COL781 Assignment 4

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1 Character

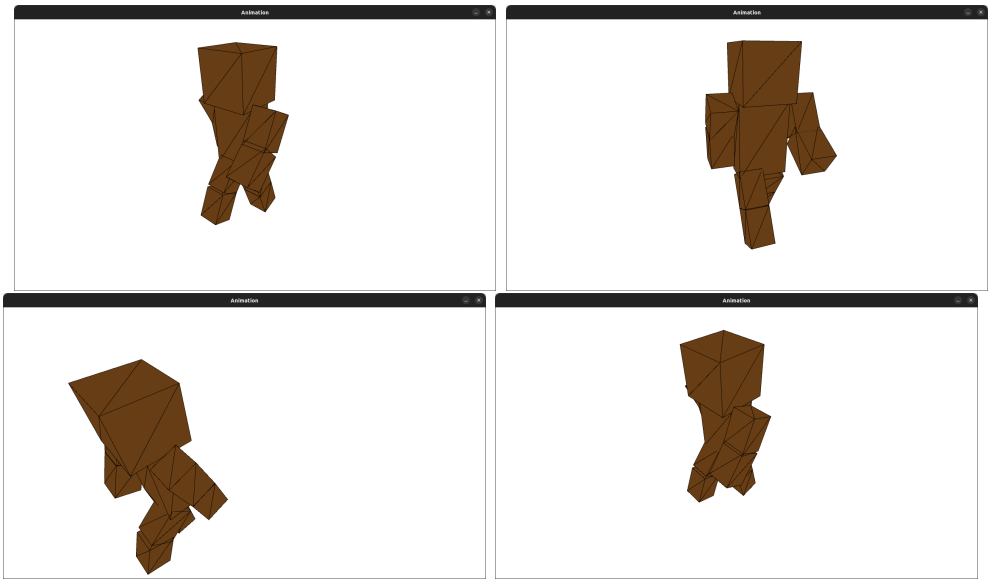

Figure 1: Representative frames of walking character

2 Cloth

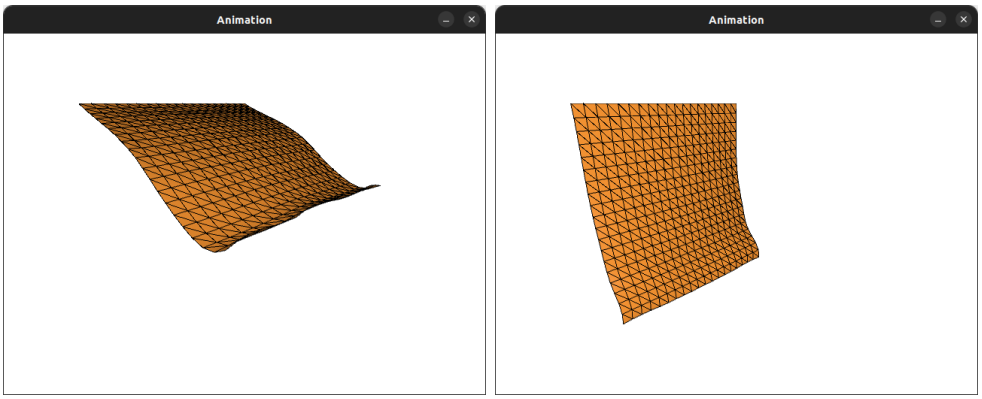

Figure 2: Cloth with one edge fixed.

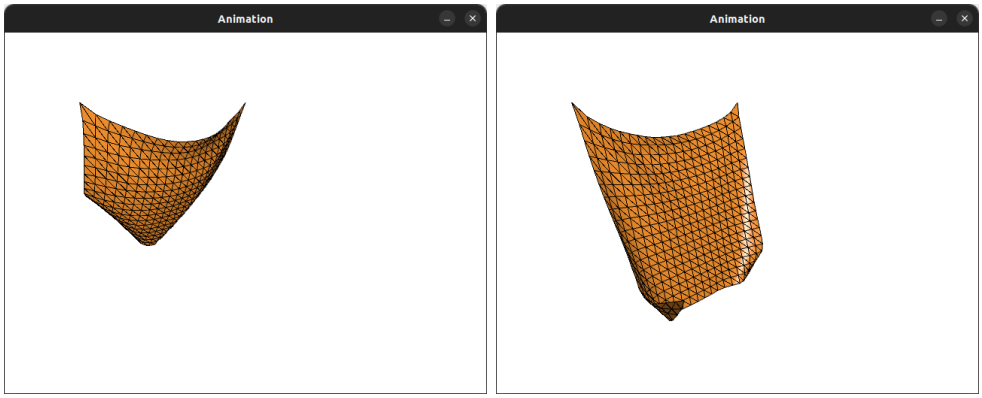

Figure 3: Cloth with only two points fixed.

3 Collisions

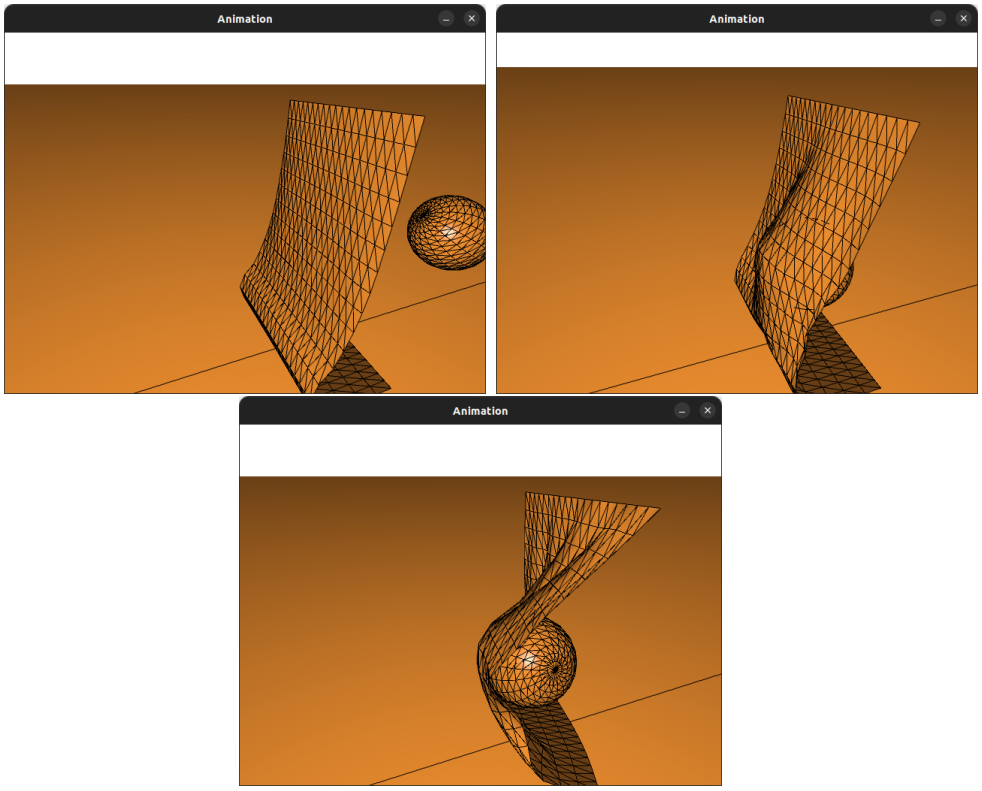

Figure 4: Cloth colliding with a plane and with a sphere (both rotating and translating)

3.1 Self-Collisions

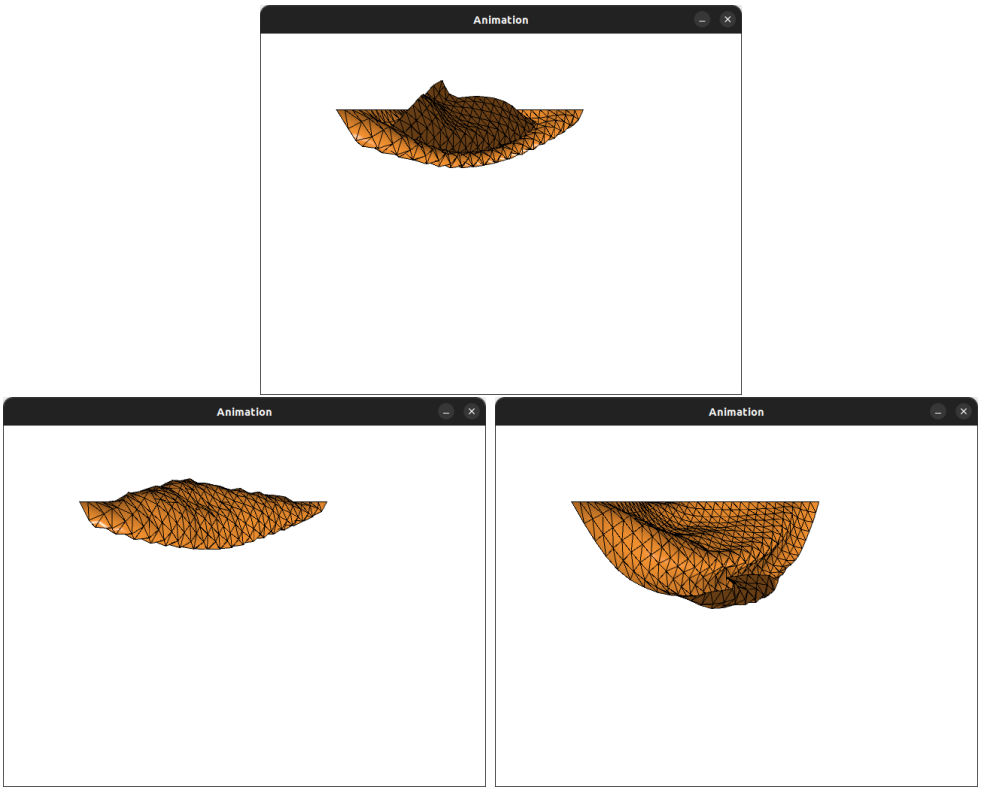

Figure 5: Cloth self collisions (top: self collisions disabled, bottom: self collisions enabled)

3.2 Implementation Choices

For the skeleton, each bone specifies a attachment position and a rotation angle (in quaternions), and a mesh which is transformed according to the bone's orientation. The catmull-rom spline's initial and final slopes are linear and based only on the position of the second/(n-1)th frame.

For the cloth animations, We only render every 15th frame for better performance. The rate of interpolation is 15 frames per millisecond while the rate of rendering is 1 frame per millisecond.

We were thus able to implement **every part of the assignment**. Link to videos: https://drive.google.com/drive/folders/1gE0ZrP0tE95ZowBLeIDEBfXBKgGRIgT7?usp=sharing.