notes of any subject in a few seconds. Can be used by students and faculties of the college. Students can question and answer with each other.

A. Benefits of the Proposed System

The current system had a lot of challenges that are overcome by this application:

The scope of the project includes the following:- Institutions can use this system to maintain notes in one place. All students and faculty can upload their notes or presentations using this system. Students can solve their doubts with the help of other students and faculty.



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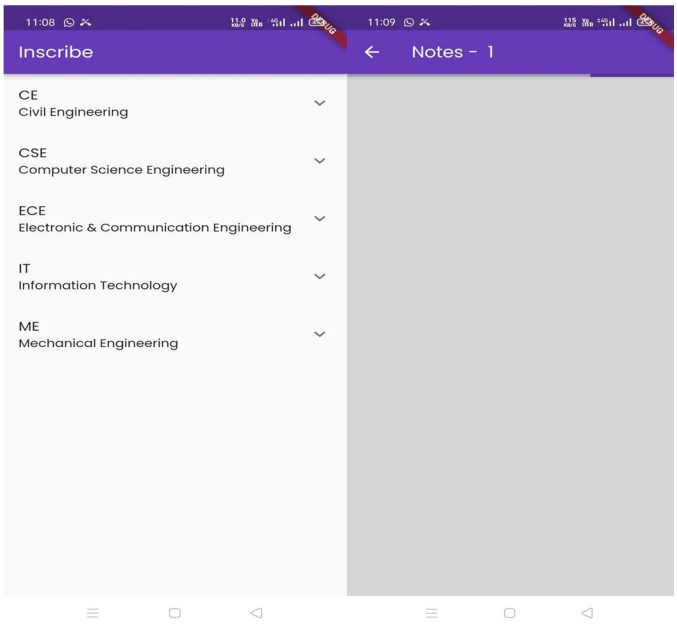

VI. CONCLUSION

A lecture is typically not interactive and will continue its didactic style of one-way information flow into the foreseeable future. Consequently, low attendance rate and student disengagement in lectures are the common problems in most universities. Complementary to existing approaches that re-design lectures to incorporate more vertical interaction between the lecturer and students by taking advantage of special electronic devices, our approach lets a student be kept self-engaged by allowing them to voluntarily participate in horizontal interaction. This approach attempts to apply a student centered collaborative learning pedagogy into the lecture environment through a real-time collaborative note sharing application Inscribe. Through our application system, students will find an easy way to get notes of any subject of their respective branches. This project builds an android application that provides all necessary notes branch-wise and unit-wise to the students. It is also helpful for faculties to upload notes and presentation of their respective subjects.[13] System management supports vertical interaction by offering the standard question-and-response feature provided by a clicker solution, e.g., the lecturer can post a quiz/question through the sharing the notes client and students can use their notes application to vote or answer, and beyond-standard features, e.g., a student can use their notes application to interact with the lecturer (asking questions, giving feedback etc.) through the LinkedIn client on the lecturer console. The current notes sharing application is designed for Android-based Smartphones. To address platform agnosticism, we will re-design the application for other mainstream Smartphones such as iPhone, Windows Phone etc. The notes server is still rudimentary. The notes client on lecture console is been designed and implemented. Ultimately, we need to test our hypothesis after the Group Notes system is deployed for pilot use in our university. Few drawbacks that has been found out are -

1) Internet is required.
2) Can only be used though Android Smartphones.
3) Initially, notes may not meet student's needs or maybe they didn't get notes of a particular topic which they want.
4) A person can only upload their notes pdf of a fixed size.

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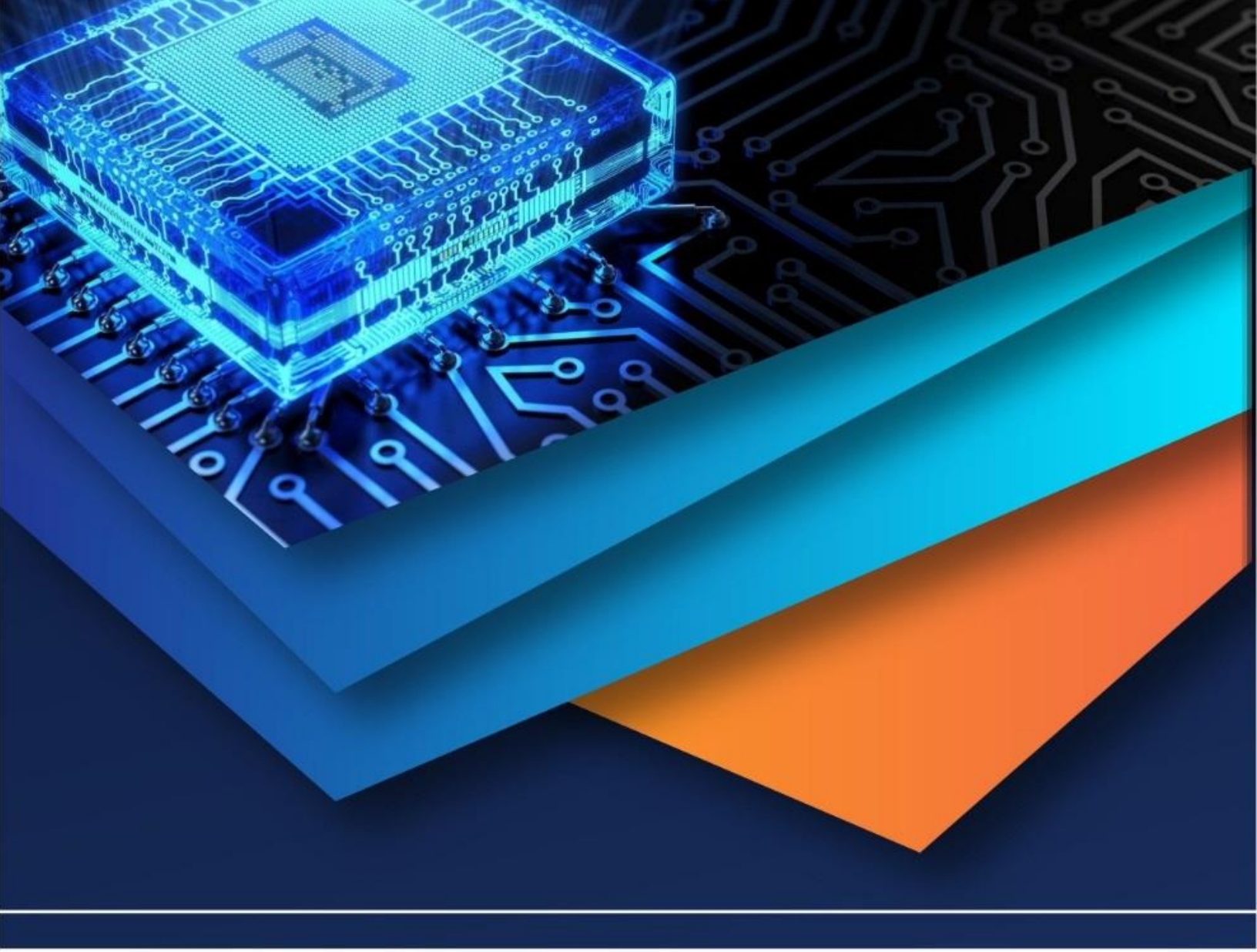

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