CS475: FMX Modelling

Dhruv Arora and Raj Aryan Agrawal

October 25, 2022

Rider

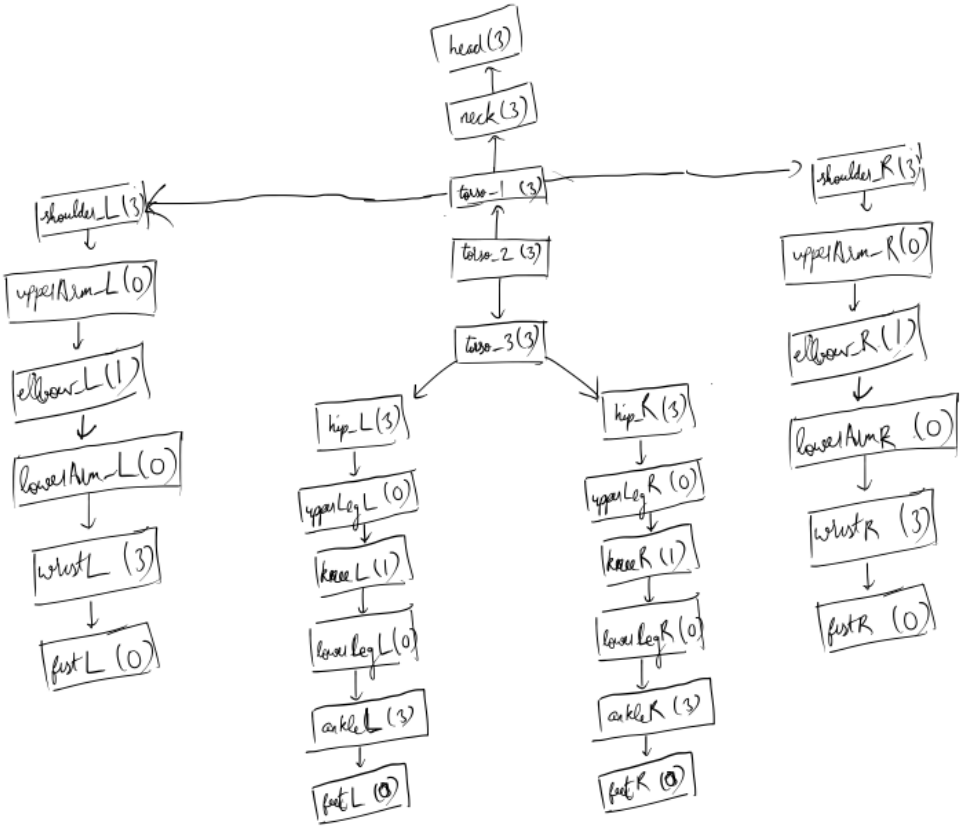

Figure 1: Rider Heirarchy

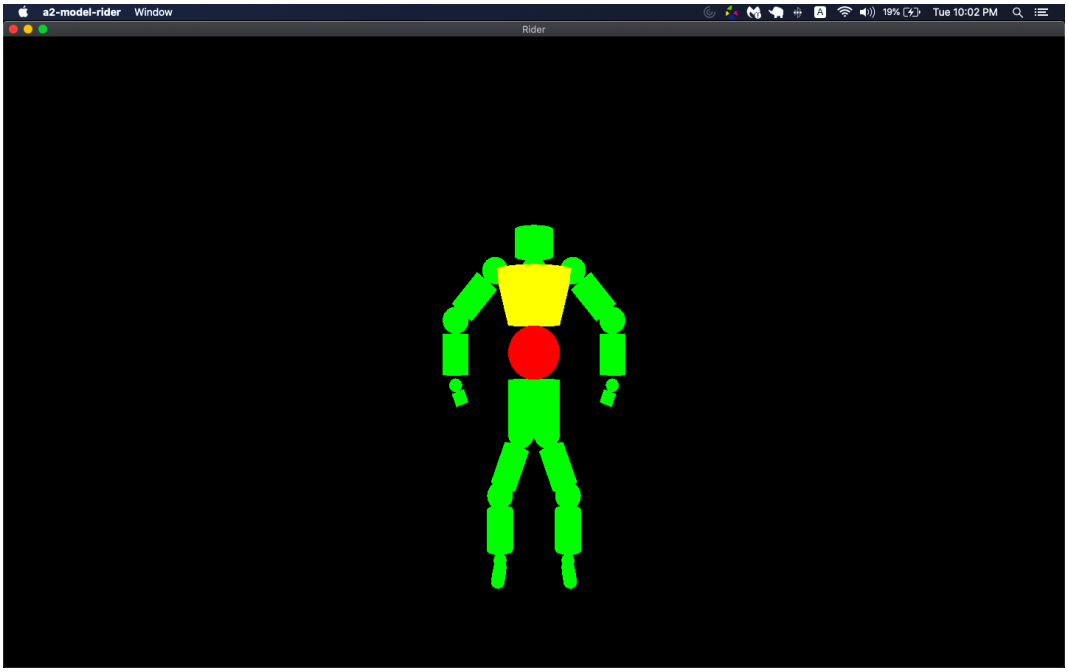

Figure 2: Image of Rider

Bike

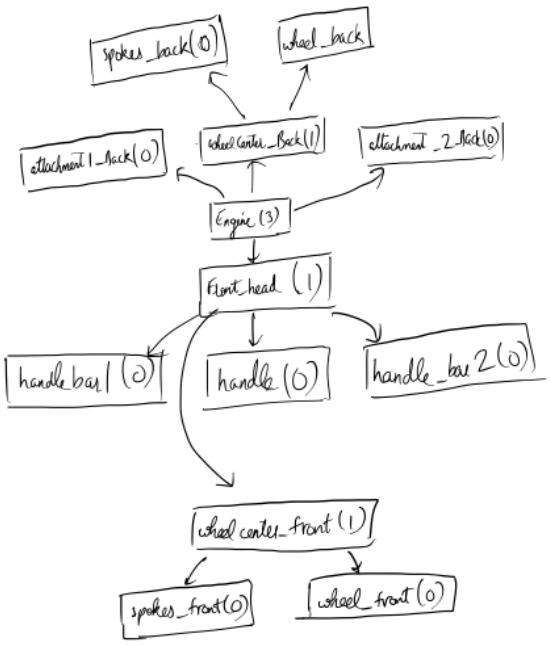

Figure 3: Bike Heirarchy

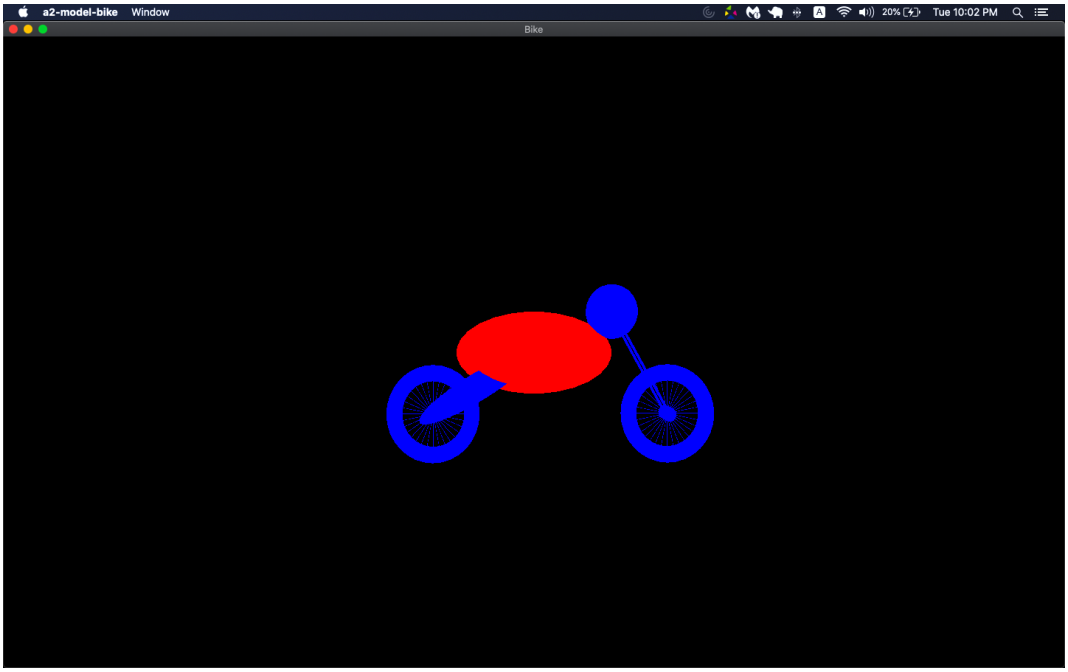

Figure 4: Image of Bike

Track

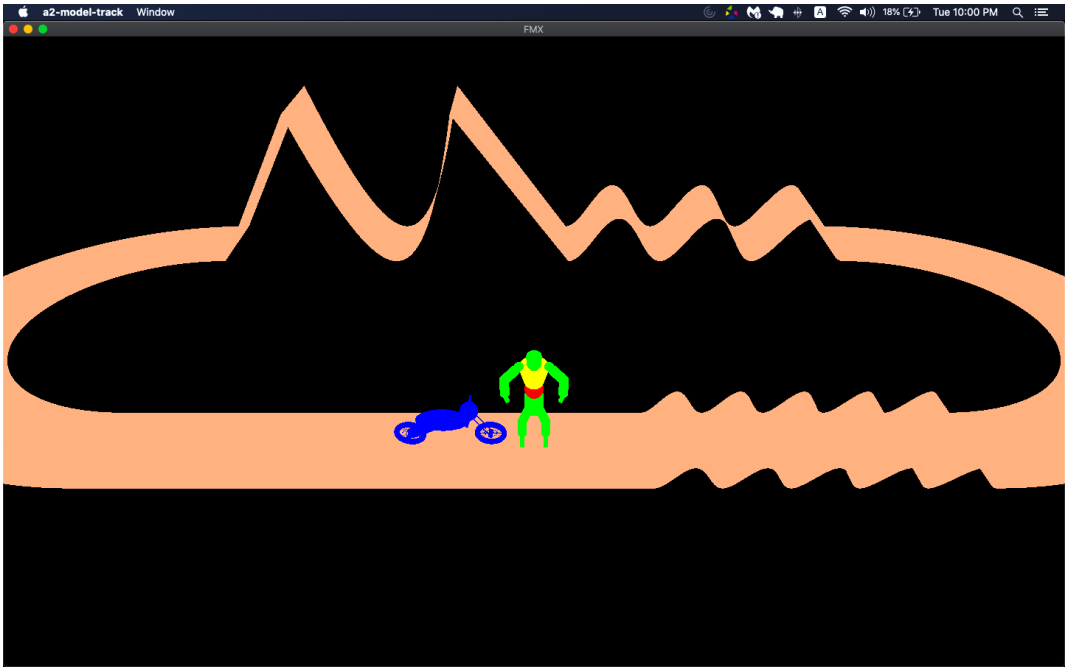

Figure 5: Image of all three

Input and Movement

At a given point in the scene, one of the objects will be active, noticed by a red and yellow colored shape. We can switch between the active objects by using the keys

- KEY_1: Previous object
- KEY_2: Next object

By default, the selected object in this case is the Rider, and the order is Rider -¿ Bike -¿ Track in a cycle.

For rotating objects about their pivots, the red highlighted shape is the active component in the heirarchy of object about which rotation will occur. For rotating about the pivot (these axes rotate with object in question)

- KEY_O and KEY_P: Rotate around X axis
- KEY_K and KEY_L: Rotate around Y axis
- KEY_N and KEY_M: Rotate around Z axis

The yellow highlighted shape shows the next shape to move to as the new pivot. This rotates around all the children connected to the current pivot in the heirarchy. The controls are

- KEY_LEFT and KEY_RIGHT: Choose between children of pivot
- KEY_DOWN: Move to selected child as new pivot
- KEY_UP: Move to parent as new pivot

For global rotation, move to the original default location of the pivot (middle torso for rider and engine for bike) and the same keys act for global rotation.

For translation of object

- KEY_Q and KEY_W: Translate along X axis
- KEY_A and KEY_S: Translate along Y axis
- KEY_Z and KEY_X: Translate along Z axis