

# BOOTATHON

BOOTcamp + hackATHON for Virtual Labs I

4 - 10 NOVEMBER 2019

@ REC BANDA

[bootathon.recbanda.ac.in](http://bootathon.recbanda.ac.in)

Coordinated & Supported By ...



IIT BOMBAY



IIT KANPUR



IIT DELHI



REC BANDA



TEQIP III

## INFORMATION HANDOUT

## 1. About

### a. About Bootathon.

#### i. Overview

- Bootathon is a combination of Bootcamp & Hackathon. We will have specialized training program for the enthusiastic Instructors and the curious student programmers.
- Develop a skill set and put them into practice, test them through a challenge and prove what you have learned !
- The winners become a trendsetter in transforming the lab education.

#### ii. Motivation

- The NMEICT Virtual Labs project has at this time created ~100 labs (1 Lab is a collection of 8-10 experiments) covering concepts in various engineering and science curricula. These can be accessed at [vlab.co.in](http://vlab.co.in)
- However, there remains a need for additional content to be created, primarily to fill gaps in syllabi, but also towards developing improved versions of content already hosted. Consequently, we encourage Lab Developers to come forward to develop such content. To facilitate the creation of such content, we are conducting this Bootathon.

#### iii. The Expected Outcome

- Participants ( both Faculty and Students) will be creating new experiments and their creation, shall be hosted live during the Bootathon on the Community Portal Vlabs-Dev [vlabs.iitb.ac.in/vlabs-dev/](http://vlabs.iitb.ac.in/vlabs-dev/) ; The Teams shall be mentored by the Expert Mentors
- We expect that this will enable collaborative development of content, with Developers both seeking and sharing best technology and pedagogy practices.

#### iv. The competition

- The teams have to arrive one day before the event day.
- There will be Mentors and Resource persons who shall give lectures, Tips and Tricks to perfect their Experiment even more.
- 1 Day will be given to improvise their experiments even better.
- Teams shall have to start developing the 2nd experiment.
- Given the experience the teams have in developing the first experiment, they can move towards completing the 2nd Experiment and can move to 3rd experiment when the 2nd one is completed.
- It is a time-based event, teams shall be evaluated on the basis of most number of experiment.

#### v.

#### vi. What do you get ?

- **Participation**
  - a. Teams completing the development with, a Mentor & Reviewer rating of 5 out of 5 for exactly **1** experiment, all the team members get a Certificate of **Participation**
- **Silver**
  - a. Teams completing the development with, a Mentor & Reviewer rating of 5 out of 5 for exactly **2** experiments, each member gets certified with a **Virtual Labs SILVER Developer**
- **Gold**

- a. Teams completing the development of exactly **3** experiments, each member gets certified as with a **Virtual Labs GOLD Developer**
  - **Platinum**
  - Teams completing the development of an entire lab consisting of at least **5** experiments **or more** experiments, each member gets certified as with a **Virtual Labs PLATINUM Developer**
  - PLATINUM Certified Developers also gets an opportunity to:
    - 1. Become **Experts** for the future BOOTATHON, shall be invited by Virtual Labs nationally, for the development efforts.
    - 2. Opportunity to serve as a **Reviewer** on Vlabs-Dev, reviewing national level Vlabs development.
- b. **About Virtual Labs**
  - i. Virtual Labs project is an initiative of Ministry of Human Resource Development (MHRD), Government of India under the aegis of National Mission on Education through Information and Communication Technology (NMEICT)
  - ii. All students and Faculty Members of Science and Engineering Colleges who do not have access to good lab-facilities and/or instruments.
  - iii. High-school students, whose inquisitiveness will be triggered, possibly motivating them to take up higher-studies. Researchers in different institutes who can collaborate and share resources.
  - iv. Different engineering colleges who can benefit from the content and related teaching resources.
  - v. Virtual Labs do not require any additional infrastructural setup for conducting experiments at user premises. The simulation-based experiments can be accessed remotely via the internet.
  - vi. All the Labs can be accessed the central portal [vlab.co.in](http://vlab.co.in)
- c. **About REC Banda**
  - i. Rajkiya Engineering College, Banda was established by the Government of Uttar Pradesh in the year 2010 with three branches, Electrical Engineering, Mechanical Engineering, and Information Technology with an annual intake of Sixty (60) in each branch.
  - ii. The college is also a constituent institute of Dr A P J Abdul Kalam Technical University, Lucknow (Formerly Uttar Pradesh Technical University, Lucknow).
  - iii. The college has moved to its own fully residential campus located at Atarra, Banda in the month of July 2015 and all academic activities from the session 2015-16 are being carried out at its own campus.
  - iv. The fully residential campus of the college consists of Academic Building, Workshop, Five Hostels (Boys and Girls), Residential Apartments, Student Activity Centre, College Canteen, Grocery Store and other facilities for recreation.
  - v. View more details on <http://recbanda.ac.in/about-the-institute/>

## 2. Dates

- a. **Registration Deadline**
  - i. **19 September : Registration Opens**
  - ii. **19th October the Last date to register :**
  - iii. <http://bootathon.recbanda.ac.in> Visit this site to register your team ( open only for faculties and students affiliated to the colleges established in India )

- iv. **Note :** Since there is a **pre-registration step** (see below )which includes online **training and tasks**, prospective teams may take a few days to complete the registration process. Therefore, prospective teams are requested not to wait until the last date to register.

**b. Pre-Bootathon**

- i. **19th October - 31st October :**  
ii. Teams which have finally registered and paid the fees shall, undergo a one-on-one, online mentorship, for 12 days, by the Mentors assigned to them.

**c. Main Event**

- i. **4 - 10th November.**  
ii. Since the Bootathon begins from 7 am on 4th October and end at 9pm on 10th October, all teams need to **arrive on 3rd Oct** and must **depart on 11th October**. You are requested to plan your travel accordingly.

**d. Post-Bootathon**

- i. **30th November**  
ii. Teams achieving GOLD certification within 7 days of the Bootathon, shall be allotted 20 Days to submit the rest of the 5-7 experiments.  
iii. Team members shall be then certified as a **Virtual Labs PLATINUM Developer**

**3. Fees**

**a. Fees Structure**

**i. Team Fees (1-faculty and 4 students)**

- The total fees a team has to pay once they have been selected after filling the registration form :
- **Faculty : INR 950**
- **Student : INR 450 / student**
- **Total Fees / Team : INR 2750**
- The sum total of IN 2750 has to be paid at once, through a single transaction. The receipt shall be generated as per the billing details mentioned during the transaction.
- If required, individual participants shall be given receipts upon arrival at the event.

**ii. When to be paid ?**

- The fees are to be paid within 3 days, only upon confirmation of their selection for the Bootathon. (a notification shall be sent to them by the organisers)
- To increase your chances of selection, make sure you have completed your tasks well.

**b. What's included ?**

- i. Fees includes the following.  
ii. **Registration Kit :** Stationeries, Badges, Folders.  
iii. **Accommodation :** Accommodation for 8 Days ( from 3rd till 10 th 10th November  
iv. **Food:** Breakfast, Lunch, Snacks & Dinner from 4 to 10th November  
v. **Certificate :** The certificate as per the (mentioned in the about section) achieved by the team.

**4. Registrations**

**a. Who can Participate ?**

**i. Faculties**

- Faculties from Any Discipline of Science, Engineering & Polytechnic. ( no programming experience required)

**ii. Students Category 1**

- Students must belong to the same discipline as the participating faculty in the team.
- iii. **Students Category 2**
- Students from Computer Science, Information Technology or any other related field with sound knowledge of programming ( Preferably HTML, CSS, JS, GIT, Web Graphics and must have a good hold on math functions).
- b. **Build your Team**
- i. **Team Structure**
- Team of 5 members
  - 1 Faculty from **any discipline of Science, Engineering, Diploma.**
  - 1 Student from the same domain as of the faculty
  - 3 Students from Computer Science, Information Technology or any other related field with sound knowledge of programming ( Preferably HTML, CSS, JS, GIT, Web Graphics and good hold on math functions).
- c. **Pre-Registration**
- i. **Training**
- Both Faculty and students need to take the coursework listed and submit a task during the registration.
  - **For Faculty**
    - a. **MOOC**
      - i. Faculty need to take an online Coursework on Pedagogy, Storyboard , Lab Manual :  
<http://vlabs.iitb.ac.in/vlabs-dev-mooc/mooc-playlist.php>
        1. TEMPLATE Worksheet. ( Pedagogy, Storyboard, Lab Manual )
        2. Documentation booklet  
<http://vlabs.iitb.ac.in/vlabs-dev/document.php>
      - ii. **GIT** : some basic GIT knowledge <http://bit.ly/GIT-Basics-1>
  - **For Students**
    - a. **Student Category 1**
      - i. **MOOC**
        1. Faculty need to take an online Coursework on Pedagogy, Storyboard , Lab Manual :  
<http://vlabs.iitb.ac.in/vlabs-dev-mooc/mooc-playlist.php>
        2. **GIT** : some basic GIT knowledge <http://bit.ly/GIT-Basics-1>
        3. **Basics of HTML CSS & JS** : To be added.
          - a. Video 1 : [http://bit.ly/HTML-CSS-JS\\_Basics1](http://bit.ly/HTML-CSS-JS_Basics1)
          - b. Video 2 : [http://bit.ly/HTML-CSS-JS\\_Basics2](http://bit.ly/HTML-CSS-JS_Basics2)
    - b. **Students Category 2**
      - i. **MOOC**
        1. **HTML5 Canvas**
          - a. : <http://bit.ly/HTML5-Canvas>
        2. **Javascript** :
          - a. <http://bit.ly/Javascript-Basics>
        3. **SVG animations**
        4. **Inkscape**
          - a. <http://bit.ly/Inkscape-Basics-1>
          - b. <http://bit.ly/Inkscape-Basics-2>

- c. <http://bit.ly/Inkscape-Basics-3>
- 5. **Inkscape Advanced**
  - a. <http://bit.ly/Inkscape-Advanced>
- 6. **GIMP**
  - a. <http://bit.ly/GIMP-1>
- 7. **GIT Basics**
  - a. <http://bit.ly/GIT-Basics-1>
  - b. <http://bit.ly/GIT-basics-2>
- 8. **GIT Advanced**
  - a. <http://bit.ly/GIT-Advanced-Merges>
  - b. <http://bit.ly/GIT-Advanced-Rebase>

## ii. Tasks

- **Definition:**
  - a. The task for the team is to develop one complete experiment with Pedagogy (Round 1), Storyboard (Round 2) , Lab Manuals (Round 3), Simulator.
- **Working Protocol**
  - a. Once the faculty has completed the Pedagogy, Storyboard and Lab manual MOOC. They need to club with students so that they start making the simulator.
  - b. Building Simulator should begin only when the above docs are ready, or else the simulator may be flawed.
  - c. The Student teams based on their training should start to develop the simulator.
  - d. The pedagogy, storyboard, lab manuals and the source codes have to be added into a public git repository.
  - e. Technologies to be used to develop the Simulator : HTML5, CSS, JavaScript, HTML Canvas and SVG Animations only.

## iii. Submissions

- **Submission Breakup.**
- Teams have to develop and submit 1 Experiment.
- **Step 1.** Faculty : Faculty fills the 3 Doc Templates ( Pedagogy, Storyboard & Lab Manual ) and submits it to the Student Category 2 .
- **Step 2.** Student Category 2, copies the Doc into the Template Repository listed below ( need to convert the docs into markdown as per the format visible in the sample repository).
- **Step 3.** Student Category 2, copies the simulator they have made into corresponding folders as per the documentation.
- **Step 4.** Student Category 2. Packages the repository as per the below Repository Guide and pushes it on the Public Git Repository ( you can use Github, Gitlab, Bit-bucket etc. make sure the repository visibility is set to public.)
- **Step 5.** The Team needs to submit developed experiment, public repository link, in the Registration Form.
- \* Student Category 1, helps both Faculty and the Category 2 students for the smooth execution of the development process.

## iv. Link

- **Important Docs / Repos / Links**

- 1. Documentation for the Structure of the Repository : <http://bit.ly/Repository-Structure>
- 2. Template Repository for the Student Category 2 : <http://bit.ly/Round-Templates-Git>
- 3. Example Repository : [http://bit.ly/NewtonsRing\\_Exp\\_Sample](http://bit.ly/NewtonsRing_Exp_Sample)

d. Registration :

- Registration form is available here :
  - <http://bootathon.recbanda.ac.in>
  - Note : Since there is a **pre-registration step** (see below )which includes online **training and tasks**, prospective teams may take a few days to complete the registration process. Therefore, prospective teams are requested not to wait until the last date to register.

e. Selection

- Once the team has registered, the organizing team shall select the team based on the criteria listed here : <http://bit.ly/Experiment-Review-Guide>
- Once selected, all the team members shall be notified on their email ids.

f. Certification Process

- After the registration has been completed, and the teams have undergone a Pre-Bootathon Training, the teams will then compete for the following certifications.
- General**
  - Teams completing the development with, a Mentor & Reviewer rating of 5 out of 5 for exactly **1** experiments, all the team members get a Certificate of **Participation**
- Silver**
  - Teams completing the development with, a Mentor & Reviewer rating of 5 out of 5 for exactly **2** experiments, each member gets certified with a **Virtual Labs SILVER Developer**
- Gold**
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  - PLATINUM Certified Developers also gets an opportunity to:
    1. Become **Experts** for the future BOOTATHON, shall be invited by Virtual Labs nationally, for the development efforts.
    2. Opportunity to serve as a **Reviewer** on Vlabs-Dev, reviewing national level Vlabs development.

5. Program & Schedule

a. Pre-Bootathon

- The Teams which have registered and have been Selected, shall be assigned a MENTOR from their discipline.
- The mentors shall guide the team in polishing and in making their experiments perfect.
- Mentors shall interact with the team through Video Conferencing as per pre-decided schedule.
- The Mentor and the Team has to make sure that their Experiment with Simulation is completed and reviewed before coming to the Bootathon.

- v. The pre-BOOTATHON session shall begin from 19th October till 31st October.

**b. Bootathon**

- i. The team has to arrive one day before the event day.
- ii. There will be Mentors and Resource persons who shall give lectures, Tips and tricks to perfect their Experiment even more.
- iii. 1 Day will be given to improvise their experiments even better.
- iv. Teams shall have to start developing the 2nd experiment.
- v. Given the experience the teams have in developing the first experiment, they can move towards completing the 2nd Experiment and can move to 3rd experiment when the 2nd one is completed.
- vi. It is a time-based event, teams shall be evaluated on the basis of most number of experiment.

**c. Post-Bootathon**

- i. Teams achieving GOLD certification compete for the PLATINUM Certification. Teams shall be allotted 20 Days to submit the rest of the 5-7 experiments.
- ii. PLATINUM Certified Developers also gets an opportunity to:
- iii. 1. Become **Experts** for the future BOOTATHON, shall be invited by Virtual Labs nationally, for the development efforts.
- iv. 2. Opportunity to serve as a **Reviewer** on Vlabs-Dev, reviewing national level Vlabs development.

**6. Venue:**

**a. Rajkiya Engineering College, Attara, Banda, Uttar Pradesh.**

- b. Date: November 4 to 10, 2019 ( Teams need to arrive on 3rd November and depart on 11th November.)

**c. BY TRAIN**

- i. Attara Railway station : <https://goo.gl/maps/3119SduNXanky8139>
- ii. Shivrampur Railway Station : <https://goo.gl/maps/sFdH3VBMEOtsVsscA>
- iii. Banda Railway Station : <https://goo.gl/maps/EsXZoe9jbtXBhNLe6>

**d. BY AIR**

- i. From Lucknow Airport : <https://goo.gl/maps/chJDvhV9moUd5iXS6>
- ii. From Prayagraj Airport: <https://goo.gl/maps/TeY15cMUoAdAGj7W6>
- iii. From Kanpur Airport : <https://goo.gl/maps/iCEmpvkSiB59sPyd7>

**7. Website:**

**a. For more Registration Form & contact details**

**b. Website :**

<http://bootathon.recbanda.ac.in>