The Help Book

Documentation for using Virtual Lab website

Introduction:

Welcome to the Virtual Lab website, an online platform that allows users to learn, experiment and explore various scientific topics. This documentation provides a comprehensive guide on how to use the website, navigate through different pages and take advantage of its features.
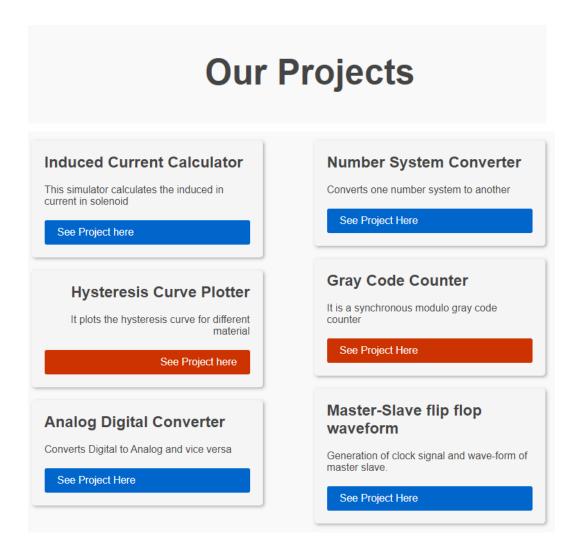
Page 1: Home page

The home page of Virtual Lab website serves as the entry point for users. The home page gives an overview of the virtual lab. In the navigation bar you can explore three more sections "Our Projects", "Our Team" and "Help".

Page 2: Our Projects

The Our Project page lists the projects available in the Virtual Lab website. There are total 6 projects listed:

    i)   Induced Current Calculator
    ii)   Number System Converter
    iii)   Hysteresis Curve Plotter
    iv)   Gray Code Counter
    v)   Analog Digital Converter
    vi)   Master Slave flip flop Waveform

Our Projects

Induced Current Calculator

This simulator calculates the induced in current in solenoid

See Project here

Number System Converter

Converts one number system to another

See Project Here

Hysteresis Curve Plotter

It plots the hysteresis curve for different material

See Project here

Gray Code Counter

It is a synchronous modulo gray code counter

See Project Here

Analog Digital Converter

Converts Digital to Analog and vice versa

See Project Here

Master-Slave flip flop waveform

Generation of clock signal and wave-form of master slave.

See Project Here

Quick Guide:

On clicking the "See Project Here" section of each project, you get to the project and simulate it easily.

1. **Induced Current Calculator:**
   This simulator calculates the induced current in solenoid. User inputs number of turns in solenoid, length of solenoid(m), Area of solenoid, resistivity of solenoid, Pole strength, length of magnet, velocity of magnet, distance of magnet from solenoid(m). After clicking submit user gets the required magnetic field, Induced EMF and Induced current as output.

2. **Number System Converter:**
   This project converts number from 1 number system to another. There are total 4 number systems in which user can convert interchangeably.

3. **Hysteresis Curve Plotter:**
   This simulator plots the Hysteresis loss curve(B-H curve) for different materials. There are total 3 materials to choose from.
   i)   Hard Steel
   ii)   Wrought Iron
   iii)   Silicon Steel

   Choosing the material will give you desired Hysteresis loss curve.

4. **Gray Code Counter:**
   It is a simulator of Mod10 Synchronous Gray code counter. User can increment and decrement the count and the current and next state will be shown as output.

5. **Analog Digital Converter:**
   This simulator converts an Analog value into digital and vice versa.

6. **Master slave flip waveform:**
   By giving data input, this simulator generates a clock signal and waveform of master slave flip flop.

Page 3: Our Team

This page gives complete details of team-members who developed this website. It gives a brief about project-wise contribution of each team member.

Our Team

Prathamesh Pawar

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Student at Indian Institute of Informational Technology Vadodara International Campus Diu , contributed in master slave flip-flop waveform .

Nilesh Phapale

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Student at Indian Institute of Informational Technology Vadodara International Campus Diu , contributed in Hysteresis curve and Induced current calculator.

Prachi Gurav

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Student at Indian Institute of Informational Technology Vadodara International Campus Diu , contributed in gray code counter.

Pradyot Soni

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Student at Indian Institute of Informational Technology Vadodara International Campus Diu , contributed in Analog-Digital Convertor and also designing of this website .

Param Prajapati

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Student at Indian Institute of Informational Technology Vadodara International Campus Diu , contributed in Number System convertor and also designing of this website .

Conclusion:

The Virtual Lab website provides a user-friendly platform for learning and exploring various scientific topics. Use this documentation as a guide to navigate through the different pages and take advantage of the website's features. If you have any questions or concerns, please don't hesitate to go through the website's Help page.