


Report on Virtual Laboratory Development

Department of Physics, Bajaj College of Science, Wardha in association with Bajaj Science Centre, Wardha had organized an online event to have hands on online laboratory tool between 20th to 31st May 2021. The event is organized taking into consideration the current situation due to covid-19 pandemic. Students are stuck in their homes; they don't have access to laboratories and science without laboratory can't be imagined. Many online tools are available with the students to perform laboratory practical by virtual simulations but the process behind this virtual simulation is not known to students. This event is one of such initiative to understand the process behind virtual simulation and students can make their own simulations and obtain data to understand the science behind it. Students also have given exposure to python language and google collabs. The guest of honour and trainer for the sessions are Mr. Suresh Parekh (Co-founder Infinoscope Magazine) and Mr. Harshal Sanghavi (Research Scholar, Florida Atlantic University, USA) joining from US.

The introduction of the program is done by Dr. Mangesh Yerpude. Dr. Sanjay Bagade head of department physics has welcomed the guest and have given inaugural speech. He has pointed out the importance of laboratory and practical in science. Dr. Govinda Lakhotiya have introduced the guest Mr. Harshal Sanghavi. Mr. Harshal Sanghavi started the session with his ideas of virtual lab. He has started with how to think critically. He has shown several situations and asked questions to the students so that they can think about the problem and can develop their own way to solve that problem. The first day of the program is full of entertainment and brain storming. Mr. Harshal with his skills have developed interest in the minds of students and those students who are always shy in speaking have answered according to their understanding. The program ends with formal vote of thanks by Dr. Sudhir Tiple.

The event is a 11 day program with total 6 sessions between 20th to 31st May 2021. Total 75 students have registered for the event out of which 25 students are selected. For the event students are required to have their own PC or laptop throughout the session thus the number of participants are limited. The participants are from different age group and from different institutes. 10 students from Bajaj Science Centre, Wardha of class 8th and 9th, 15 from Bajaj College of Science, Wardha and 10 from Bajaj Institute of Technology have selected for final sessions. Students from Bajaj Institute of Technology are added later to provide technical support to other participants as they are not familiar with such platforms. The program is divided in to 6 sessions every alternate day, and students have given the task after every session. The first session was engaged by Mr. Harshal Sanghavi and have introduced the concept of virtual lab to the students. Many students have first time seen such virtual experiments. They answered some of question which were asked by the speaker. Students have taken interest and asked many of their doubts which were solved by eminent speaker. Dr. Govinda Lakhotiya started second session with the introduction of guest. Mr. Suresh Parekh had joined from Ahmadabad, Gujrat and he was the speaker for later sessions of this virtual lab development event. Mr. Suresh Parekh started with some basics of python. The python is a computer language that needs to be understand first to make simulations possible. The second and the third session is completely dedicated to learning python and running some codes. For these sessions free tool googlecolab from google is used. He has introduced all the steps involved in developing successful simulation. Selection of problem, understanding science behind it, literature survey and solution to the problem are few important steps. In the coming sessions the problems were converted to the actual simulations. Several doubts have also solved coming in the minds of students before proceeding to next steps. Students have given tasks to perform. In the coming days participants were divided into groups to develop their own virtual lab.




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