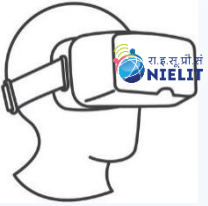
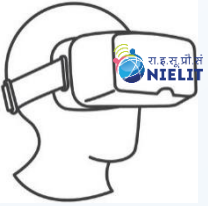


A virtual tour to

Augmented and Virtual Reality

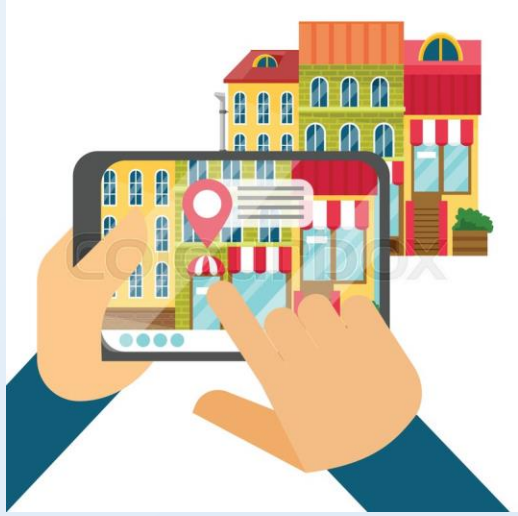
Dr. Sarwan Singh

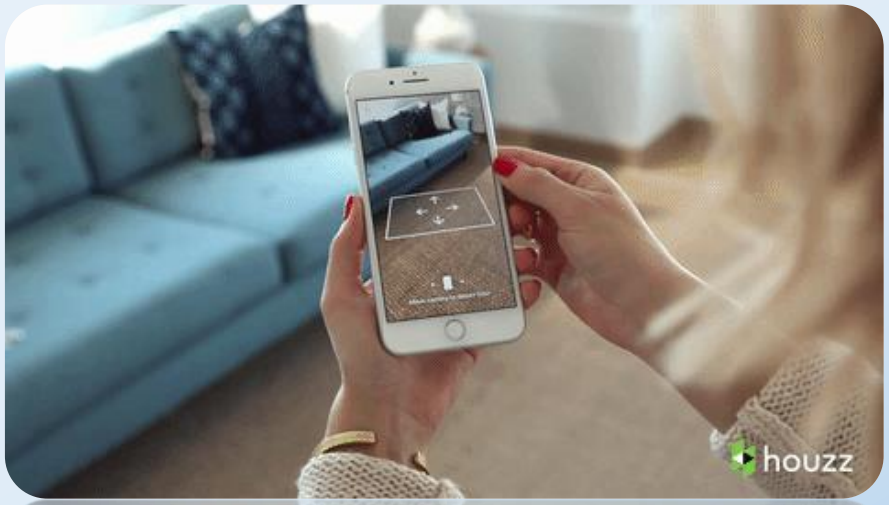
NIELIT Chandigarh



Agenda

- Managing HTML elements
- Introduction to Entity Component System, JavaScript, Events





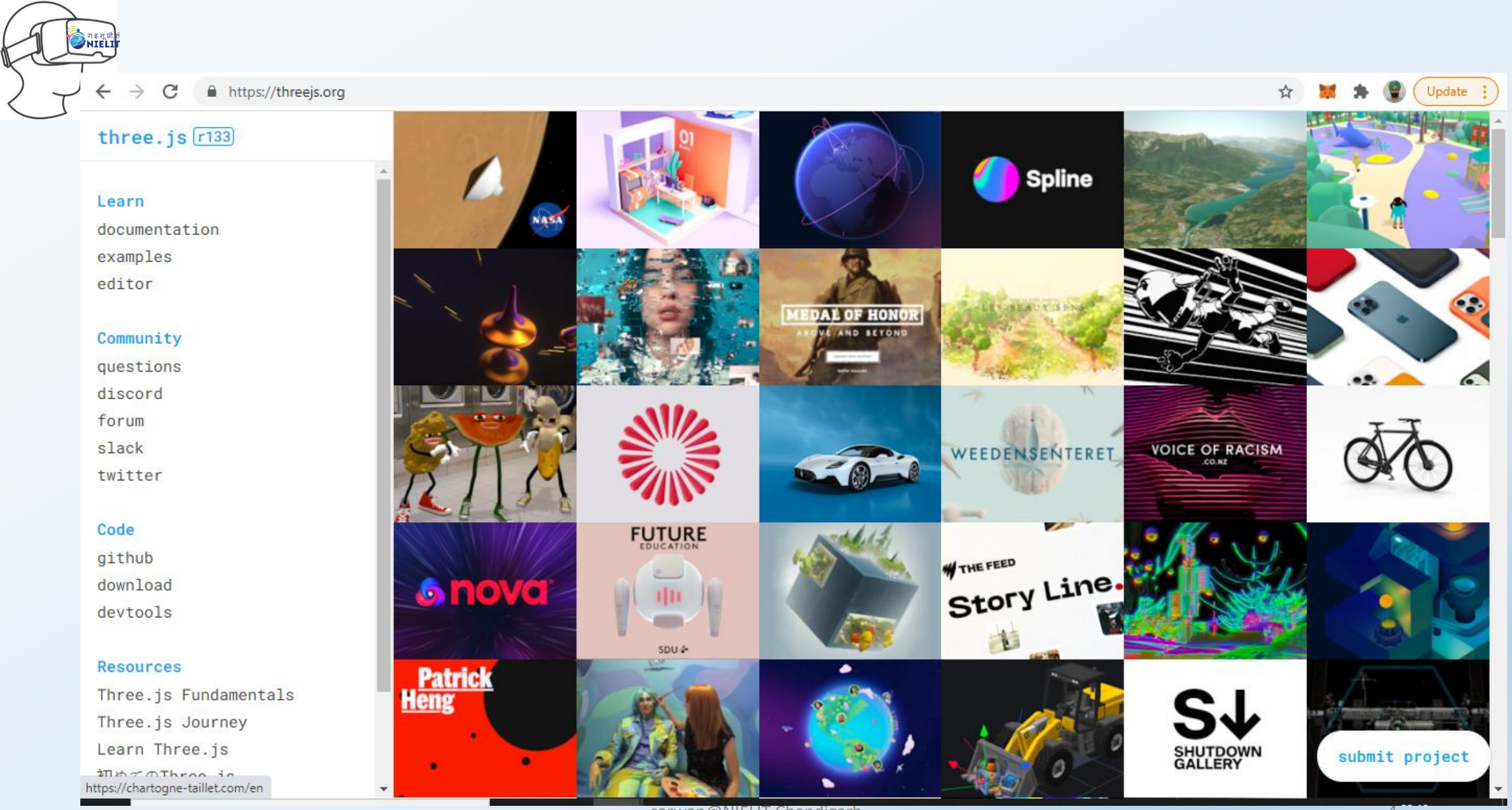
References

Websites :

- Wikipedia.org/three.js
- dev.to/arunkumarvallal, mobidev.biz, gerardfriel.com/ar/the-history-of-ar
- Harvard Business Review – *"Managers-Guide-to-AR"*
- "Virtual Reality/Augmented Reality White Paper" CAICT, Huawei Technologies Co.

Books

- "Theory and applications of marker-based augmented reality" – Sanni Siltanen
- "Computer graphics"- Hearn and Baker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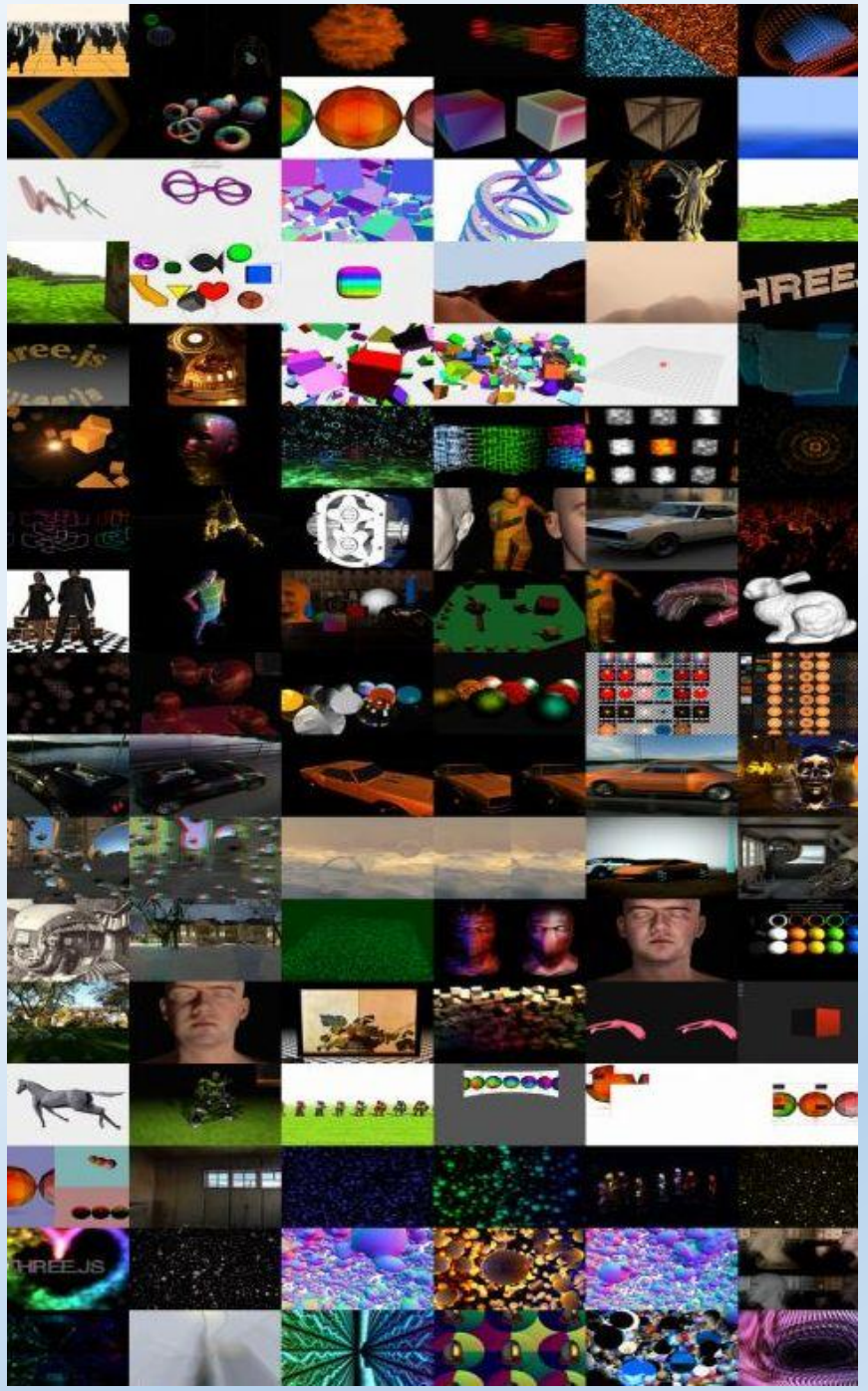
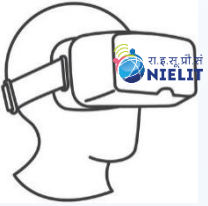
Three.js

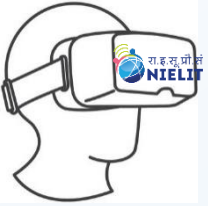
- Three.js is a cross-browser JavaScript library and application programming interface(API) used to create and display animated 3D computer graphics in a web browser using WebGL.
- Three.js allows the creation of graphical processing unit (GPU)-accelerated 3D animations using the JavaScript language as part of a website without relying on proprietary browser plugins. This is possible due to the advent of WebGL





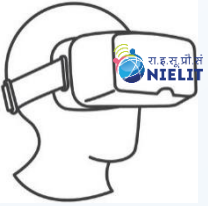
Three.js

- High-level libraries such as Three.js or GLGE, SceneJS, PhiloGL, or a number of other libraries make it possible to author complex 3D computer animations that display in the browser without the effort required for a traditional standalone application or a plugin
- The source code is hosted in a repository on GitHub



History

- Three.js was first released by Ricardo Cabello to GitHub in April 2010.The origins of the library can be traced back to his involvement with the demoscene in the early 2000s.
- The code was first developed in ActionScript and ported to JavaScript in 2009. In Cabello's mind, the two strong points for the transfer to JavaScript were not having to compile the code before each run and platform independence.
- With the advent of WebGL, Paul Brunt was able to add the renderer for this quite easily as Three.js was designed with the rendering code as a module rather than in the core itself.
- Cabello's contributions include API design, CanvasRenderer, SVGRenderer, and being responsible for merging the commits by the various contributors into the project.


रा.इ.सू.प्रौ.सं
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Creating own marker

Steps :

- Upload your image — the one that appears inside the black boundary.
- Download the trained marker — and use it in your AR experience.
- Download the marker image — to print it.

https://jeromeetienne.github.io/AR.js/three.js/examples/marker-training/examples/generator.html