**META LAB**

**(MECHANICAL ENGINEERING)**

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**Virtual lab of Mechanical Engineering**

* **Description:**

We are preparing a virtual 3D lab for mechanical engineering students. which will make it easier for them to do learning about machines. And students can do deep diving of the machine through virtual lab.

These are some points for the benefit of the students:-

* **Mechanical Virtual Simulation Lab**

1. Students will be able to Identify and describe the function of different parts of the Machines.

2. Students will be able to: Use the simulator & assemble the different parts of the Machines.

3. Students will be able to: Realize the operation of the machines for different parameters given by the student and can check the effect of the different parameter on the performance of the machine.

4. Students will be able to: Build a given machine by using the different parts available with the students. This will help them to learn the assembly without actually destructing the parts.

5. Students will be able to: answer the questions related to part functioning and the assembly of the machines.

* **On What problem we are working?**

We are creating a virtual environment for mechanical engineers, so that it is easy for them to learn about the parts of the machines. how they use,how they work and about everything.They will learn easily all the things about machines through Virtual Lab.

* **What is the approach for finding solution for the problem?**

We are applying 3D approach to solve this problem and make 3D simulation or say the “THE META LAB”

* **Technology stack for the problem statement!**

1.We are using Blender for 3D modeling.

2. Using Artificial intelligence so we know entails that the machines will capable of carrying out so-called “smart tasks” and making independent decisions.

3. Using Machine learning goes a step further – it will enables machines to improve themselves and sophisticated.

4.We will using C# and unity for creating a game environment.

* **What are the drawbacks in existing solution?**

IITs like IIT Kharagpur and IIT Bombay provide a virtual lab for mechanical engineers but they use 2d approach that is not interactive in among the students

* **How our solution is different from the existing solution?**

We will build virtual model of machines to make it easier to understand the use and practical implementation of the machine for the students who doing distance learning (but not limited to distance learning students)