

Sardar Patel Institute of Technology
(An Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (West), Mumbai-400058-India
Electronics Engineering Department
Subject: Analog Circuits ET205 SEM: IV Academic Year: 2020-21

Virtual Laboratory to perform experiments on Electronics Circuits and Systems

Date: 6th April 2021

Purpose of the activity:

A strong laboratory component is at the heart of all the Engineering Disciplines. It is a challenging job to provide an effective lab experience students under several constraints, such as:

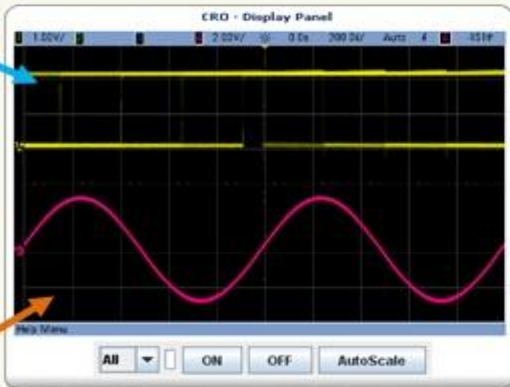
- Limited availability of costly equipment.
- Physical distances involved.
- Restricted, or no access to labs beyond the regular labs.
- Limited availability of expertise required to develop experiments and related study materials.
- Requirement for regular update of experiment as per current demand of the industry.
- During pandemic when access to hardware lab is not possible

The screenshot displays the e-VALIDATE Remote Triggered Lab interface. At the top, there is a navigation bar with 'Home', 'Know more about', 'Available Videos', and 'FAQ's'. On the right, it shows 'Camera' and 'Logged in as manas'. The main interface is divided into several sections:

- Function Generator - Output:** Shows a control panel with 'CRO', 'FD', and 'Refresh' buttons. It displays three meters: P6 (0.000V), P25 (00.00V), and N25 (0.000A).
- Power Supply - Output:** Shows three meters: P6 (0.000V), P25 (00.00V), and N25 (0.000A).
- CRO - Display Panel:** Shows a waveform display with a yellow sine wave and a pink sine wave. The display includes a 'No Menu' indicator and 'ON', 'OFF', and 'AutoScale' buttons.
- Experiments List:** A dropdown menu is open, showing a list of experiments including 'Astable Multivibrator', 'Differentiator', 'Diode Clamper', 'Diode Clipper', 'Diode Half Wave Rectifier', 'Diode Limiter', 'Full wave rectifier', 'Half wave rectifier using Op-amp', 'Schmitt Trigger', 'Inverting Amplifier', 'logarithmic Amplifier', 'Non-inverting Amplifier', 'Pushpull Amplifier', 'RC-Differentiator', 'RC-Integrator', 'Voltage Follower', 'Integrator', 'AM Detector', and 'Error Amplifier'. A blue arrow points to 'Astable Multivibrator'.
- Lab Setup:** A breadboard diagram shows the circuit components for the Astable Multivibrator, including resistors (R1, R2, R3), capacitors (C1, C2), and an IC 555 timer. A pink arrow points to the 'Astable Multivibrator' dropdown.
- Control Panel:** Includes buttons for 'Reset', 'Load', 'Cloud', 'Verify', 'Check Circuit', 'VLog', 'Help', 'Run', 'Log', and 'Simulate'.
- Live Chat Support:** A 'Live Support' button is shown, currently 'OFFLINE'.

Function Generator - Output **Power Supply - Output**

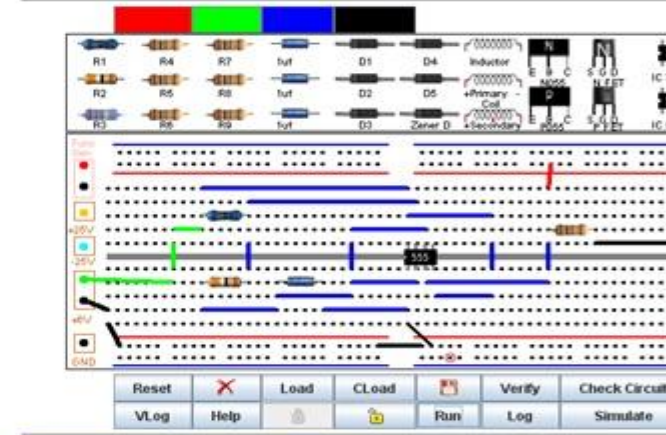
This panel shows the output status for a Function Generator and a Power Supply. It includes three meters labeled P6, P25, and N25. Below the meters are three buttons: CRO, FG, and Refresh.

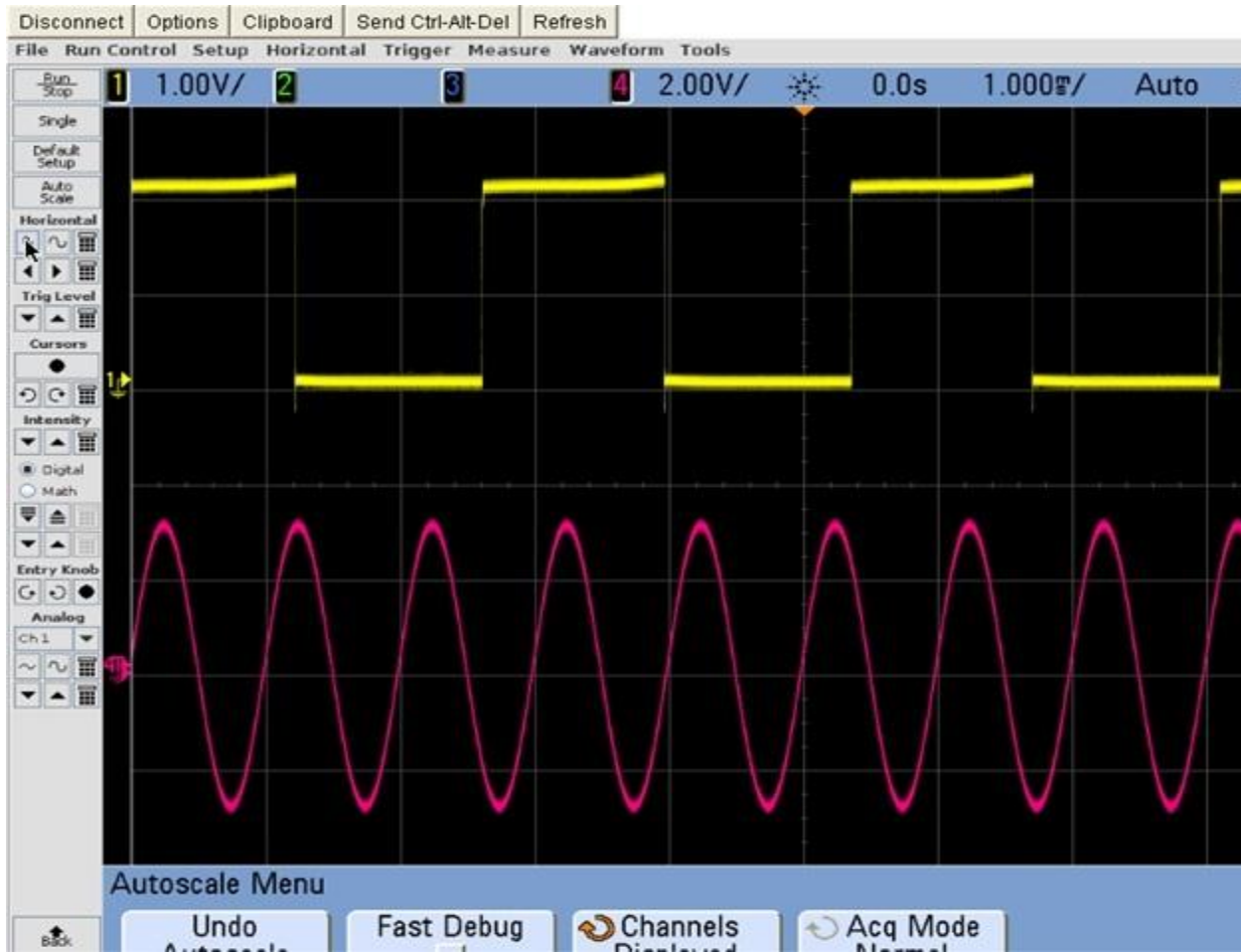


Live Chat Support
Please leave a message
Live Support
OFFLINE

e-VALIDATE Remote Triggered Lab

Experiments: Astable Multivibrator Lab: 1
Custom Saved: 57
Description: Astable Multivibrator

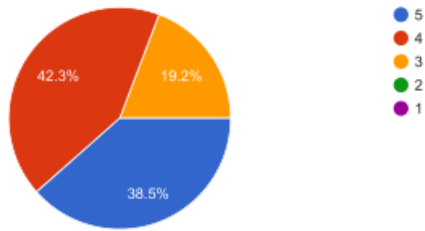




Feedback:

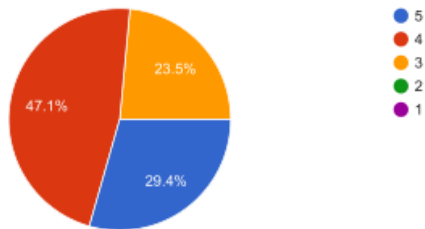
How would you rate the use of open source tools and platforms to perform Experiments in online mode?

26 responses



Rate the demonstration of Virtual lab platform for conducting hardware laboratories.

17 responses



Outcome:

After successful demonstration of the platform, Prof. Goutam Kumar, Incharge of this evaluate Lab is requested to give the access to Hardware access to perform few more experiments using this platform. This activity can be conducted as a part of any other subject where Hardware experimentation is must.