Project Proposal

1) Workshops and Labs

2) Costumer Problem Statement:

   a) Problem Statement:

   Description: Presently each educational Institution has its ***WORKSHOPS AND LABS*** that are utilized by the students of that specific Institution. In Covid scenario, students are primarily studying in online mode and even if some workshop/ lab based on courses are conducted on campus, its optional for the students to join on campus and due to personal reasons and impact of covid on families, some students study in online mode. For education like Design education and other workshop/ lab-based education, students need these facilities to work on their assignments and projects. To facilitate students to utilize the facilities of Institutions closer to their hometowns, a collective database could be prepared for such facilities. These could be booked by students for specific job works and duration through their Institutions and with prior approvals. Each Institution may specify financial charges for such facilities, which may be paid by the parent Institutions or students themselves depending on the scenario whether for the specific job work, parent Institution had to provide the facility to the student or not. Payment terms for a Security Amount and the charges for usage could be specified by each Institution. This could be planned and implemented through a web-based portal. Such a solution would lead to more judicious utilization of resources and assets at national level and would benefit students staying across the country. It will have a significant impact on education and skill development at national level even in post-covid scenario.

   Bucket Domain: Smart Education

   > 1. As a costumer perspective this webapp solves many problems for students and universities in a situation like covid pandemic or in regular life.

2. Student perspective:

- The students can use this webapp for getting physical experience of the laboratory and interact with real life errors which can't be identifies in virtual labs.

- The students who are not able to go to their university due to issues like quarantine or any kind of personal reason. This webapp will help them to find institutes that will provide them the equipment required for their individual practical.

- The students can use this webapp for attending various workshops on different topics organized all kind of universities and institutes to improve their knowledge and improvise their skills.

3. University perspective:

- The universities and institutes will use this webapp for advertising their institute and provide service of practical experience to the student which will a source income for them.

- From this webapp the institutes will use their assets which are not in use due to lack of students to generate income.

- This webapp will be the perfect portal for inviting students to the workshops they organize.

- They can keep a record of the student attending their institute for the work shop and the practical sessions.

- The parent university of the students can book slot for their students in a certain institute for practical sessions in other cities.

4. Features for students:

- The students can easily sign up by email or phone number or email and the verification will be done though one time password send via mail.
- There will a home page as a social media platform where the students can filter institute by the distance between them and the institute and the laboratory they want to attend.
- The student will then select their preferable institute and fill the requirements accordingly if the institution if providing the labs in their preferable time slot, it will also show the slot available in a certain lab.
- When the students will fill the details required and select the time slot they want, the request will be sent to the server and their request will register.
- When the minimum number of required slots will be requested, the payment portal will appear to the students three days before the practical.
- The other section will be the explorer where different kinds of workshops and laboratory will be presented and the students can select the preferred institute and books slots according to their convince.
- This section will also have a search option for students to search about the institute they want to know.
- The search results will show the institutes and its geographic location on the map, all the laboratory the institute is providing and the workshop they had organized or are going to organize will be displayed.
- They students can request for the slots by the id of the institute too.
- There will be section for the students to track their progress and keep the record of the laboratory and workshops they had attended.

- Students will be also given a timeline about their upcoming laboratory and workshops in the timely sequence with the payment request if the payment is pending.
- After the students had attended the laboratory and workshop they can give the reviews about the institute, infrastructure, staff etc.
- The students get to meet new people and interact with them.

5. Features for Institutes:
   - The institutes can sign up as an institute and will be verified by one rime password send via mail.
   - There will be a home page as a social media platform where the institutes can look at the other institutes around them and the laboratory they are providing as a competition.
   - The institutes will also have the explorer section where they can get idea from different universities about the creative workshops they are providing to the students.
   - This section will also have a search option for research about the option given by different institutes all over the world.
   - There will be an upload section for the institutions to upload the details about their laboratory and workshop.
   - The institutes will be given reminder about the booking of slots if the request does not reach the minimum limit, the will given a notification about it and will be asked if to book the slot or request the students to shift to another slot.
   - The number of canceled requests by a student will be stored in the database for recognition of fake students accounts.
   - The parent institutes can book slots for their students in a certain institute for different kind of activities, the institute will be given a code which will help the students to book the slot free of cost by them self.

- The institution can post about various activities on the webapp for increasing their recognition among the students.

b) Problems:
1. Presently each educational Institution has its ***WORKSHOPS AND LABS*** that are utilized by the students of that specific Institution.
   - The labs and workshops are only utilized by the students of specific institution.
   - If the institute does not have enough students in a particular branch, then the institute is not fully utilizing its assets, so they are just lying around and aren't generating any benefit for the institution or students.
2. In Covid scenario, students are primarily studying in online mode and even if some workshop/ lab based on courses are conducted on campus, its optional for the students to join on campus and due to personal reasons and impact of covid on families, some students study in online mode.
   - Due to the covid pandemic the whole nation was not supposed to travel to different city for reducing the spread of the pandemic.
   - The primarily most of the students were studying online but the real-life experience of laboratories and workshops was missing, the virtual labs did their best to tackle these kinds of situations but the real-life errors and the physical experience of different kind of equipment was cannot be expected through a virtual platform.
   - The institutes tried there best to conduct this kind of laboratories and workshops but due to the inability of students going to their specific institutions due to specific reasons, so they study in online mode only.

3. For education like Design education and other workshop/ lab-based education, students need these facilities to work on their assignments and projects.

   - For students of design and architecture the workshops are really important to complete their assignments and project as the need to do practical work on it

   - If they can't go to their specific institution, it becomes really difficult for them to complete their assignment and project.

4. To facilitate students to utilize the facilities of Institutions closer to their hometowns, a collective database could be prepared for such facilities. These could be booked by students for specific job works and duration through their Institutions and with prior approvals.

   - As there are some kind institutions are present in most of the towns and cities, so a wed portal must be made where students can visit and look around for institutions in their hometown which will help them to complete their assignment and projects, it will also help them to practice for their practical exam.

   - A database must be present for storing a record of the institutions providing the service in their specific cities and the record of the students visiting the institution.

5. Each Institution may specify financial charges for such facilities, which may be paid by the parent Institutions or students themselves depending on the scenario whether for the specific job work, parent Institution had to provide the facility to the student or not.

   - As the institutions are giving their service, they will be charging a specific amount for their assets.

   - The charges can be paid by the parent institution or by the student it self according to the scenario whether the parent institution wants student to get practical experience or the student wants to practice and work for their own.

6. This could be planned and implemented through a web-based portal. Such a solution would lead to more judicious utilization of resources and assets at national level and would benefit students staying across the country. It will have a significant impact on education and skill development at national level even in post-covid scenario.

- We required an online portal for providing this kind of service, so anybody in the world can access it as their requirement and need.
- As many institutions lack in the strength of students their assets are not fully utilized, they require a way to utilize their resources in a more fruitful way.
- In post covid situation the students can use this webapp for practicing their practical laboratories in their vacation time.
- The institutes will be benefits because it generates them income with minimal investment, they cab advertise the workshops organized.
- The students can develop their skill and gain knowledge from these workshops.

3) Goals, Requirements and Analysis

a) Goals:

i) Develop a user interface for the students where they can sort different kinds of laboratories and institute.

ii) A software where user can sort institutes according to the distance between them and the organization.

iii) Development of a suggestion software for suggesting user different kinds of workshops.

iv) Develop a timeline for students to manage their requests for different kind of laboratories and workshops, the upcoming booking of slots will also be shown in timeline.

v) Develop a request and payment verification method for the students and the institutes.

vi) Portal must be developed for the institutes where they can upload about the services, they are providing it can either the use of laboratories or posting about the workshops they are organizing.

vii) An interface must be developed for the institutes to book slots for their students in different institutes.

b) Requirement:

i) As a student it is really important to get physical experience of the laboratories they are studying, so in covid times and now also when they can't travel to their parent institution, they can use this platform to search and get physical experience of all the things they want.

ii) Some students who are perusing online degree in different fields also requires a platform where they can get to know about different laboratories and workshops around them so they can test their skills and accrue practical knowledge.

iii) Most of the institutions organizes different kinds of workshop and are lacking participation as they are not known by many people.

c) Analysis

i) The students and the institutes require a platform to connect to each other.

ii) The students need a place where they can search and find labs and workshops for completing their assignment and projects with physical equipment and practice for their practical exams.

iii) The university need a platform from where they can utilize their unused assets and generate income from them.

iv) The institute also need a platform where it can post about the workshops they are organizing and increase public recognition.

4) Technologies used:
   a) Backend:
      i) Python flask (Framework)
      ii) Flask-sqlalchemy (database management system)
      iii) Flask-login (user control)
      iv) Smtplib (user verification)
   b) Frontend:
      i) Html5
      ii) CSS
      iii) Bootstrap
      iv) Javascript ES6
      v) Geological API
   c) Code Editor:
      i) Visual Studio code
      ii) Live server
      iii) Prettier
      iv) Jinja2
   d) Database:
      i) SQlite