

SWOTTING CLASSROOM: A Virtual Classroom using Python

Ragini Bhawsar^{*1}, Shriti Billore^{*2}, Suryakaran Tiwari^{*3}, Vaibhav Deshmukh^{*4},
Vivek Tiwari^{*5}

^{*1,2,3,4,5} Student, Department of Information Technology, A.I.T.R, Indore, Madhya Pradesh, India.

Abstract

Swotting classroom is revolutionary idea for the teachers and students. There are emergencies for which everyone needs to be ready. Students must not stop their education. For this we need a platform for teachers and students which is virtual classroom, so that students can study efficiently, for this we came up with the idea of swotting classroom in which students can submit the assignments and can give quizzes and also can see the attendance. Admin will handle the database and teachers have their own username and password and they can give assignments and upload from their system. Students can see that and submit it also teachers give Google for quizzes and students need to complete it on time. All this is done through HTML, CSS and JavaScript and python.

Keywords: swotting classroom, python, PyCharm IDE etc.

I.Introduction

Swotting Classroom, it is a platform for learners, it is a virtual classroom for students, it is a website for learners where teachers can upload assignments and students can complete and submit it. Also, it has the feature of quiz, where teachers can upload quizzes and student complete it on daily basis. Also, it has feature for attendance, students can check their attendance when teacher will upload it, and students can check the syllabus of the subject.

This website will help in the emergency like the pandemics or any other emergency as there will be a virtual classroom.

Problem Resolved from this project idea:

- It will be helpful in saving time of both teachers and students.
- It will reduce the stress of teachers and students.
- It has advanced features for assignment submission.
- Model will be helpful in reducing the wastage of papers.
- It will be helpful for teachers as they don't need to push the last date of any assignment.
- Teachers can directly show the attendance.

II. Related works

This type of system has been made before by many companies and this is not a new system but we inspected the existing and their features and advantages and disadvantages, which is shown in table 1.

Existing systems	Features	Advantages	Disadvantages
Google classroom ^[1]	This is a website which is kind of virtual classroom, provide the facility of assignment.	It is safe to use as it is made by google.	We cannot generate quizzes in the website itself.
Learning management system ^[2]	This is a website which provide the platform for students and teachers	It can generate quizzes.	This system has server issues.

Table 1: Existing systems

III. Proposed System

The platform for online classroom should be able to provide necessary functions such as quizzes and assignments and attendance. This system will have teacher and student page by which teacher can provide all the assignments and quizzes and students can check and submit them and also before due date.

We came up with some of the objectives:

- Objective 1: To provide the platform for teachers and students for submission of assignments and quizzes.
- Objective 2: To check the submission on time, before due date.
- Objective 3: In this pandemic this swotting classroom will provide the medium for teachers and students to communicate.
- Objective 4: To provide the medium for students to tally their attendance.

The proposed system ‘Swotting classroom’ is divided into major 3 modules which are as follows:

- Student Module
- Teacher Module
- Admin Module

Student Module

- As soon as you open the website “Swotting Classroom” there is a option for all students to login to their respective classroom by their username and passwords provided by institute.
- After the student gets login then they can see their profile details with a profile photo on the top and below there are 5 modules of their respective subjects.
- After clicking on any subject they can see 3-4 options regarding to their subjects such as subject information, assignments and quizzes.
- In the subject information section the student will get faculty name of that respective

subjects and syllabus details for the student of the respective subject

- In the assignment section the student will get all the details of the assignments and last date for submission and there is option for uploading their solution of respective assignment there they can upload their assignments.
- In the quiz section the student can attempt the quiz by their respective faculty's and submit their responses.
- The student also views their attendance of respective subjects in their respective subjects modules of classroom.

Teachers Module

- As soon as you open the website “Swotting Classroom” there is a option for all Teachers to login to their respective classroom by their username and passwords provided by institute.
- After the Teacher gets login then they can see their profile details with a profile photo on the top and below there are 2 modules of assignment and quizzes and on top there is option for uploading attendance for respective class.
- After clicking on assignment the faculty can see all the information about the previous assignment and details of all the submissions of students and also the faculty have an option for adding new assignment.
- In the attendance section the faculty can upload excel sheet of attendance for their respective subject and classes.
- On the quizzes section the faculty can see all the responses of previous quizzes and they can also add new quiz for the students.
- Admin Module
- As soon as you open the website “Swotting Classroom” there is a option for all Admin to login to their account by their username and password.
- After successfully logging in they can see all the details regarding to the students, teachers which have been enrolled and the other admin.
- After login, admin can delete or add new student and, can edit and view all the information related to a student.
- After login, admin can delete or add new Teacher, and can edit and view all the information related to a teacher.
- After login, admin can delete or add new admin, and can edit and view all the information related to an admin.

Solution Proposed

- By this swotting classroom we have provided a platform to teachers so that they give assignments to the students virtually and collect their solutions without any mess.
- By the swotting classroom we ease the work of teacher by making a quizzes section so that they can easily evaluate their students and can come to know the academic positions of students in class.

- In swotting classroom we also provide an attendance section where the teacher can upload attendance on daily basis so it is helpful for the teacher to inform students.
- By this swotting classroom we have provided a platform to students so that they get assignments from the teachers virtually and they can submit their solution on time.
- In swotting classroom we provide the student to attempt online quizzes on our website so that they test their knowledge and know their actual academic position in classroom. It also helps them to identify those parts where they need to improve on subjects.
- Our swotting classroom also provides features for students by which they can see their attendance on daily basis, because in world of online classes it's sometime doubtful that attendance is marked or not due to drop of network so they can confirm their attendance from here.

Benefits of the Proposed System

In this situation of pandemic all the sectors are suffering as well as education also got affected. In order to reduce the effect on education. Swotting classroom gives its contribution by providing a platform between teachers and students so that process of learning never stops for a student.

- **Easy to use and accessible from all devices:** Our swotting classroom can be used on any browser which makes it accessible from all computers, mobile phones, and tablets, Teacher and students will find it equally easy to log in, as well as receive and submit assignments.
- **Speeds up the assignment process:** How about creating an assignment and distributing it with just a click of a button? And how about learners submitting the completed assignment in a matter of seconds? Assignment process has never been quicker and more effective, as in Swotting Classroom you can easily check who has submitted their assignment and who is still working on it.
- **No need for paper:** There might be a day that grading papers would be impossible to imagine; Swotting Classroom is certainly interested in getting there as soon as possible. By centralizing eLearning materials on the website you have the ability to go paperless and stop worrying about printing, handing out, or even losing your students' assignment
- **Clean and user-friendly interface:** Swotting Classroom invites you to an environment where every single design detail is simple, intuitive, and user-friendly. Needless to say, users will feel right at home.

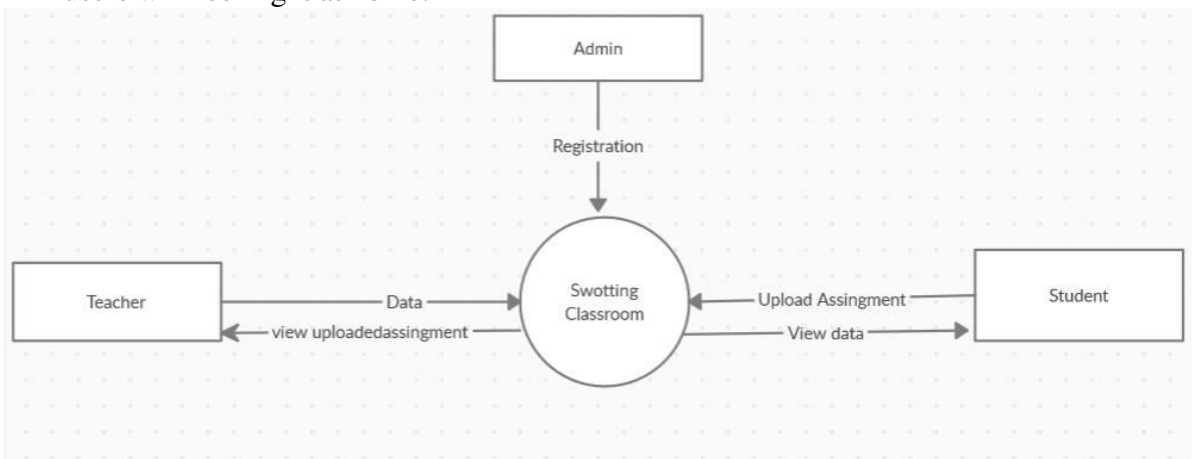


Fig.1: 0 level DFD

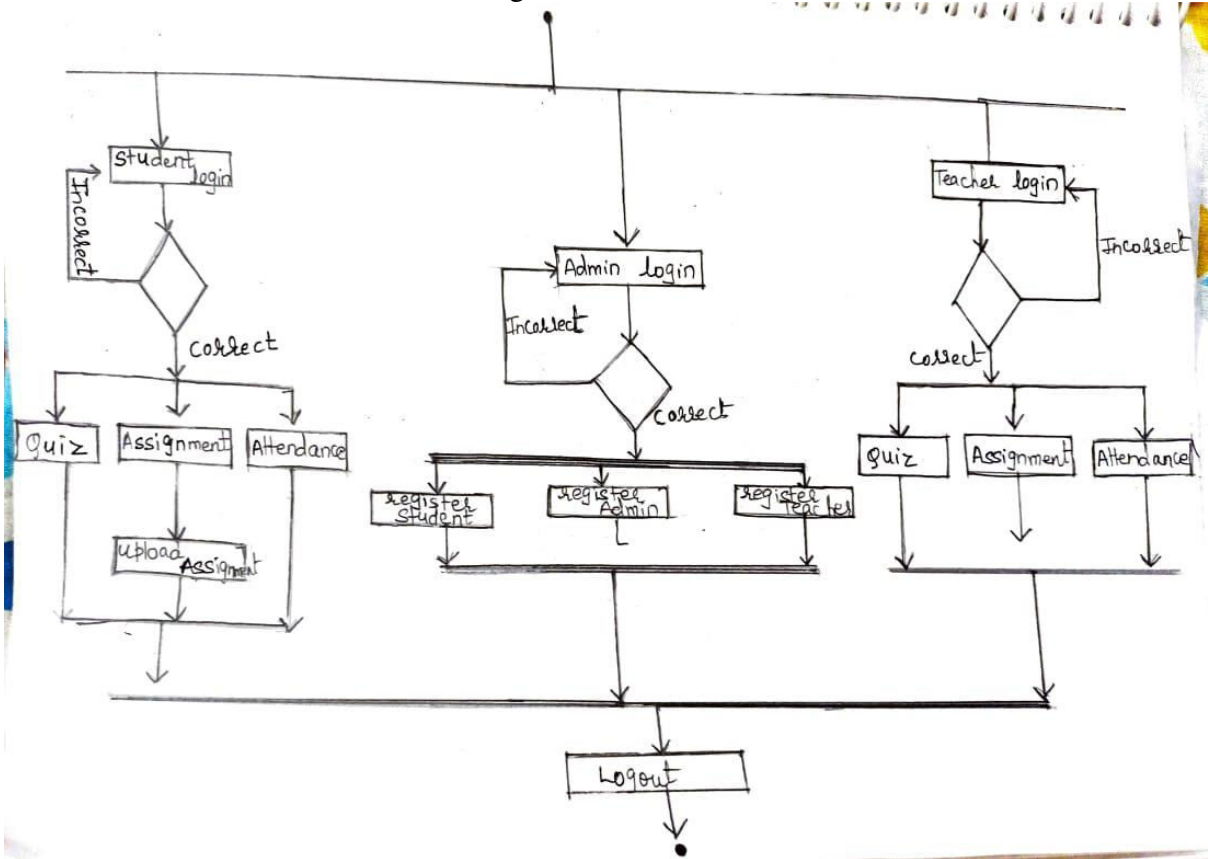


Fig.2: Activity diagram

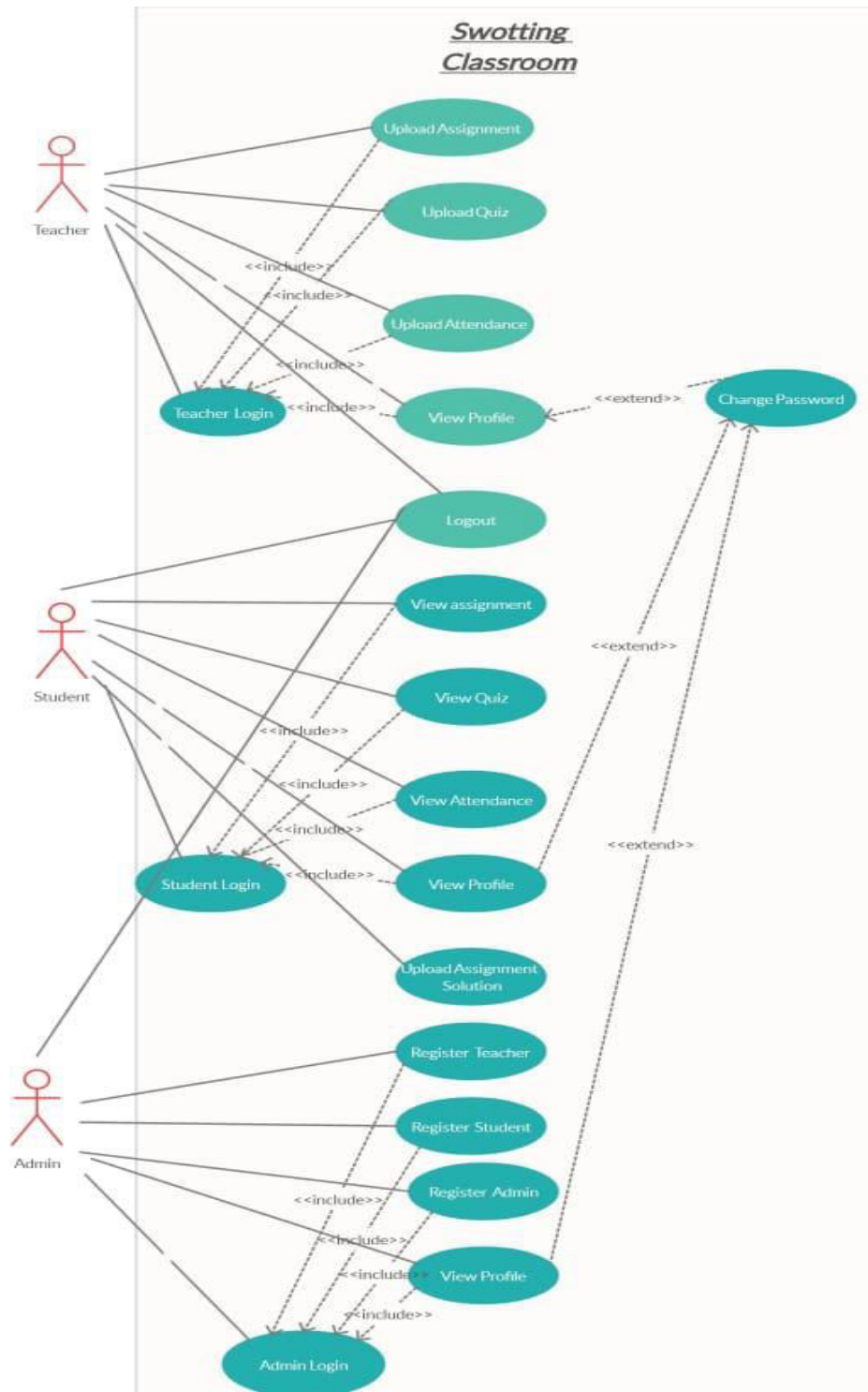


Fig.3: Use case diagram

Database Structure

The proposed system for Swotting Classroom having a single centralized database and the tables of Login, Assignment, Attendance, and Quiz will be for maintaining data uploaded by teachers and students. Following table contain the information and entity of table:

Table Name	Entities & Attributes
Login	Full name, email, phone no., parents phone no., Address, username, password, year, section, subject1, subject2, subject3, subject4, subject5, photo.
Assignment	Assignment name, question, file, date.
Attendance	File
Quiz	Quiz link.

Table 2: Database structure

Deployment Requirements:

There are various requirements (hardware, software and services) to successfully deploy the system. These are mentioned below:

Hardware Requirement:

The minimum hardware required for the development of this project is as follows:

- 64-bit, x86 Processing system
- Windows 7 or later operating system or digital device for showing page
- High processing computer system.

Software Requirement:

- Python and its supported libraries
- IDLE editor
- PyCharm IDE
- Web Browser

IV. Implementation and Results

The project can be an innovative idea in order to resolve the problems faced by students, Teachers and institutes specially in pandemic.

The project idea came by observing the current scenario of students as they have many issues related to their assignments, quizzes and many more, there is a need for a proper system which has all the features which will resolve all the current issues faced by most of the institutes of the country. In swotting classroom we have provided a platform to teachers so that they give assignments and quizzes to the students virtually and collect their solutions without any mess. In swottingclassroom we have provided a platform to students so that they get assignments from the teachers virtually and they can submit their solution on time. Our swotting classroom also provide a features for students by which they can see their attendance on daily basis, because in world of online classes its sometime doubtful that attendance is marked or not due to drop of network so they can confirm their attendance from here.

Following are the screenshots of our working swotting classroom: in this everything is covered what we are providing in our website. student login ,teacher login, admin login, student profile , teacher profile, adding new admin ,adding new teacher, adding new student, adding new assignment , adding new quiz, adding new attendance.

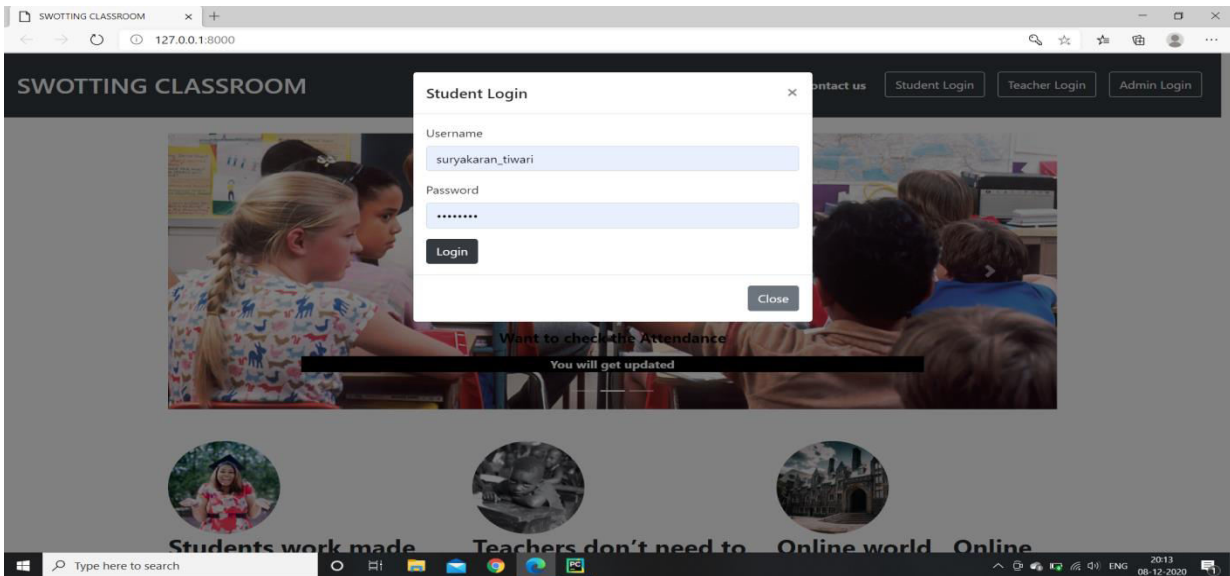


Fig.4: Student Login

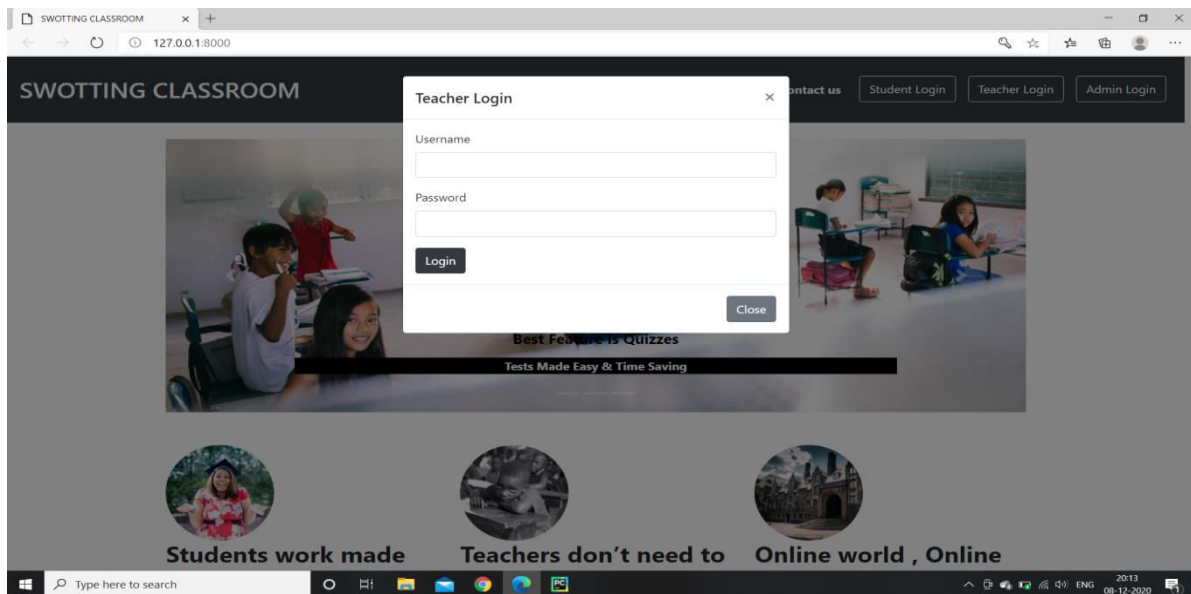


Fig.5: Teacher Login

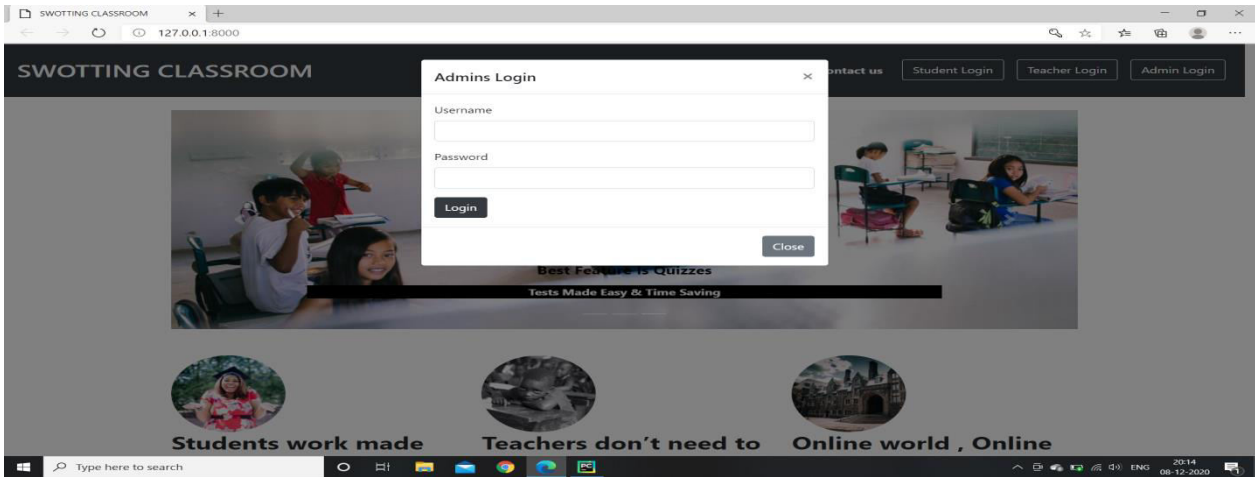


Fig.6: Admin login

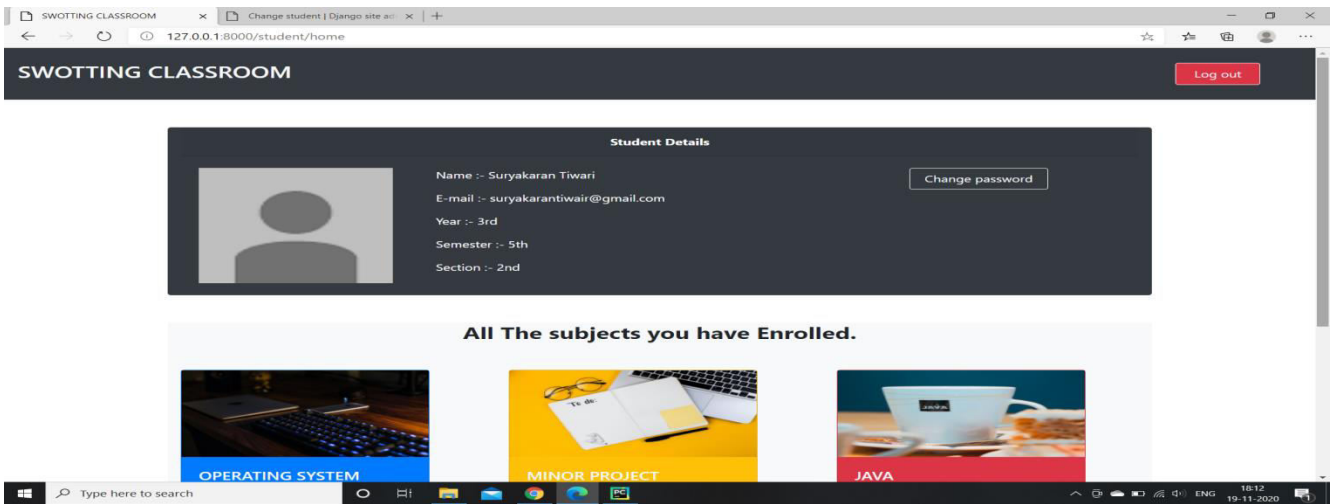


Fig.7: Student profile

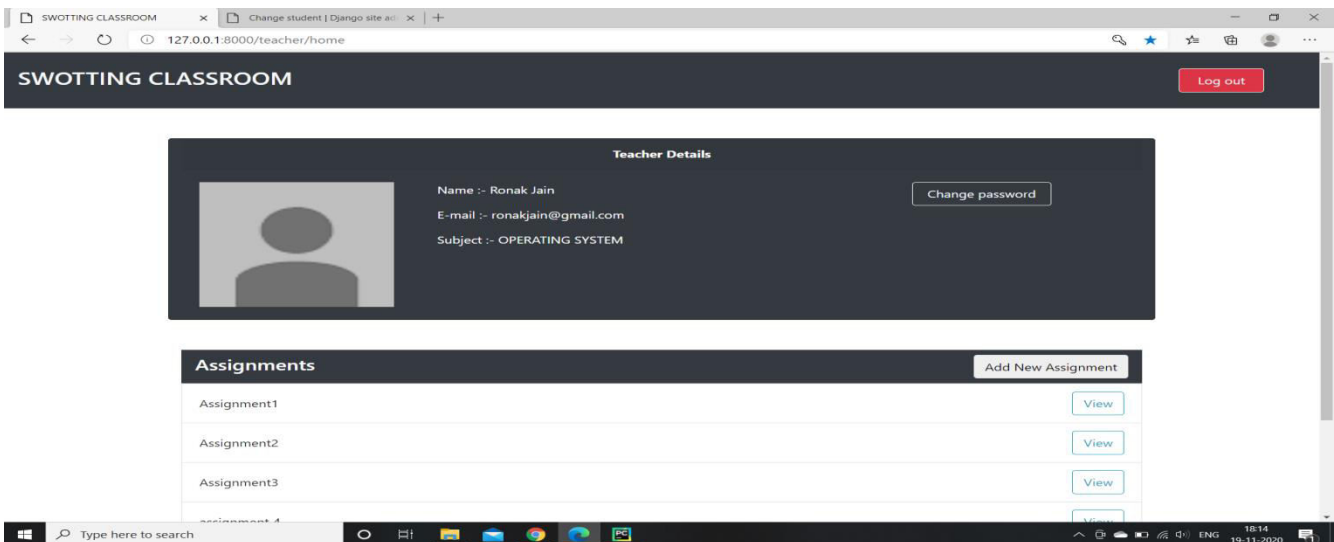


Fig.8: Teacher profile

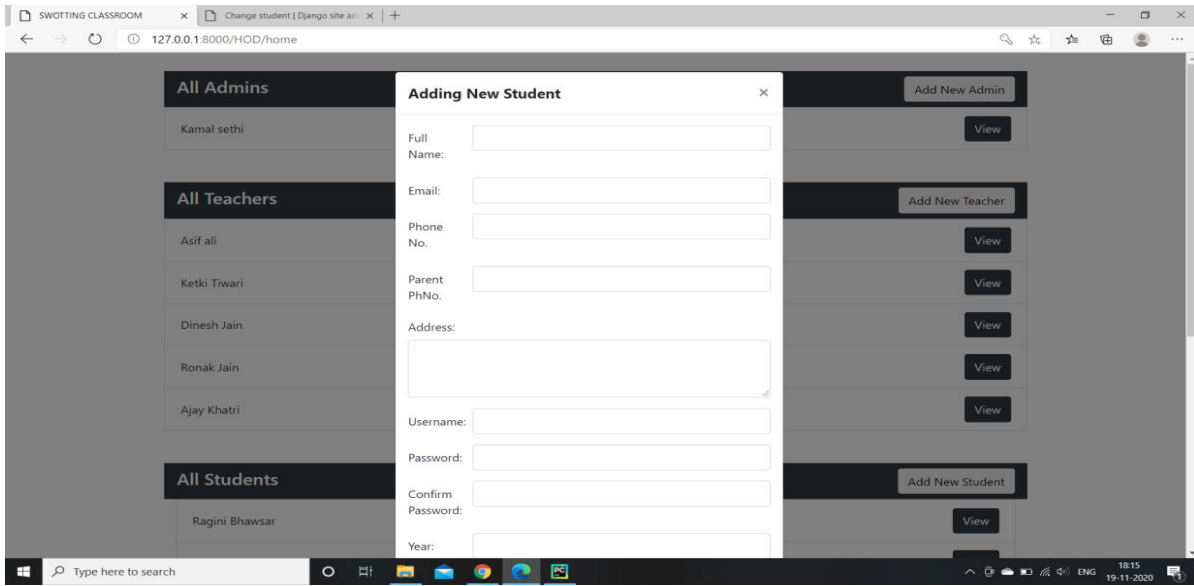


Fig.9: Adding new student

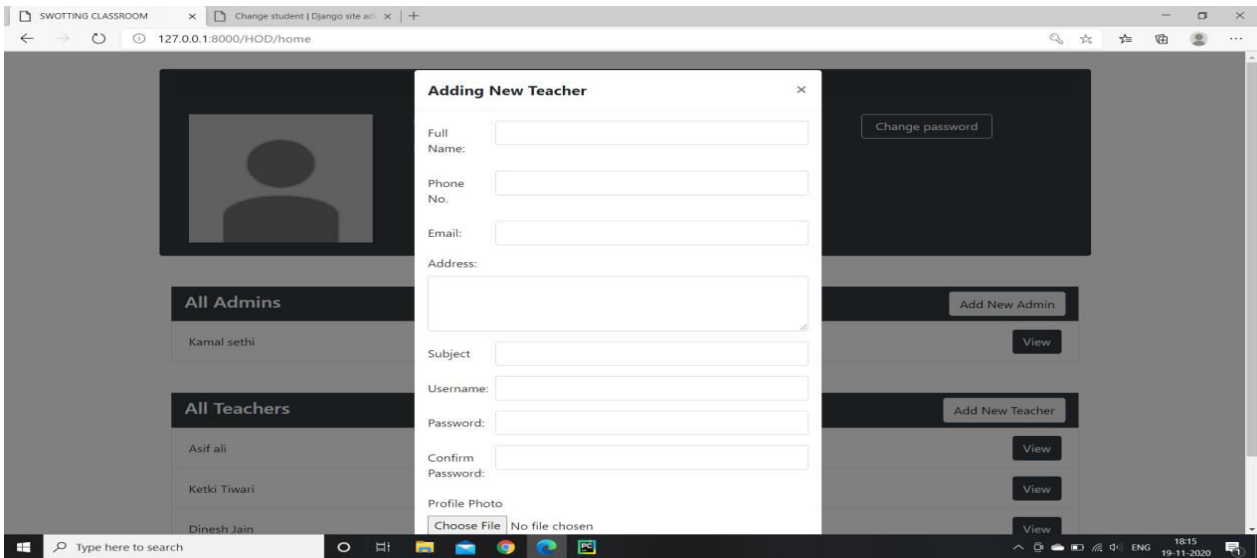


Fig.10: Adding new Teacher

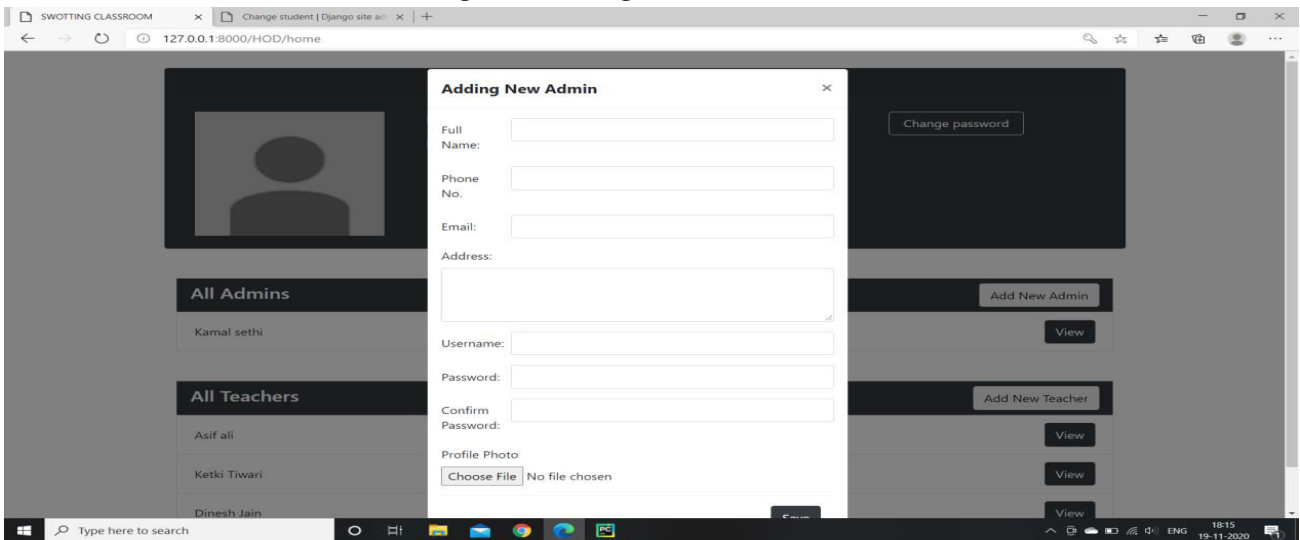


Fig.11: Adding new Admin

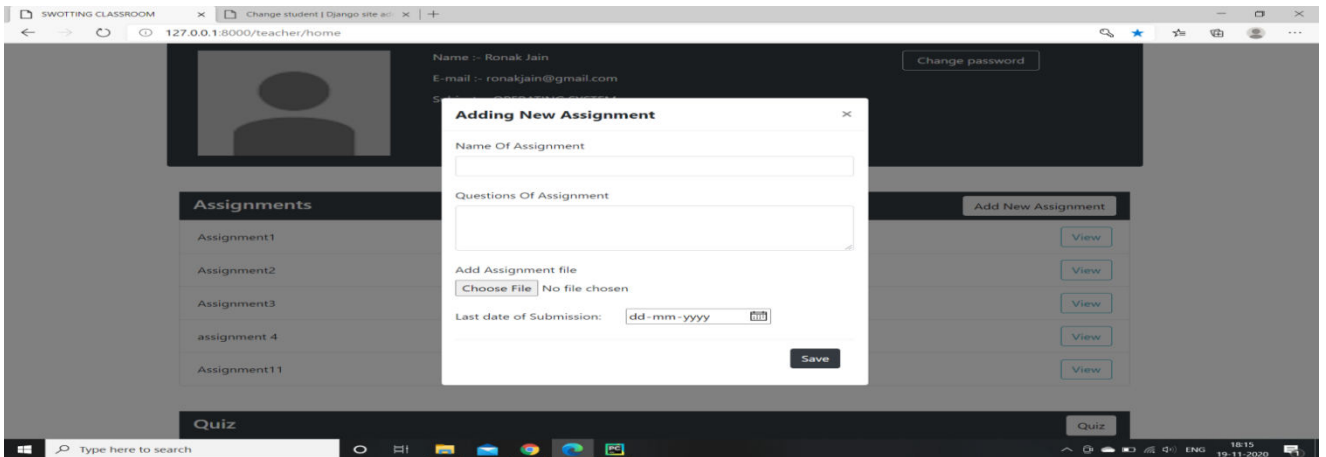


Fig.12: Adding new assignment

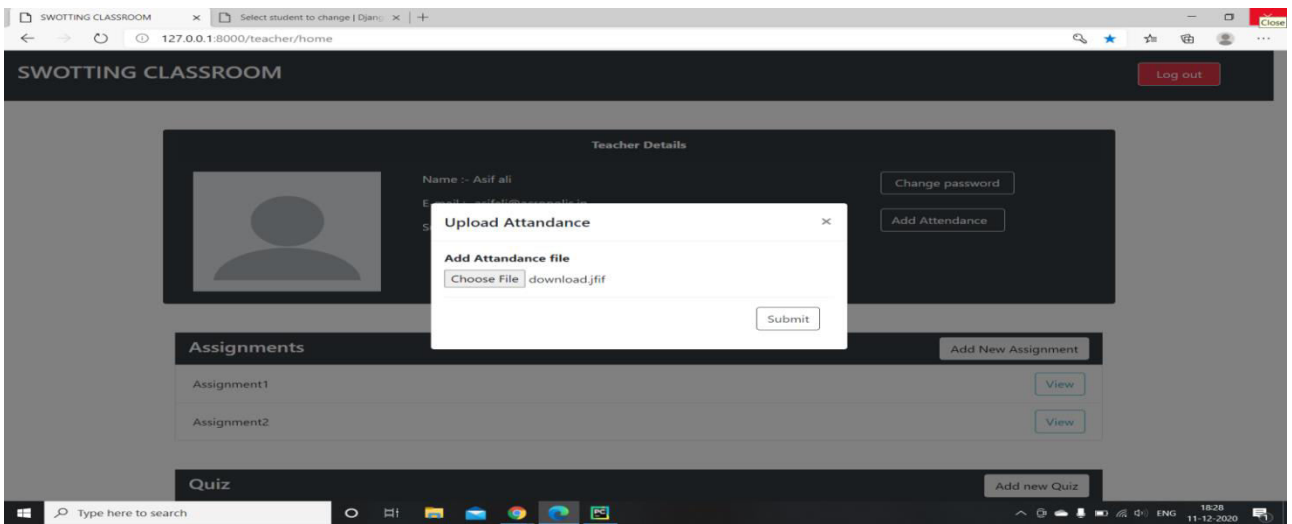


Fig.13: Upload Attendance

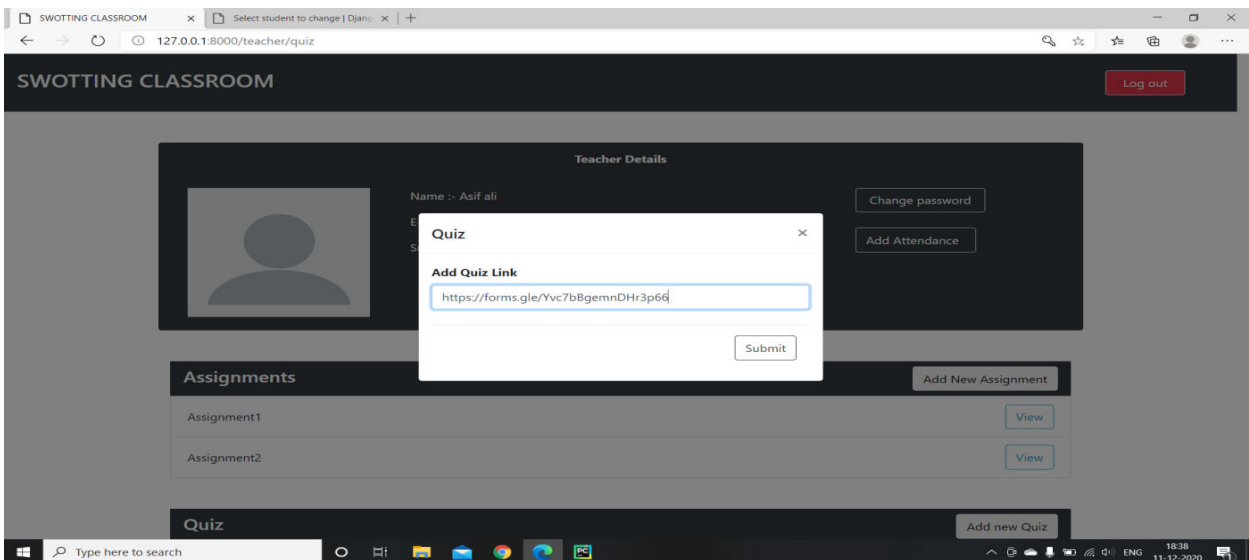


Fig.14: Upload Quiz

V. Conclusion

The proposed project is a revolutionary idea for solving problems of teachers and students, there is a need for the platform which is a virtual classroom and provide all the features such as giving and taking assignments, taking tests and providing attendance. Admin can log in and assign subjects to students and link teachers. Any teacher can give assignment and set the due date which will be visible to students and students before due date, also teachers provide quizzes and students submit it within time. Attendance can be shown to students. This system will solve the problems of both teachers and students. This solution will be very helpful for emergency situation such as this pandemic and for distance education.

Limitations of the Work:

- Internet connectivity is one of the essential requirements for the implementation of this model.
- This system does not have any other language, only English.
- There is no feature for conducting online classroom.

VI. Future Scope

In future, we will be updating the application with additional features such as online meeting by which there is no need for any other platform for conducting online class. We will give option to change the language for the people who don't understand English.

VII. Acknowledgement

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