

HW1 Code Navigation

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WebGL

- Sample code: Javascript embedded in HTML
- WebGL: Javascript API to OpenGL
 - Wiki: WebGL (Short for Web Graphics Library) is a JavaScript API for rendering interactive 2D and 3D graphics within any compatible web browser without the use of plug-ins.
- Tutorials
 - <https://webgl2fundamentals.org/> (2.0)
 - (<https://webglfundamentals.org/>) (1.0)

Basics

- Javascript
 - **var** a = 1;
 - **function** f() { ... }
- WebGL
 - **attribute vec3** aVertexPosition;
 - **uniform mat4** uMVMatrix;
 - **varying vec4** fragcolor;
 - Things from Javascript are still available

Overall structure of the sample code

<fragmentShader>

<vertexShader>

<main JS section>
 initGL()
 initShaders()
 getShader()
 drawScene()
 ...

<body>
 ...

Tasks

- fragmentShader
 - Implement bilinear interpolations of different shadings (from the results of vertexShader)
- VertexShader
 - Implement vertex shading
- Main JS section
 - Add transformations(translation, rotation, ...)
 - Add more objects
- HTML body
 - You can add controlling elements (bars, buttons, ...) to demonstrate the results of transformations

Tips

- First observe how things are connected in the sample code before coding
 - Try changing things (values, vectors, matrices) and observe the effects
- Relax
 - You have a month to do this