

# Web Simulations Using Modelica for VLABS



## AIM

We aim to create a simple solution for a workflow to create simulations and models and publish them onto the web.

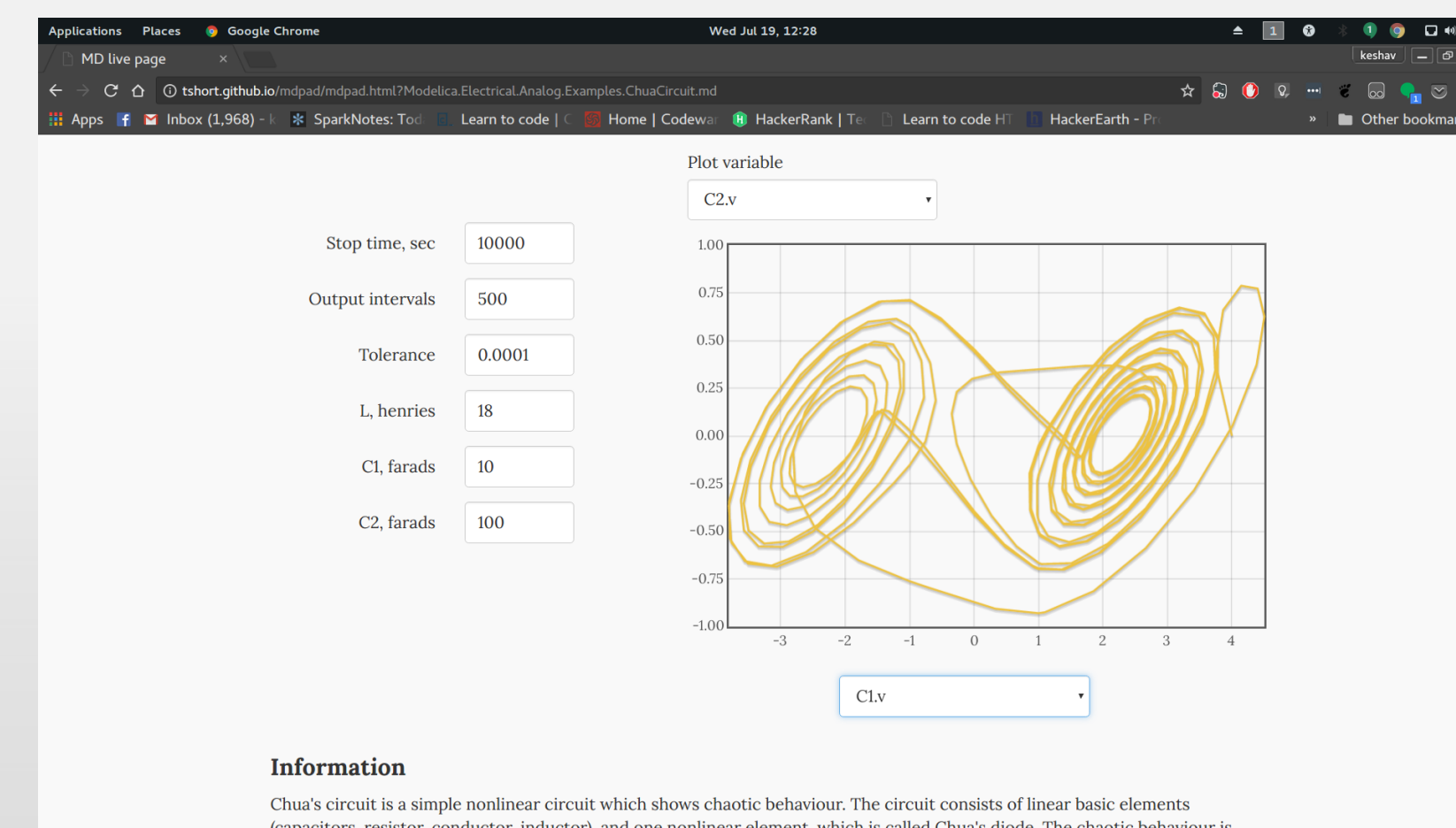
The specifications are to cater to a wide variety of audience, ranging from people with little to no programming experience to experienced programmers.

## METHODS

The following methods have been worked out for the aforementioned purpose.

### Converting Modelica to Javascript

OpenModelica's backend supports compilation with Javascript so this is the easiest and most user friendly way for development but is also the hardest to implement



### Remote Desktop in a Browser

This method involves translating an RDP connection over HTTP to enable OpenModelica use in browser



## INTRODUCTION

The project involved writing tools to make the entire process of accessing and creating a virtual lab entirely seamless with minimal user interaction. The project focused mainly on Methods 1 and 2 listed before.

## RESULTS

We were successful in implementing RDP on the web. The JS transpilation approach entailed more compilations. The details of the implementations and solutions can be found at :

<http://github.com/keshavkms/WebSimulation>

## CONCLUSIONS

Getting simulations online is a vital part of any online lab and we believe leveraging the modelica platform is the best way to do so that exploits the industry standard modelling methods that render the platform truly neutral.



Developers name: Keshav Krishnamurti, IIIT Hyderabad  
Under Prof. Maruthi Rao

## METHODS

### Wrapping Modelica in a python shell

This is an intermediate method in difficulty and uses a python interface to be used online using Jupyter Notebooks