**Computer Graphic I: Project Report**

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| **Project Name** | My Parthenon |
| **Description** | Based on real Parthenon picture, I try to draw it or other objects by following methods:  1.(a) Draw three 2D "elevations" (front, top, side) (b) Enter coordinates: choose your model format(s)  2. Transform object: apply 3D (Translate/Rotate/Scale/SHear) transformations to the created object.  3. Viewing: view your created object from multiple views.(in 3d part)  4. Transform camera/viewer/light sources(s).  5. Generate different projections of the objects (refer to class discussions about different projections, see projection "tree" see figure).  6. Edit/Change perspective projection vanishing points (1, 2, 3).  7. Create texture/bump/environmental mappings for the object. |
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| **Date** | April 25, 2018 |

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**Project Schedule**

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| **Date** | **Description** |
| Week 1 | I draw three 2D elevations: "front" is in left-top, "top" is in left-bottom, "side" is in right-top, they are presented as part of My Parthenon. |
| Week 2 | I added transforms(Translate/Rotate/Scale/SHear) for each elevations, and used jQuery to control their parameters, which means user can input what numbers they want and then output the results. |
| Week 3 | By combining my 2D elevations, I created a 3D rotate objection.  And add a new button "Go to Camera/Light", which can link to transform camera/viewer/light sources. I put a cylinder in the side and a cube in the middle, user can click mouse and drag content to view effects of different light sources. The shadow will change according to light direction. |
| Week 4 | Take a cube as a building, I draw “1 point perspective” in left-up side, “2 points perspective” in right-up side, and “3 points perspective” in left-down side. In addition, I added the Isometric of my Parthenon in right-down side. |
| Week 5 | According to my 3D objection, I added texture mapping in my objection, and used a nature scene for environmental mapping. |

**Unexpected Events**

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| **Description** | **Impact** | **Actions Taken** |
| Access to Image at 'file:///Users/XXX.png' from origin 'null' has been blocked by CORS policy: Invalid response. Origin 'null' is therefore not allowed access. | Cannot use image file from out source | Tried to bypass CORS, but it still failed. |
| Three.js cannot apply | The 3D functions cannot implement | I downloaded the three.js library documents and put in my project’s folder. The problem solved. |
| Objection location is not I want | Objection was almost gone in the view | To figure out the relative distant with other objections, and find out which one is causing the problem. Make fixation and solve it. |

**Lessons Learned**

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| **Issue** | **Description** |
| How to control variances what you want to change? | I learned how to use jQuery to implement the parameters change, for example, angle degrees, heights or sizes…etc. |
| Html, CSS, JavaScript | Before this class, they are strangers to me. But I am more familiar with them, due to I use them a lot of time in this semester. |
| Draw a graphic | I learned how to use SVG to draw a scalable vector graphic, it includes many functions that I can use to draw different shapes, and do transform functions. |
| Perform a 3D model | Compared to SVG, THREE.js is a better choice. Because it creates and displays animated 3D computer graphics in a web browser. More over, it has PerspectiveCamera function, that is why I choose THREE.js to solve camera and light part. |