

## Advanced Computer Graphics Project #5: Understanding WebGL

- ❖ Use the given WebGL framework and modify
- ❖ Create a grid mesh using the following method
  - Create vertex points as follows (you can use your own methods)

```
var vertices = [];  
  
var i = 0;  
for ( row=0; row<height; row++ ) {  
    for ( col=0; col<width; col++ ) {  
        vertices[i++] = col/2;  
        vertices[i++] = 0.0;  
        vertices[i++] = row/2;  
    }  
}
```

- Create a buffer and load it

Ex:

```
positionBuffer = gl.createBuffer();  
gl.bindBuffer(gl.ARRAY_BUFFER, positionBuffer);  
gl.bufferData(gl.ARRAY_BUFFER, new Float32Array(vertices), gl.DYNAMIC_DRAW);
```

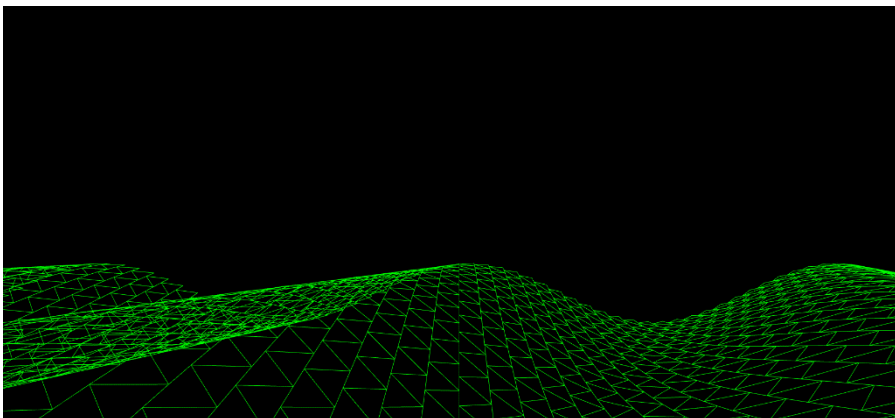
- Create indices list to draw triangles using vertices
- Create a buffer and Load it

- ❖ Display Grid mesh: in the Draw scene
- ❖ Pass the angle to the shader (use “render(now)” function to update angle +=0.002)

Ex: `angleloc=gl.getUniformLocation(shaderProgram, "angle");`  
`gl.uniform1f(angleloc, angle);`

- ❖ Modify your Vertex shader to make a wave on the grid

Ex: `mesh.y = sin(angle+mesh.x/2.0+mesh.z/5.0);`



Include your *Name*, *ID*, *Class* and *Project Name* at the top of the code. Please comment your code describing what each of your code line dose. Save the file as “projectXX.cpp”