For 3d application we are gonna need to install the following packages  
before starting the project:

* **--legacy-peer-deps** (It ensures smoother installation without conflicts)
* **react-three/fiber** (allowing you to create 3D graphics directly within React components)
* **react-three/drei** (It includes ready-to-use 3D objects, controls, and animations, making it easier to build complex 3D scenes without having to write everything from scratch.)
* **maath** (for complex mathematical operations in 3D space, like vector calculations, easing functions, and more)
* **react-tilt** (It’s commonly used for creating 3D tilt animations on components, which adds a more interactive, modern feel to UI elements.)
* **react-vertical-timeline-component** (Allows you to create vertical timelines in React, which can be used to display learning milestones or progress in a visually appealing way on your 3D learning website.)
* **emailjs/browser** (This is for sending emails directly from the browser using the EmailJS service. You can use this to integrate email functionality into your website.)
* **framer-motion** (used to add smooth animations and transitions to your web components. It helps make the site more engaging by animating elements like buttons, text, or even 3D components.)
* **react-router-dom** (This package enables routing in React, allowing you to navigate between different pages)

 **Suspense**: Used to display a fallback (like a loading spinner) while a component or resource (like a 3D model) is being loaded. It’s useful when working with lazy-loaded components or resources.

*  **useEffect and useState**: These React hooks help manage side effects and component state. useState is for creating and updating values (like toggles, counters, or data), while useEffect allows you to run code in response to component updates or external data changes.
*  **Canvas (from @react-three/fiber)**: Sets up a 3D rendering context in React. The Canvas component is the base container where you place 3D objects to be rendered in the scene.
*  **OrbitControls (from @react-three/drei)**: Provides interactive camera controls. Users can click and drag to rotate around, zoom in and out, and pan the view. It’s common in 3D scenes to let users explore objects.
*  **Preload (from @react-three/drei)**: Helps load assets or resources in advance to improve performance. When you use Preload, models, textures, and other assets can be loaded before they’re displayed, reducing potential lags.
*  **useGLTF (from @react-three/drei)**: This hook is specifically for loading GLTF or GLB 3D models. It loads a model and returns data, which you can use to render the model within the Canvas.
*  **CanvasLoader**: This is likely a custom loading component that displays while the 3D model or scene is being set up. It’s typically shown as a spinner or loader until the scene is ready.

**To creating 3js models we start with mesh not a div**

**In mesh we have to create a light otherwise we wont be able to see anything**