Project Update 1

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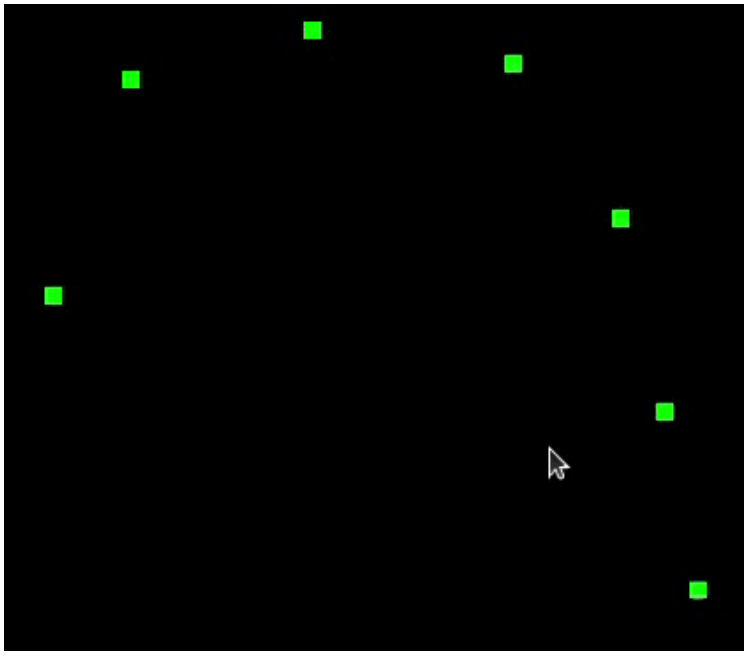
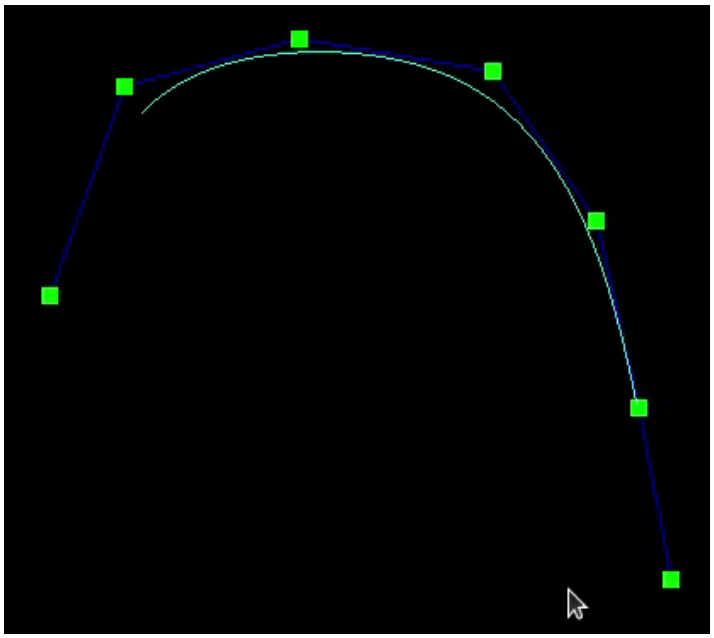
In the first few weeks, my goal was trying to set up the basic environment of 3D space and then smoothing the curve with manually inputs.



The first step was computing appropriate first derivatives in the parametric space and specifying end conditions, to get a piecewise smooth second order continuous curve passing through each of these points. Using cubic B-Splines and Beta-splines (with appropriate parameters as input) through these control points



For the overall progress, I am dividing the whole project into 2 parts: Curve Smoothing and shape fitting for surface. I have been able to accomplish some of the first part of the project.

For the remaining goal, I will try to finish the rest of the goals that I mention on the project proposal. For the shape fitting of the surface, I will try to demonstrate the squared distance minimization method. However, the algorithm is relatively difficult to program by using C++, so I am looking for another way to do it.