**8 Rig the Soccerball**

**Target：**

1. Build desktop, alt-drag soccerball\_geo, rename soccerball\_anim；
2. Add Null[,soccerball\_anim], rename soccerball\_ctrl.Misc tab set Control Type = Circles, Orientation = ZX Plane, Display Uniform Scale = 4,Turn off soccerball\_anim selection flag；
3. Select soccerball\_ctrl node, Copy Translate X,Dive into soccerball\_anim, Add Transform node [subdivide, matchsize].RMB-click Rotate Z,Paste Relative References；
4. Change to -ch(“../../soccerball\_ctrl/tx”)\*360/(2\*$PI\*1.1)；
5. Back, add Null node[soccerball\_ctrl], rename squash\_ctrl,Set Misc tab Contrl Type = Box, Display Uniform Scale = 0.2. Move the Node up, Translate Y = 2.5, Modify Pre-Transforms > Clean Translates；
6. Copy Translate Y；
7. Go into soccerball\_anim, add Bend node[matchsize,]. Turn Off Limit Deformation to Capture Region;

Go to Right View, click Set Capture Region. Turn on Grid Snapping, place a point at the base of the ball and another at the top. This should set Up Vector to 0, 0, 1, Capture Direction to 0, 1, 0 and Capture Length to 2.2.

Turn on Length Scale and Preserve Volume then RMB-click on Length Scale and choose Paste Relative References. Add a +1 at the end of the expression.

1. Select the soccerball\_ctrl object. Lock all the channels except Translate X and Translate Y.

Select the squash\_ctrl object. Lock all the channels except Translate Y；

1. Null；

**UI：**

**Nodes：**

**Null object node**

Serves as a place-holder in the scene, usually for parenting. this object does not render.

**Transform**

变换