FOSSEE Summer Internship 2017

Project: Simulation Virtual Labs

Problem Statement 1

Choose an already existing **lab course** from your academics. It can be of any discipline/domain. Create a Virtual Laboratory for **one** of the experiment that is taught in that Lab course. For example, you can create a virtual lab to simulate a Microcontroller/Microprocessor to demonstrate/simulate how the assembly language affects the states of its internal registers. To know what is a Virtual Laboratory, visit the website vlabs.iitb.ac.in

Although you are expected to do this task using Python-Django, solutions made using JavaScript will also be accepted. You may use additional technologies wherever necessary but it should not replace Python-Django/JavaScript. Usage of proprietary software is **NOT** allowed. The solution must be completely browser based without the need to run any platform dependent executables for using the virtual laboratory interface. Once hosted, it should be readily accessible via a web browser. Finally, your virtual laboratory should have a minimum of one experiment.

Problem Statement 2

Background: We have been looking into embedding Virtual Labs inside Edx. For this, we have build an Xblock(Plugin) which takes the lab title, course name and experiment URL as input and generates a widget on the user interface which creates a iframe interface for embedding an experiment webpage. We now need to relay progress and performance information of an individual experiment from the virtual labs server embedded in iframe, back to edx.

Work: As a start, figure out how to share quiz performance data between two independent edx installations. For this you might have to create a dummy course and quiz data.

You can use the following links :-

- https://github.com/edx/
- https://github.com/edx/edx-platform
- http://edx.readthedocs.io/projects/xblock-tutorial/en/latest//

- http://xblock.readthedocs.io/en/latest/

General Instructions:

1. You are expected to do any **one** of the problem statement
2. Any sort of plagiarism will lead to disqualification
3. The solution must use only open source tools
4. Queries of any kind should be mailed to sbhs@os-hardware.in

Code submission

1. Create a private Bitbucket repo. The name of the repo should be- (your) First nameLast name-vlabs (for example harishgudi-vlabs). Add **rupakrokade** as a collaborator to your private repo. Any repo with public access will be rejected.
2. Submit your Bitbucket repo details here- https://goo.gl/aLRo91 Code submitted through email will be rejected. Please look at online resources to learn how to use Bitbucket. If you have any doubts, please email to sbhs@os-hardware.in Email sent to any other email address will not be answered. The deadline to submit the Google form is one week from the date of announcement. This deadline will be strictly enforced. Emails asking for extensions will be ignored.