



# COLLEGE OF ENGINEERING PUNE

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Ref. No.: COEP/INSTRU/SDA/158

**Prof. S. D. Agashe**  
**Professor**

February 22, 2021

To  
Dr. (Mrs.) J.M.Nair  
Principal,  
Vivekanand Education Society's Institute of Technology,  
HashuAdvani Memorial Complex, Collector's colony.  
Chembur. Mumbai  
Maharashtra 400 074

Dear Madam,

I am happy to inform you that under the "Virtual Laboratory" project of Ministry of Education, Govt. of India, we are developing an online system for the analysis and tracking of student's performance while performing the laboratory experiments online. This is a unique exercise which will benefit students and faculty members who will be using this facility. Under this facility the requirement gathering, question bank creation, database design, tracking mechanism, and new form of assessment will be carried out.

Looking at the expertise of few Professors from your Institute in this area, and the profile of the faculty colleagues in Information Technology department, I request you to join my project team to take up this noble initiative. I am sure with inclusion of your team we will achieve the goal set in new education policy.

Please let me know your views on this and indicate us the modalities and names of the faculty from your Institute who are willing to participate in this project honorary.

Thanking you, with regards.

Prof. S.D. Agashe

cc to: Vice Principal VESIT Chembur

Prof. (Mrs) ShantaSondur Professor, Information Technology VESIT



# Vivekanand Education Society's Institute of Technology

(Affiliated to University of Mumbai, Approved by AICTE & Recognized by Govt. of Maharashtra)

## Virtual Laboratory Project (Of the Ministry of Education, Govt. of India)

**Title:** Online system for the analysis and tracking student's performance while performing the experiments online.

**Ref:** Your request letter COEP/INSTRU/SDA/158 Dated: February 22, 2021 addressed to the Principal and Vice Principal, VESIT.

**Collaboration with:** Department of Instrumentation and Control Engineering of COEP.

**Flow of the projects agreed mutually:**

1. Project idea will be discussed
2. Requirement documents will be mutually finalized
3. Technology stack will be demonstrated
4. Actual working on phase 1 will commence, wherein students will create question bank based on the subject matter expert and interface with database
5. In the second phase testing will be done using practice test. Further matrix-based question paper based on individual participants' performance (using AI and ML) will be completed
6. In the third and last phase the randomization of questions, load time for concurrent users, server requirements, and network issues will be addressed and resolved.

**Objectives:**

1. Requirement gathering
2. Question bank generation
3. Database design
4. Development of Tracking mechanism
5. Development of performance analysis module

**Activities done so far:**

1. Offered ongoing internship to the students of second and third year and is going on.
2. Offered internship to the students of third and final year students during summer break.
3. Plan to offer the same to AI and DS students as well.





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## Current status

1. The project started in the academic year 2020-21 with a student group consisting of 25+ students from then Second year and Third year under the Project head Prof Shanta Sondur and Mrs. Charusheel Nehete faculty members of the IT department.
2. The entire team is divided into two groups. One group of students will work on a database generation module and the second group of students will work on development of Prototype.
3. The first group could complete the database generation for the module 0301- (030101, 030102), 0302 - (030201, 030202, 030203), 0303 and 0304 - (030401, 030402 out of 7) - @40 percent.
4. The second group, the current final year students, have started developing the Question paper generation, hand holding, navigation and Performance analysis.
5. The frontend will be provided by the COEP team, the work of development of an API between the backend and frontend is in progress. The requirements of the App is given by the COEP academic team.

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