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An E-Learning Web Application to provide Online Teaching at the Organization Level

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Abstract

Internet and distance learning that is mostly referred to as on-line education plays a significant role within the country's education system. It's simple that on-line education provides ample of advantages to young learners. Faculty of an e-lecture annotation system presents a completely new learning environment for college kids therefore requiring a unique skills set to be successful. Fundamental reasoning, investigation and advancement aptitudes are developing in significance as understudies have overstated a volume of information. It is viewed as computer power-assisted learning and as pedagogy for student centered and cooperative learning. Early advancements in e-learning fixated on content is conveyed carefully. It is straightforward that on-line training gives abundant of advantages to youthful students.

Keywords: *e-learning, e-lecture, online learning, education, an online annotation system.*

1. Introduction

E-Learning can possibly change the manner in which we instruct in all cases. It can increase expectations and broaden interest in long lasting learning. It cannot replace teachers and lecturers, but alongside existing methods, it can enhance the quality and reach of their teaching [8][9] .The concept of e-learning has two main subtitles as synchronized (where a group of students and an instructor actualize an online conference meeting in a computer environment) an asynchronized (where individuals actualize self-training in computer environments).[1] Regardless the remarkable development in online instruction, the utilization of online teaching addresses requests a proceeded with exertion to improve conceptually and technologically .In any case, the improvement of online teaching stages that hold and empower cooperation isn't without challenges, for example, endeavoring to plan a device that successfully provides online teaching to the assorted variety of learning and instructing approaches. Some even say that e-learning can reform training as it gives new chances to conventional learning.[7]

Research evidence suggests that these online tools, web technologies, have not only affected people's private and professional lives, but are also starting to transform learning patterns and pathways [2],[3] and also demonstrated the benefits of applying these technologies to learning [4][5].

2. Problem Defination

2.1 Statement of Problem

To create online teaching platform making concepts more interacting & can be accessed anytime when the user is comfortable.

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Some country that expertise accompanies age whilst others demand that it originates from learning [6].These days, because of the very fact of the web, mastering is handy to all or any. Consequently, individuals within the international locations the place traditional studying is confronting special deterrents can profit.Up until now, e-learning has been gainful to those that grasped its value. Despite these, online teaching to know has many different advantages. Training may additionally have some purposes, and on-line guides assist to meet it. Some even say that e-learning can reform education because it offers new possibilities conventional going to know.

2.2 Existing Project

Protectors of e-learning ensure that the essential favored situation of this learning procedure is that it is self-guided. On the off chance that you have to watch a video once more, we can [6].Nevertheless, considering this inherent chance, adapting normally implies no learning. People may turn off from totally charming in the material, and consider to be as a mark- box work out – essentially one more thing on an ever-creating schedule.In a self-managed climate, an e-learning assignment can go through an overwhelming gravitational pull to the lower part of the rundown, where it can grieve for quite a long time, weeks, or even indefinitely [6] .The actuality is, numerous individuals discover it a lot simpler to disguise. The new aptitudes and information through dynamic instructional meetings with others, than through an indifferent e-learning module. So, there is need of a framework which is exacting in nature.

3. Proposed Model

The fundamental objective of the e-learning Web-Application is to establish a climate which comprise the various segments like recorded video section, assignment section, Quiz Section, Interactive sessions, context based learning & discussion forum put together learning with respect to different subjects ordered together committed for the understudy of somaiya.

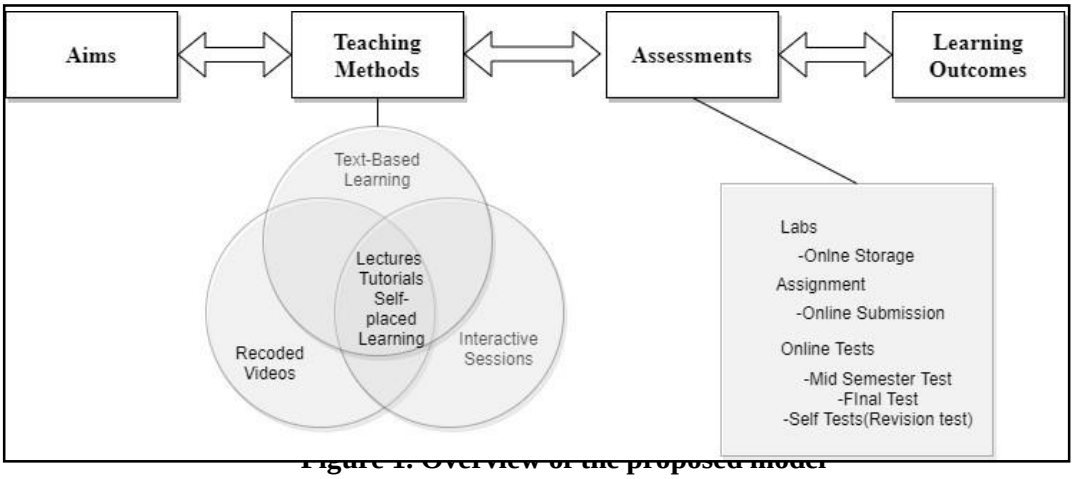

Figure 1. Overview of the proposed model

A. MODULES

1. Student:

- The client is now enlisted into the database when he/she brings induction into the college.
- The email id and the password will be allocated and will send it by sms and the enrolled email during the admission cycle.
- Now user can directly logging in into his account using the credentials given.
- Students can travel to any of the section whenever he/she is comfortable.
- Students can submit the assignment in the assignment section Before the given deadline

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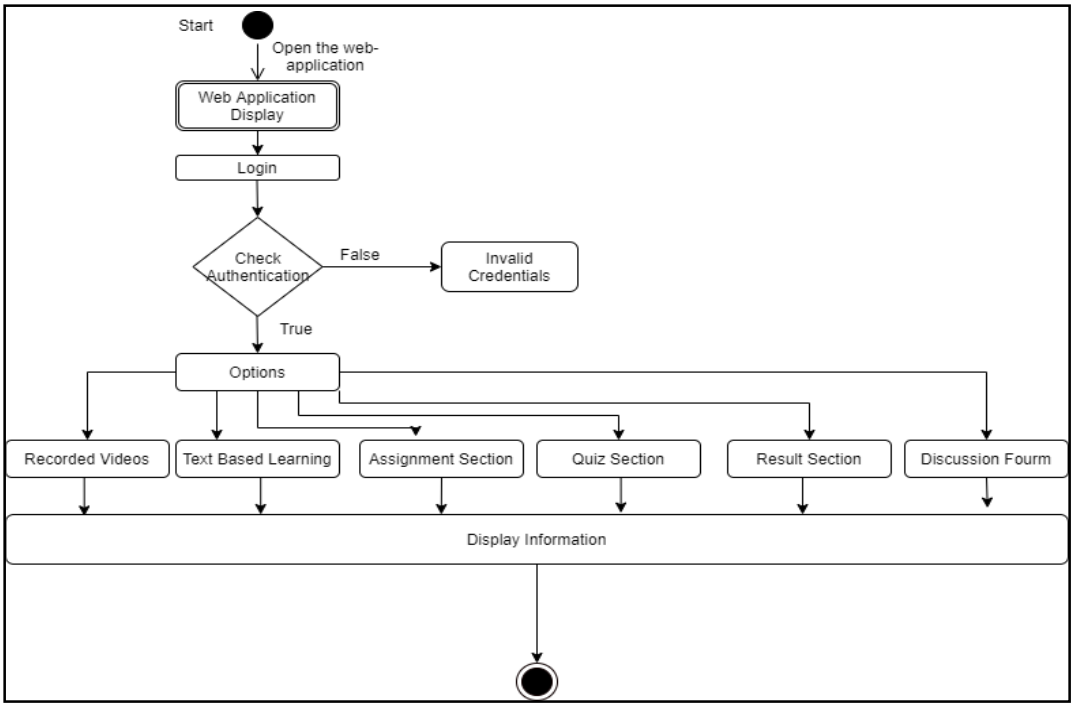

Algorithm: Figure 2. Flow of the student

Step1:Start
Step2:Open Web Application
Step3:Login
Step4:Enter Credentials Step5:
If Authentication :
Display All the Information
Else:
Invalid Credentials
Step 6 :Stop

2. Teacher:

- When teachers are appointed they receives credentials through sms and registered e-mail.
- A new entry will be also done into the database. This ensures that the teacher is the verified teacher by the authorities.
- Teachers can upload the items in the different section of different class.

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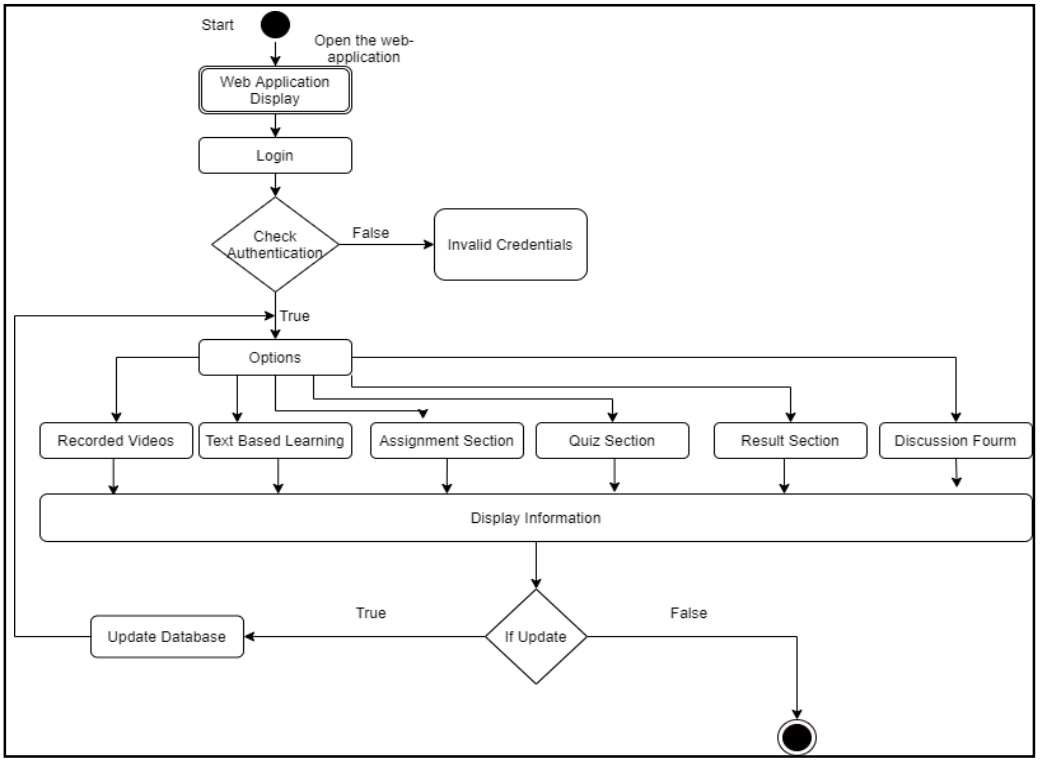

Figure 3. Flow of the Teacher

Algorithm:
Step1:Start
Step2:Open Web Application
Step3:Login
Step4:Enter Credentials Step5: If Authentication :
Display All the Information
Else :
Invalid Credentials
Step 6 :If Update :
Update Database Step 7:Stop

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3. Assignment Section:
   - The teacher can add the assignment into their assignment section including the deadline assigned to each assignment and can be able to see all the assignment of the students.
   - Students can see all the assignment assigned to them in different sections.
   - Teachers can then assign the marks based on the assignment submitted by the students.

User Section:

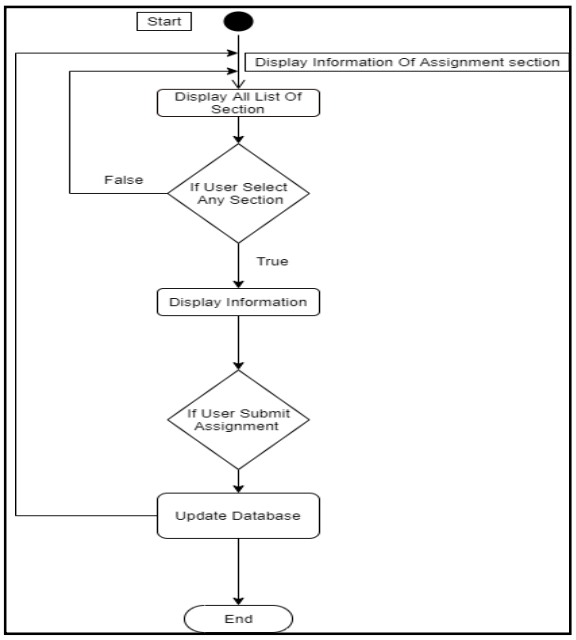

Figure 4. Assignment flow for the Student

Algorithm Step
1: Start
Step 2 :Display Information Of the Assignment Section. Step 3 : Display All the sections
Step 4 : If user clicks any section:
Display the information related to that Section Step 5: If User Submits the assignment:
Update the database with making a new entry associated with it . Step 6 : Stop

Teacher Section:

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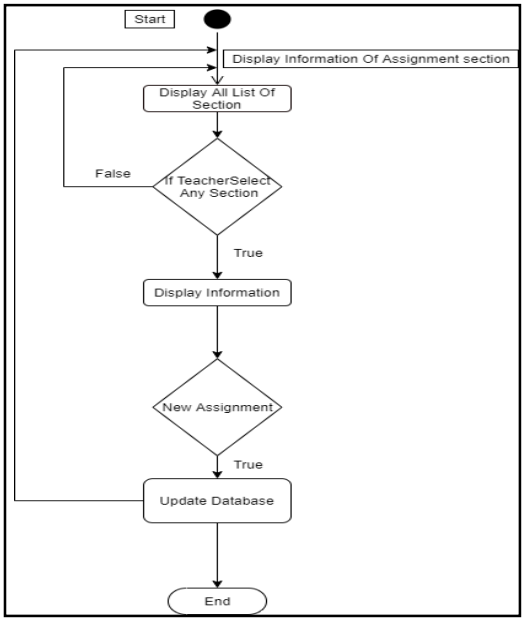

Figure 5. Assignment flow for the Teacher

Algorithm Step
1: Start
Step 2 :Display Information Of the Assignment Section. Step
3 : Display All the sections
Step 4 : If Teacher clicks any section:
Display the information related to that Section Step
5: If Teacher adds the assignment:
Update the database with making a new entry associated with it .
Step 6 : Stop

4. Quiz :

- There are different sections of the quiz based on any of them Student can apply for the quiz based on the given sections as well as the given module.
- There is also a self-placed revision quiz where students can apply for it and get tested how confidently they are prepared for the particular subject.
- The result is displayed after given the answer all the question.

User Section:

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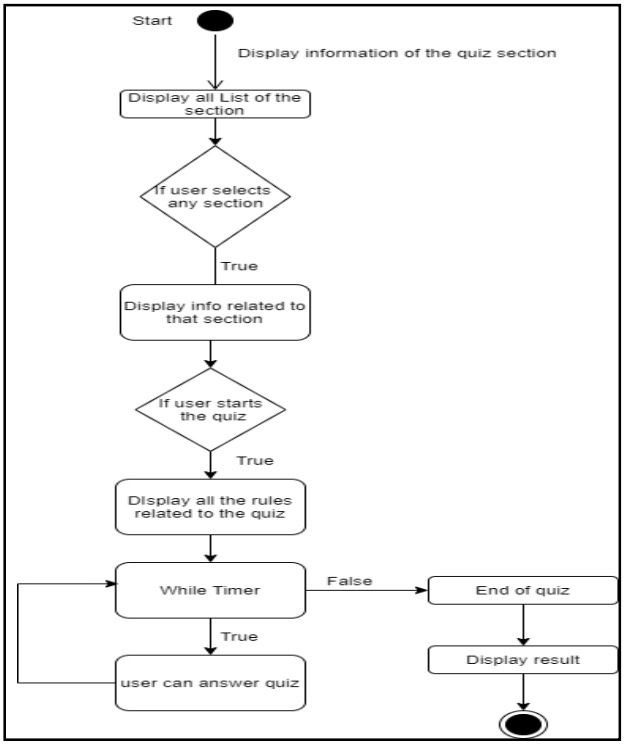

Figure 6. Quiz flow for the Student

Algorithm: Step1
: Start
Step 2: Display Information Of the Quiz Section. Step
3: Display All the Sections
Step 4 : If User Selects any section then
Display information related to that section Step
5: If User clicks the Quiz Then
Display all the rules related to the quiz Step
6 : Start Quiz
Step 7 : Repeat STEP 6 Until the timer is not 00:00 Step
8 : Display Result
Step 9: Stop Teacher

Section:

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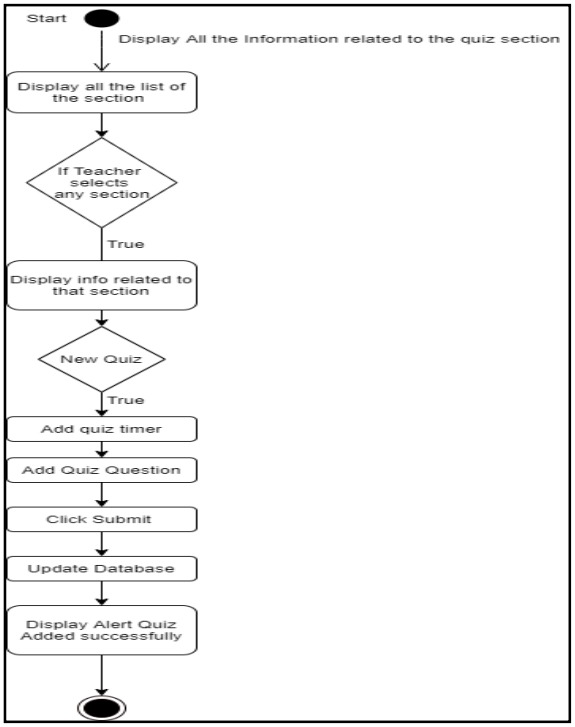

Figure 7. Quiz flow for the Teacher

Algorithm: Step
1: Start
Step 2 :Display Information Of the Quiz Section. Step
3 : Display All the sections
Step 4 : If Teacher clicks any section:
Display the information related to that Section Step
5: If New Quiz:
Add Quiz Time limit Add
Quiz Questions Clicks
Submit Update Database
Step 6: Display Pop-up with the message “Quiz Added Successfully” Step
7: Stop

5. Result Section :

- In this section the user can see all the history of quiz marks and assignment marks including the date and time when they appeared.

6. Discussion Forum :

- Students can discuss the topic related to the subject with other students as well as the teacher, where they can clarify their doubt.

LIST OF TABLES WITH ATTRIBUTES AND CONSTRAINT

Table 1. User Table

Column Name	Data Type	Description
Id	Integer	Primary Key

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Fname	Varchar	First Name of the user
Lname	Varchar	Last Name of the user
Username	Varchar	Username of the user
Password	Varchar	Password of the user
Department_id	Integer	Secondary Key linking to the department
Class_id	Integer	Secondary Key linking to the class
Role	Integer	Secondary Key linking to the role
Location	Varchar	Location of the profile picture
Mobile_no	Varchar	Mobile no of the user

Table 2. Admin Table

Column Name	Data Type	Description
Id	Integer	Primary Key
Username	Varchar	User name of the admin
Password	Varchar	Password of admin

Table 3. Assignment Table

Column Name	Data Type	Description
Id	Integer	Primary Key
Department_id	Integer	Secondary Key linking to the department
Class_id	integer	Secondary Key linking to the class
Subject_id	integer	Secondary Key linking to the subject
Name	Varchar	Assignment name
Description	Varchar	Description of the assignment
File_location	Varchar	Where the file is stored

Table4. Class Table

Column Name	Data Type	Description
Class_id	Integer	Primary Key

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Class_Name	Varchar	Name Of the class

Table 5.Department Table

Column Name	Data Type	Description
Department_id	Integer	Primary Key
Department_Name	Varchar	Name of the department
Dean/Head_Of_De partment	Varchar	Name of the Head of department

Table 6. Exam_Category

Column Name	Data Type	Description
Id	Integer	Primary Key
Department_id	Integer	Secondary Key linking to the department
Class_id	Integer	Secondary Key linking to the class
Subject_id	Integer	Secondary Key linking to the subject
Category	Varchar	Exam type
Exam_time_in_mi n	Varchar	Time of the exam
Marks	Integer	Marks of the exam

Table 7. Exam_Result

Column Name	Data Type	Description
Id	Integer	Primary Key
Department_id	Integer	Secondary Key linking to the department
Class_id	Integer	Secondary Key linking to the class
Username	Varchar	Username of the user
Exam_type	Varchar	Type of the exam
Total_question	Varchar	Total no of question in exam
Correct_answer	Varchar	Total no. of correct answer in exam

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Wrong_answer	Varchar	Total no. of wrong answer in exam
Exam_time	Varchar	Time of the exam when appeared

Table 8. Notes

Column Name	Data Type	Description
Id	Integer	Primary Key
Department_id	Integer	Secondary Key linking to the department
Class_id	Integer	Secondary Key linking to the class
Subject_id	Integer	Secondary Key linking to the subject
Name	Varchar	Notes name
Description	Varchar	Description of the notes
File_location	Varchar	Where the file is stored

Table 9. Question

Column Name	Data Type	Description
Id	Integer	Primary Key
Question_number	Varchar	Question number
Question	Varchar	Name of the question
Opt1	Varchar	Name of the opt1
Opt2	Varchar	Name of the opt2
Opt3	Varchar	Name of the opt3
Opt4	Varchar	Name of the opt4
Answer	Varchar	Name of the answer
Category	Varchar	Exam name

Table 10. Role

Column Name	Data Type	Description
Id	Integer	Primary Key
Role_name	Varchar	Student.teacher

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Table 11. Subject

Column Name	Data Type	Description
Subject_id	Integer	Primary Key
Department_id	Integer	Secondary key to the department
Class_id	Integer	Secondary key to the class
Subject_name	Varchar	Name of the subject

Table 12. Submitted_Assignmet

Column Name	Data Type	Description
Id	Integer	Primary Key
Stident_id	Integer	Secondary Key linking to the user
assignment_id	Integer	Secondary Key linking to the assignment
File_location	Varchar	Where the file is stored
Marks	Integer	Marks obtained
Submitted	Boolean	Submitted or not
Date	Varchar	Date of assignment submitted

Table 13. Videos

Column Name	Data Type	Description
Id	Integer	Primary Key
Department_id	Integer	Secondary Key linking to the department
Class_id	Integer	Secondary Key linking to the class
Subject_id	Integer	Secondary Key linking to the subject
Name	Varchar	Video name
Description	Varchar	Description of the video

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File_location	Varchar	Where the file is stored

B.SCOPE OF PROPOSED MODEL

- The framework is User-Friendly as anybody can utilize it effectively and intuitive.
- This framework assists with abstaining from sitting around to visit college. It is efficient without any complexities.
- Easily congenial with 24 x 7 accessibility.
- It is an essential to higher segment configuration to encourage better execution at top time.
- Provides security to information through authorization.
- It saves time for the students as they can learn from anywhere and at anytime.

4. Analysis

For the better overview of audience , I decided to create a google form which would help to determine the stats of problems facing during the online learning . Please NOTE, the opinions of 28 students were taken into consideration and the results were as follows:

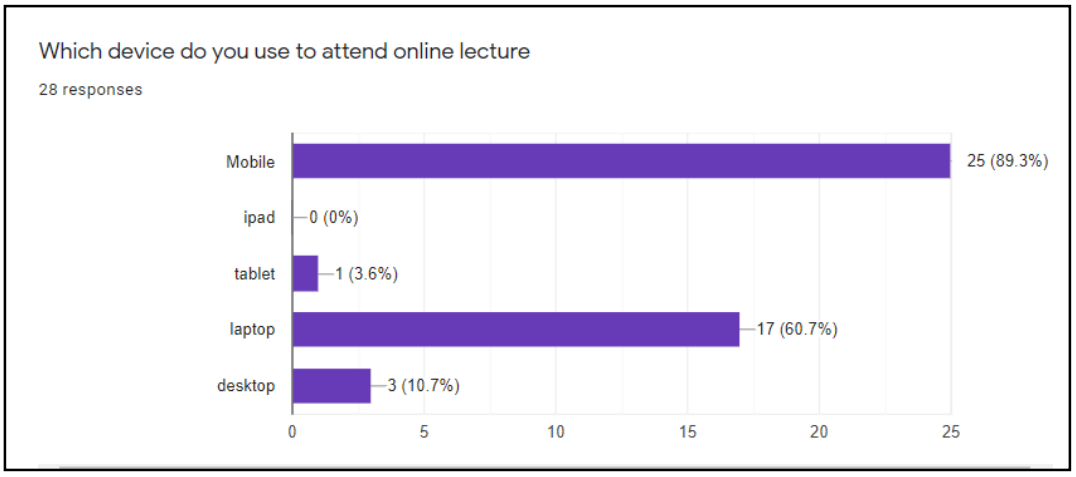

Figure 8. Device used for attending online lecture

The given graph, figure 8. shows us that 89.3% are using the mobile for attending the online lecture, 3.6% uses tablet, 60.7% uses laptop&10.7% uses desktop for attending the online lecture.

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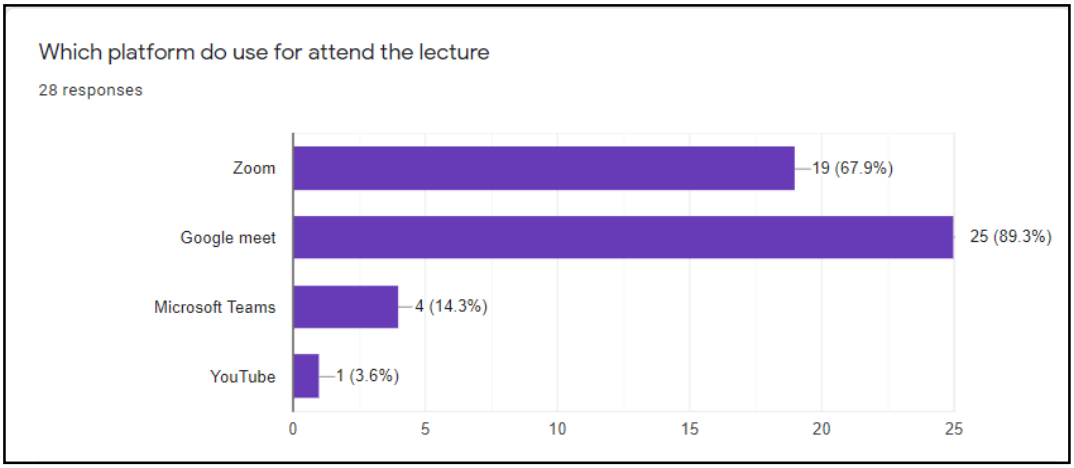

Figure 9. Platform used for attending the lecture

The given graph, figure 9. Shows us that 67.9% uses zoom for attending the online lecture, 89.3% uses google meet for attending the online lecture, 14.3% uses Microsoft teams for attending the online lecture, and 3.6% uses the youtube.

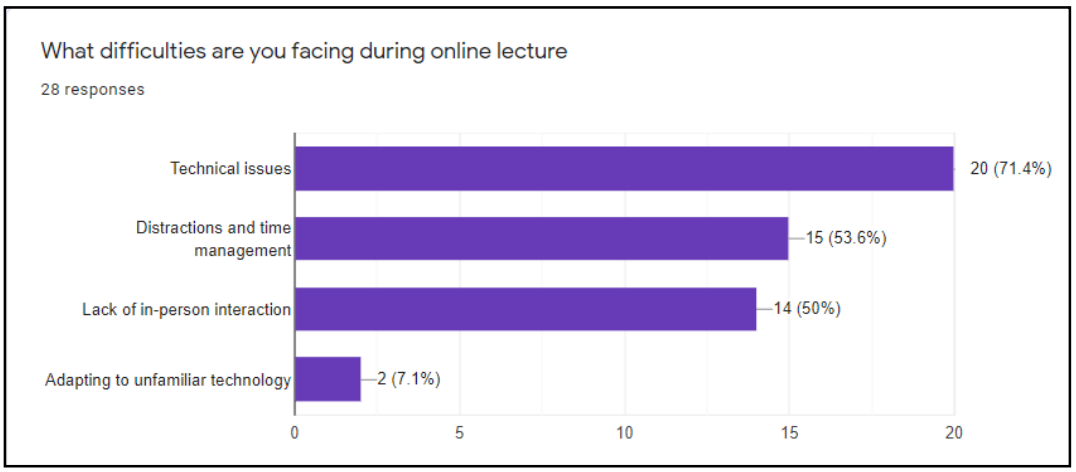

Figure 10. Difficulties faced during the online lecture

The given graph, figure 10.. shows us that 71.4% faces the technical issues during an online lectures , 53.6% faces the distractions and time management issue , 50% lack of in person interaction and 7.1% faces the adapting to unfamiliar technology,

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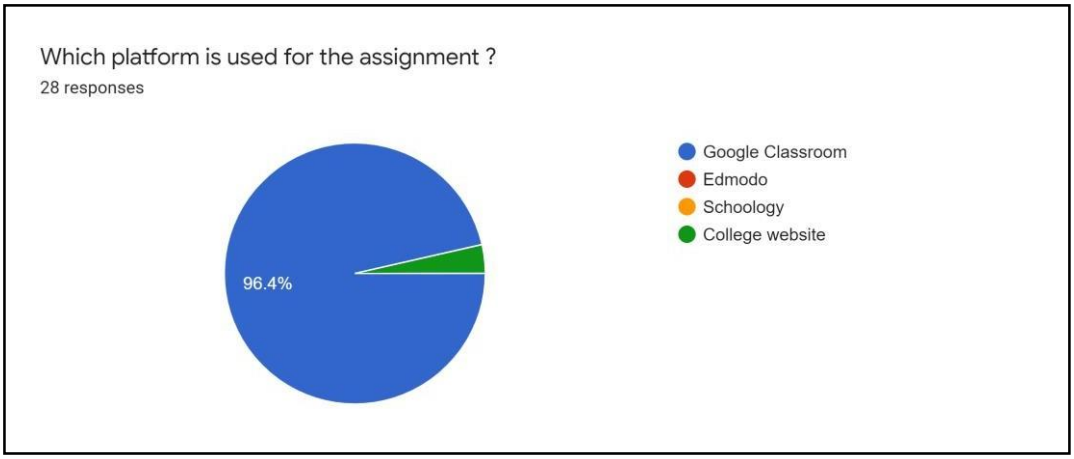

Figure 11. Platform used for the assignment submission

The given chart, figure11.shows us the different platforms are being for conducting the assignment, 96.4% uses the google classroom & 3, 6% uses the college website.

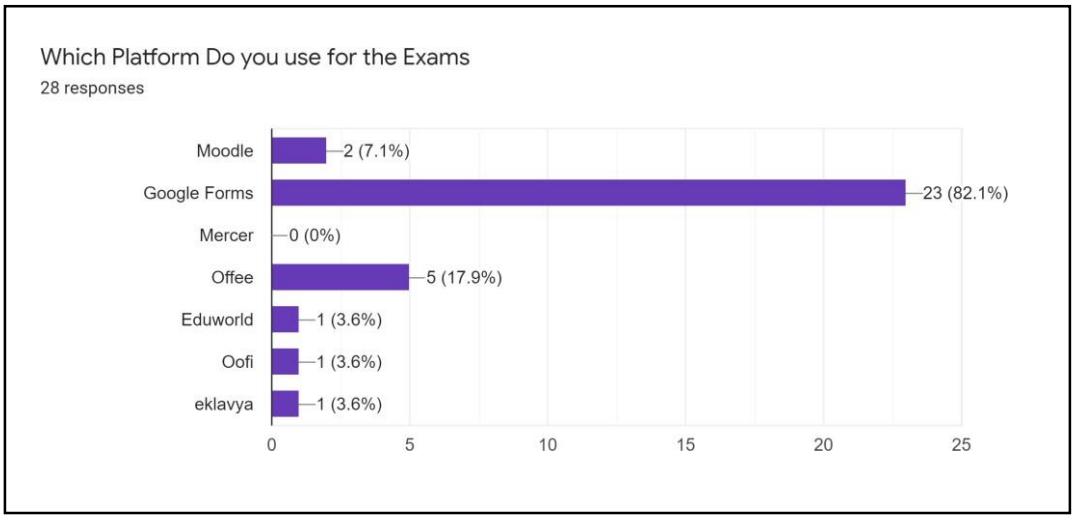

Figure 12. Platform used for the exams

The graph, figure 12. show us that the different platforms are being used for conducting the exams , 7.1% uses the moodle, 82.1%uses the google forms,17.9% uses the offee , 3.6% uses Eduworld, 3.6% uses eklavya

5. Future Scope

Some of the changes can be done into future are:

- Artificial Intelligence Mechanism can be added.
- Other the college subject , new courses can be added apart from college subjects
- Live lecture can be added
- Online practical section can be added

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6. Conclusion

As the conclusion , the e-learning system is being under development and later on will be tested with the sample data . As the number of student is increasing to preferred for an online learning, hopes for a single system which contains all the necessary section into it so they can manage all the things easily. Along these lines the improvement of this online framework sure can enable the understudies to gain proficiency with the theme all the more altogether.

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References

8.1 Journal Article

[1] Assist. Prof. Dr. Aysem Seda YUCEL "E-Learning Approach In Teacher Training". October 2006. https://www.researchgate.net/publication/26442271_E-Learning_Approach_in_Teacher_Training

[2] Redecker , C. , Ala-Mutka ,K.,Bacigalupo ,M.,Ferrari ,A.,& Pun,Y. "The impact of web 2.0 innovations on education and training in Europe 2009 https://ideas.repec.org/p/ipt/iptwpa/jrc55629.html

[3] Ala-Mutka ,K. "Mapping Digital Competence : Towards a Conceptual Understanding. European Commission – Joint Research Centre – Institute For Prospective Technological Studies 2011 ftp://jrc.es/pub/EURdoc/JRC67075_TN.pdf

[4] Pena-Shaff , J.B., & Craig , N. " Analyzing Student Interactions and Meaning Construction in Computer Bulletin Board Discussions , Computers & Education (42,243-265) 2004 http://www.learntechlib.com/p/67094/

[5]Natalia Gomes & Carlos Fonseca , Maria Jose Hernandez "Step by Step :building an e-learning project" November 2012 https://www.researchgate.net/publication/267391712_Step_by_step_building_an_e-learning_project

[6]Deepen Mavani,Bilal N Shaikh Mohmmad "An E-Learning Based Approach For Video Lectures at Organization Level 6th April 2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3568536

[7] Poonam Gaur, "Research Trends in E-Learning",September 2015 https://www.researchgate.net/publication/306092115_Research_Trends_in_E-Learning

[8] Keval Vinod Chhedda , Shaikh Mohammad Bilal N ," An E Learning Application to provide Video Lessons" (16-20) July 01, 2020 http://iaraedu.com/about-journal/ijair-volume-7-issue-3-i-july-september-2020.php

ISSN: 2233-7857 IJFGCN

[9] Kamaruddin Mamat , Farok Azmat, ”Mobile Learning Application for Basic Router and SwitchConfiguration on Android Platform” Procedia - ocial and Behavioral Sciences 90 (2013) 235 – 244.October,2013
https://www.researchgate.net/publication/275259939_Mobile_Learning_Application_for_Basic_Router_and_Switch_Configuration_on_Android_Platform

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