CSS 450 Final Report

Tim Clapp
James Anderson
Katerina Bodurova

User Manual

First, set the timeline at the time the animation will stop.

Next, choose what kind of transformation you want performed (Rotation or Translation) with switching between the Radio Buttons. The system supports rotation of each individual part, and translation of the whole body.

Next,

- If the transformation chosen is <u>Translation</u>, left mouse button down will translate the whole body so that the hero's pivot will be at left mouse button down position.
- If transformation chosen is <u>Rotation</u>:
  - To choose a body part to rotate: right click on the body part to rotate
  - To rotate the chosen body part: drag the mouse **around the pivot** of the chosen body part. The pivot is defined as the red circle of the body part.
- When finished with the transformation for this key frame, click SET KEY button
- You can repeat the above process to set up the next key frame

Buttons:
PLAY – plays back the whole animation
REPLAY – self -explanatory
STOP – stops the animation
SAVE – save to a file with .anim extension
LOAD – loads previously saved .anim file

To play an animation from file loaded, click the PLAY button.
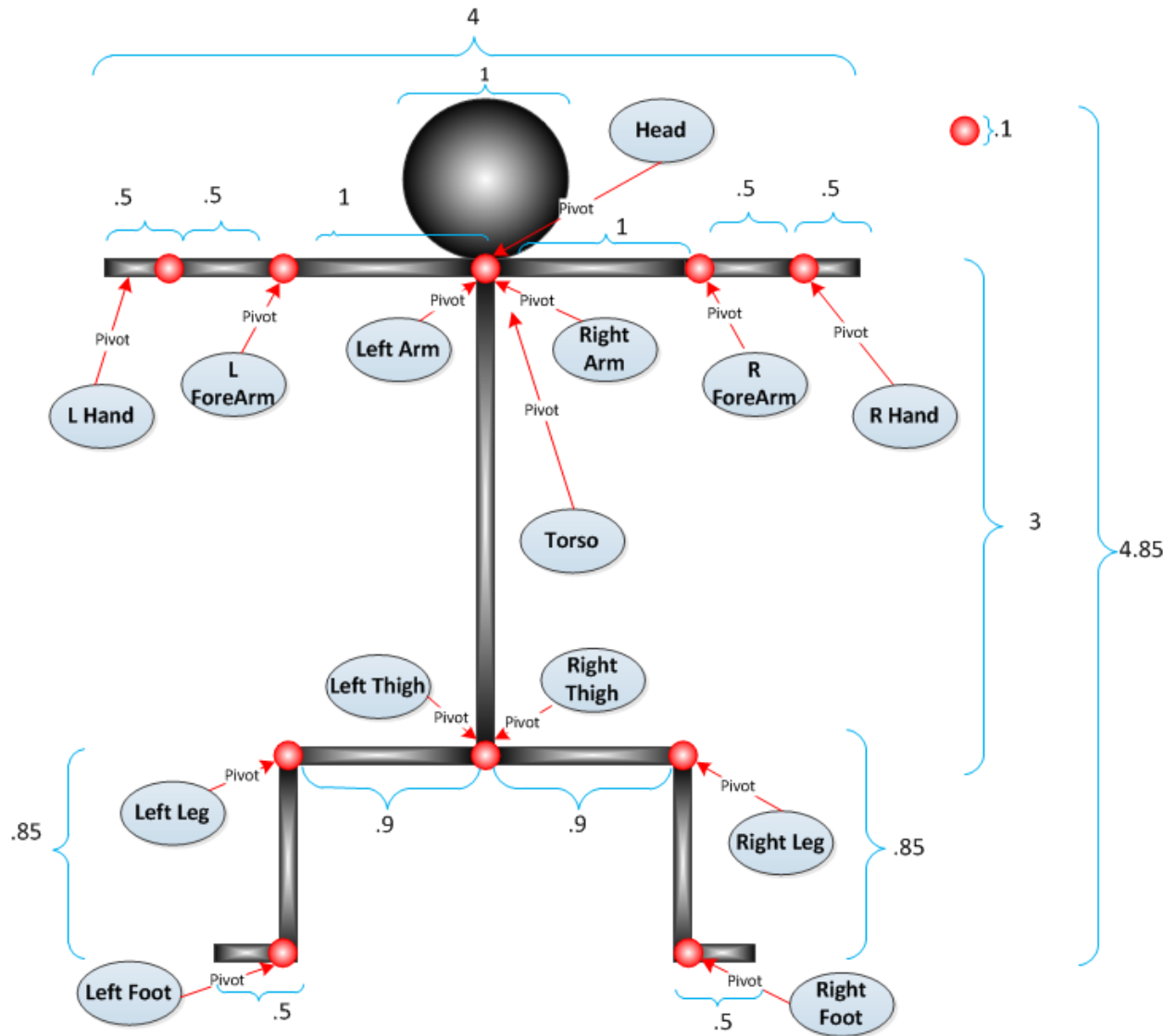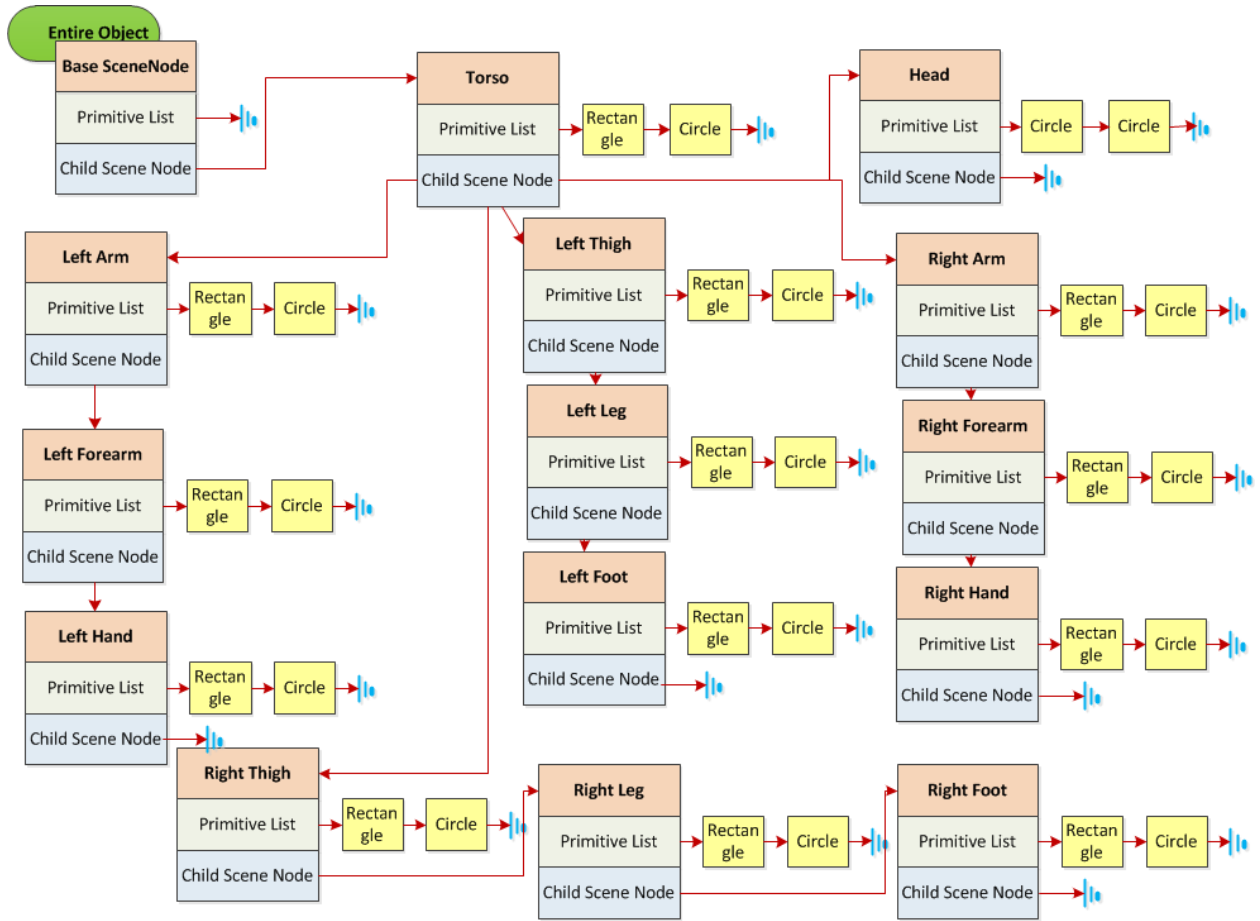
System Architecture

Figure 1 Hero Design

Figure 2 Hero SceneNode Architecture

Figure 3 Array of Keyframes

System Evaluation

Main Issues:
1. Translation is not working correctly
2. Timeline doesn't stop when Animation has completed
3. Keyframes at 0 cause animation to disappear
4. After pressing STOP button, animations continuously rotate or keep translating off screen

Cases to Reproduce Issues:
1. Set a keyframe with the character in the upper left hand corner, press play. Then press replay after the animation finishes. Each subsequent press of replay seems to calculate the total translation differently. We are assuming this is related to the world bounds we had setup. Instead of centering the character at 0,0, we set the bottom left corner of the screen to 0,0.
2. Currently there is no code stopping the timeline from moving forward, should be a quick fix if we had the time.
3. Set a keyframe when the timeline is at 0, then play. The character will disappear entirely. This seems to be the result of the translation between frames, since they have the same timestamp
4. Set a keyframe with the character in the upper left hand corner, press play, then stop, then play again. The character translates beyond the bounds of the screen upon hitting play a second time, replay as well. We aren't exactly sure why this is occuring. It happens with the rotation as well. Anytime Stop is pressed, all playback afterward is inifinite.

Additional Features for next iteration:
1. Modulatiry - in a future update the first step should be to make the animation controls more stand-alone by creating classes for each control and using the UWB libraries objects, such as the UWB_SceneNode to interface with the controls.

2. Clear Animation control - in a future update we would need a button that would clear out the current animation and provide a new setup.
3. Undo - self explanitory, an undo button that goes back a step at a time.
4. Reset without playing control - a control that would reset the animation to the beginning without having to play
5. Ability to insert keyframes - currently we cannot insert keyframes into the animation, any new keyframe has to be after the last one.
6. Hot-Keys - addition of hotkeys that would do basic tasks like switch between the rotation and translation selections, etc.