ThreeJS, BabylonJS and TweenJS

Interactive Graphics Course

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Relevant sites for ThreeJS

- https://threejs.org/ the official site

- https://discoverthreejs.com/ a book on ThreeJS

- https://threejs.org/manual/ official manual

- https://codepen.io/rachsmith/post/beginning-with-3d-webgl-pt-1-the-scene Nice starting tutorial

- Other useful references can be found here: https://threejs.org/docs/#manual/en/introduction/Useful-links

Important Notice

- ThreeJS DOES NOT guarantee compatibility with previous versions.

- When you develop a project always include with it the correct version of threejs

- Your project should include the correct version of the threejs source code and specify in the report which version you used.

- Starting from r106, the preferred way to include threejs is via the import method of Javascript

Examples from ThreeJS.org

All taken from: https://threejs.org/examples

Shapes:

https://threejs.org/examples/webgl_geometry_shapes.html

Interactive Cubes:

https://threejs.org/examples/#webgl_interactive_cubes

Animation/keyframes:

https://threejs.org/examples/#webgl_animation_keyframes

Bumpmapping:

https://threejs.org/examples/webgl_materials_bumpmap.html

Postprocessing:

https://threejs.org/examples/webgl_postprocessing_backgrounds.html

Water:

https://threejs.org/examples/#webgl_water

Tutorial

- We will use the material from the official manual
  https://threejs.org/manual/

BabylonJS

- Similar Library to ThreeJS
- Main site is https://www.babylonjs.com/
- Official tutorial is https://doc.babylonjs.com/

- Briefly show the Getting Started example:
  https://doc.babylonjs.com/start

ThreeJS vs BabylonJS

- Very similar, but each one with pros and cons.
- No clear winner, depends on your problem
- ThreeJS is simpler and more straightforward
- BabylonJS is better integrated with a physics engine (Ammo.js)

Tween.js

- A tween (from *in-between*) is a concept that allows you to change the values of the properties of an object in a smooth way.

- Javascript utility library for automating the computation of intermediate values of a sequence

- GitHub repository: https://github.com/tweenjs/tween.js

- User guide: https://github.com/tweenjs/tween.js/blob/master/docs/user_guide.md

- Brief tutorial: http://learningthreejs.com/blog/2011/08/17/tweenjs-for-smooth-animation/