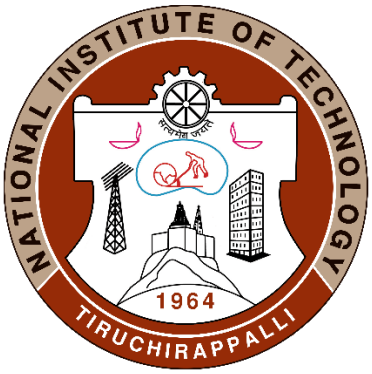
National Institute of Technology, Trichy [TN]



AR-VR GROUP PROJECT

Course – Augmented and Virtual Reality (CSPE51)

Faculty - Dr. M. Sridevi

Topic – VR in Education

Members –

Vipul Patel (106120142)

Nitin Kanan (106120078)

Sanket Borkar (106120102)

Problem Statement

- To stimulate a virtual reality experience in the field of education by presenting solar system, orbits, and planets in 3D.

The benefits of this project will be:

- Increase knowledge area
- Provide active experience rather than passive information
- Boosts students' creativity

Design

- Solar system planets
- Smoothly switching between cameras
- First-person roaming and collision checking
- Photo-realistic rendering for a few solar system bodies
- A simple yet beautiful atmospheric model

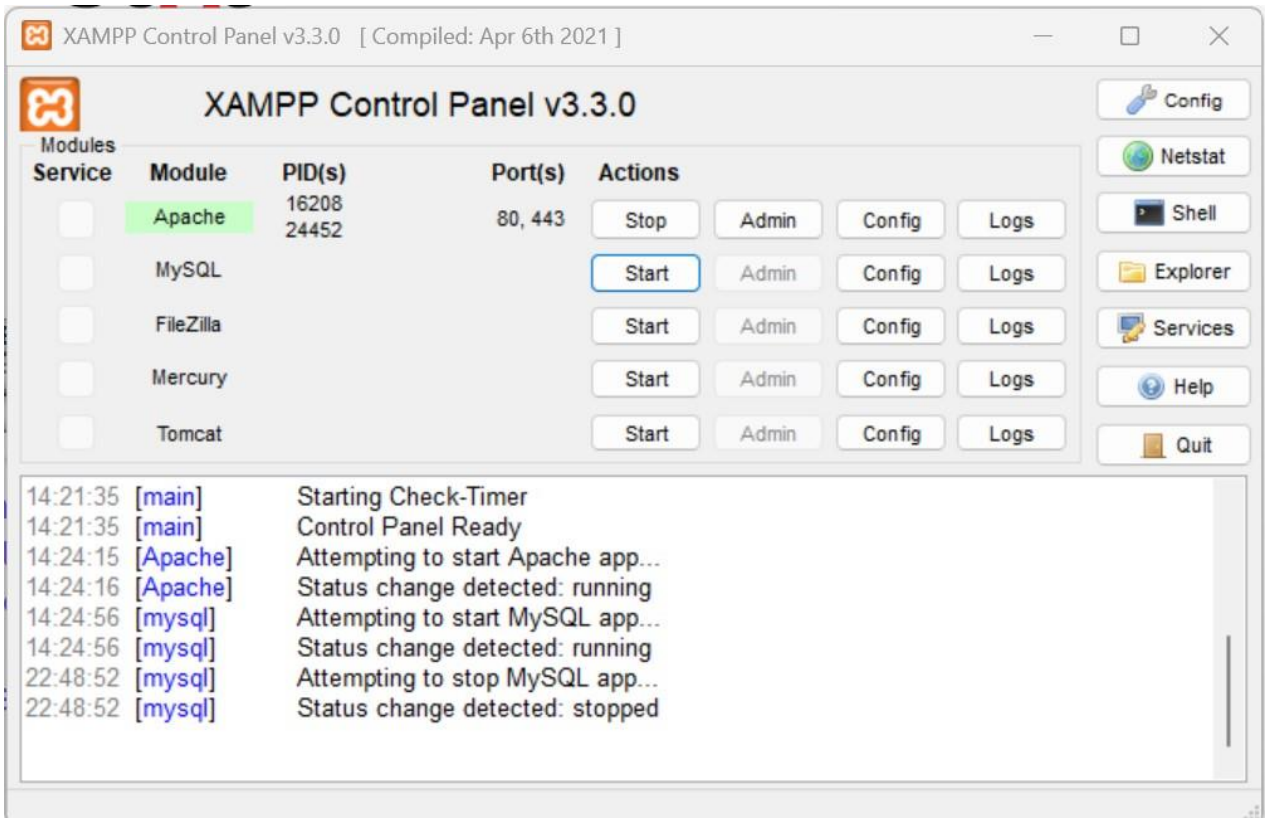
Tools Used:

- 3js
- Css
- Html
- Xampp

Instruction to execute: -

- Install Xampp [(Download Link)]

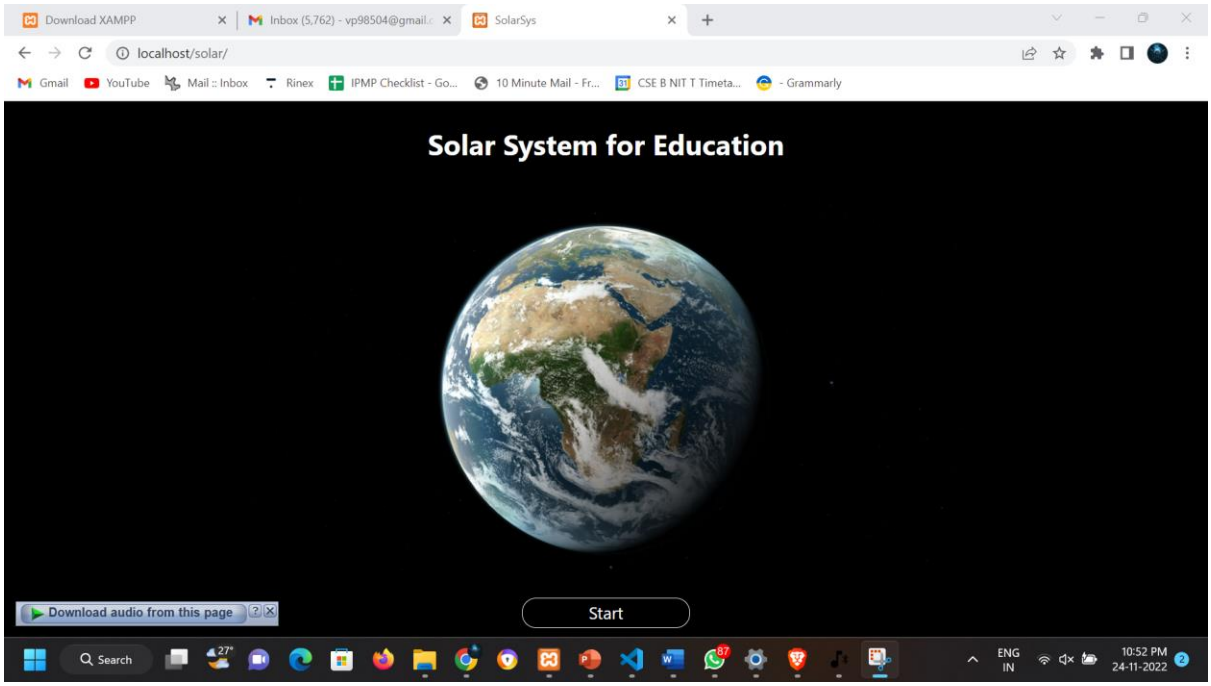
- Open Control Panel and start the Apache.



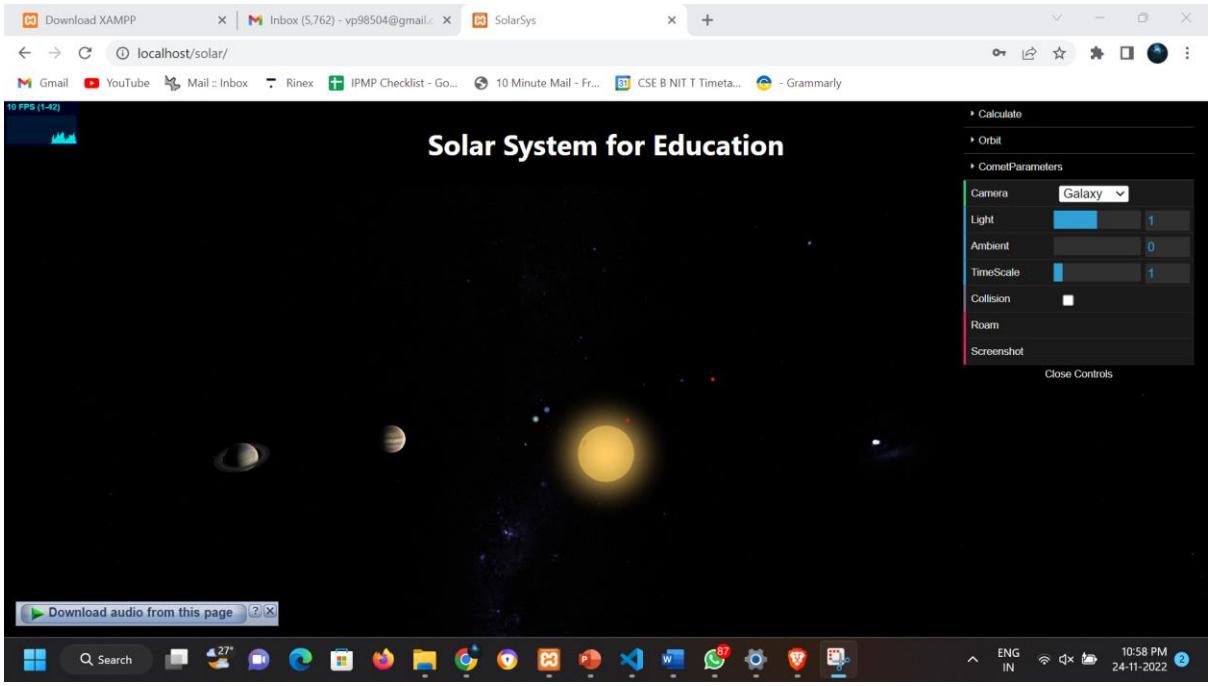
- Clone the Project from github in folder solar.

- Copy the project folder at “C:\xampp\htdocs” Location.

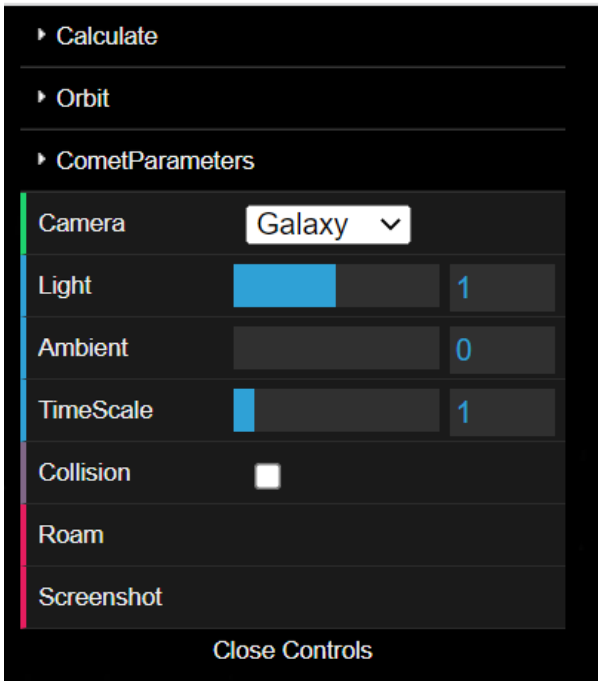
- Now, Open Localhost on Webbrowser: http://localhost/solar/



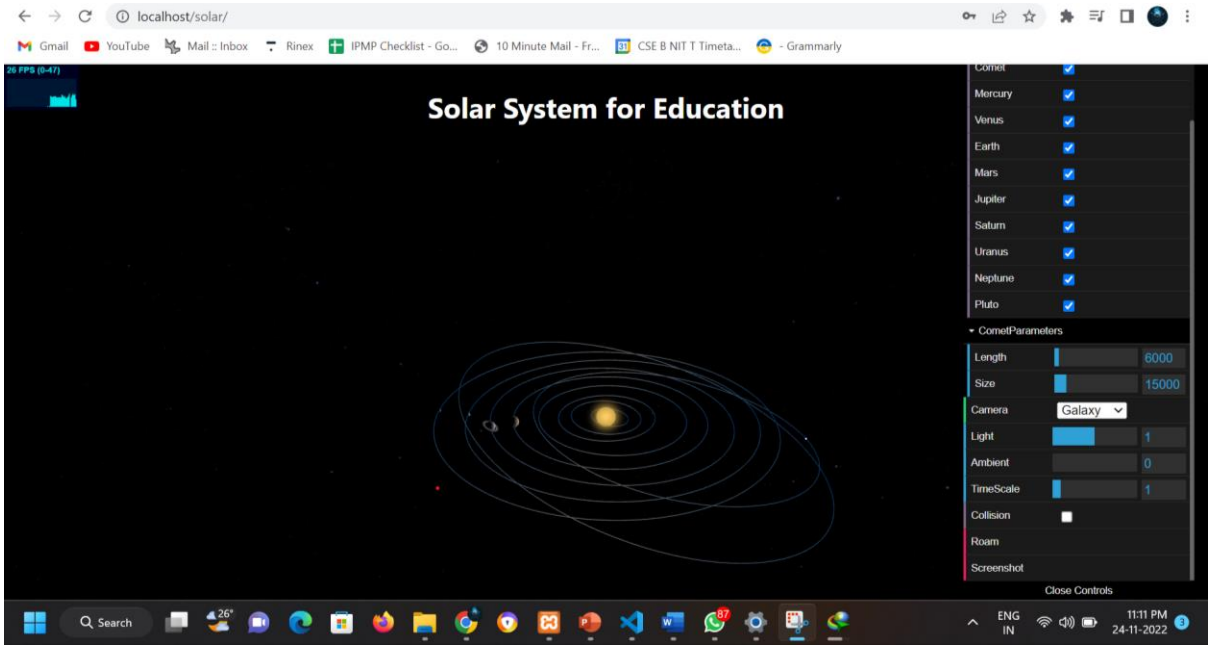
- Click On start to stimulate the project.



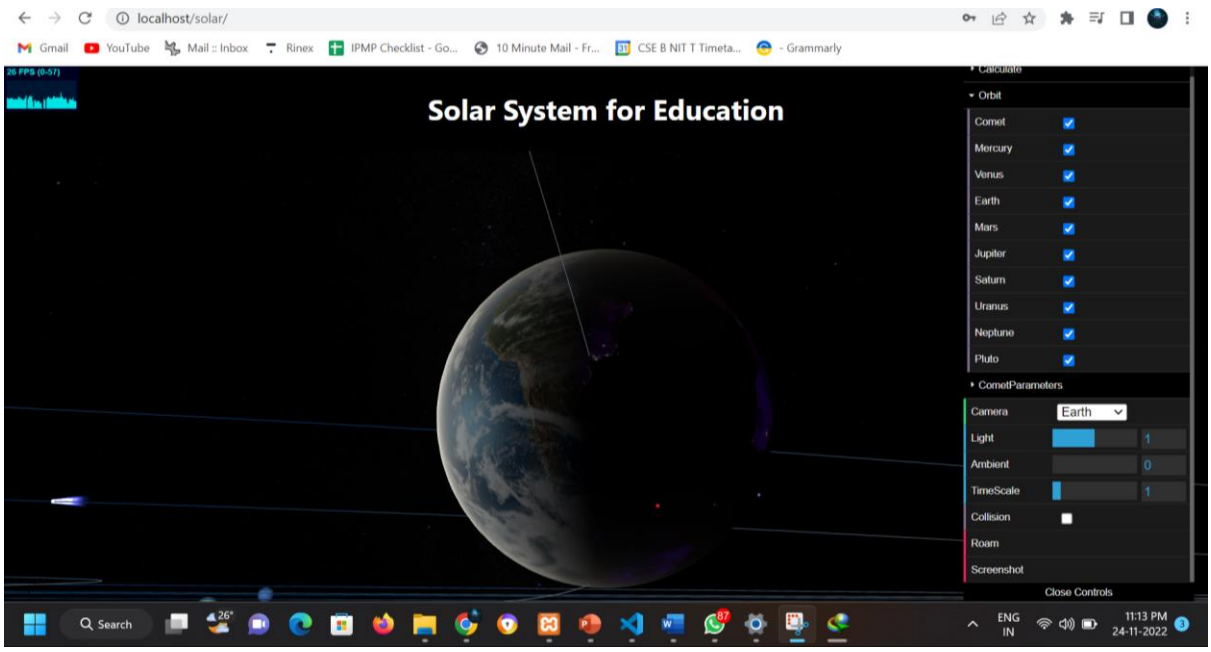
Control Panel: -



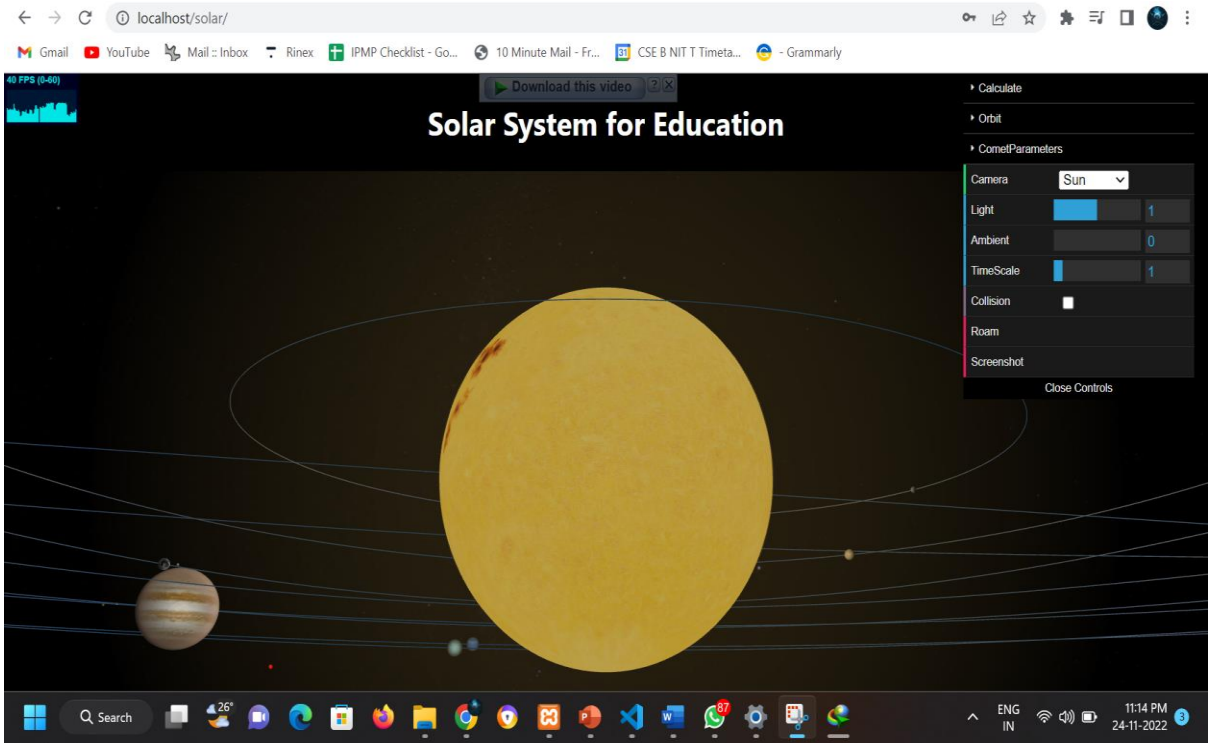
Sample Test Cases: -



Solar System with all orbits.


localhost/solar/
Solar System for Education
Orbit
Comet
Mercury
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Neptune
Pluto
CometParameters
Camera
Earth
Light
Ambient
TimeScale
Collision
Roam
Screenshot
Close Controls

Earth


localhost/solar/
Download this video
Solar System for Education
Calculate
Orbit
CometParameters
Camera
Sun
Light
Ambient
TimeScale
Collision
Roam
Screenshot
Close Controls

Sun

How It's different form existing app?

Existing apps have only planets rotating continuously but, in our project, we have created control panel which is used to control following parameters: -

- We can create or remove orbit.
- We can move to a particular body.
- We can control brightness, Ambient and speed of body.
- We can take screenshot at any moment.
- We can stop or start animation of any particular body.
- We can roam around solar system by a single click.

Contributions: -

Vipul Patel (106120142): Animation and design (Speed control in control panel)

Nitin Kanan (106120078): Control Panel (Change lighting and ambient)

Sanket Borkar (106120102): Orbit and path