

```

#Composite Mould Tool
import viz
import vizuniverse
import viztracker
import vizact
import vizinput
import vizshape
import projector
import math
import viztrackerutils

viz.setMultiSample(4)
viz.fov(60)
viz.go()

#Main view
viz.MainView.setPosition([-1, 1, 0.5])
viz.MainView.setEuler([90, 30, 0])
# Enable physics
viz.phys.enable()
#Decrease the force of gravity
viz.phys.setGravity(0, -9.810, 0)

#Background colour
#viz.clearcolor(viz.BLUE)
#Add a sky with an environment map.
env = viz.add(viz.ENVIRONMENT_MAP, 'sky.jpg')
dome = viz.add('skydome.dlc')
dome.texture(env)

Ground = viz.addChild('ground.osgb')
Ground.collidePlane()
Ground.disable(viz.PICKING)

Table1=viz.addChild('VR Models\Table.wrl', color=viz.BLUE)
#idea: use variables instead of constants
#originTranslate = [0,1,0]
#originRotate = [0,90,0]
Table1.setEuler(0,90,0, viz.ABS_LOCAL)
Table1.setPosition(0,0.9,0)
#Table1.collideMesh()
#disable picking of table
Table1.disable(viz.PICKING)
#Add physics object
Table1.disable(viz.DYNAMICS)
Table1Phys = Table1.collideBox(bounce=0,friction=0.00000001 )
Table1.enable(viz.COLLIDE_NOTIFY)

Table2=viz.addChild('VR Models\Table1.wrl', color=viz.PURPLE)
Table2.setEuler(0,90,0, viz.ABS_LOCAL)
Table2.setPosition(0,0.9,1)
#Table2.collideMesh()
#disable picking of table
Table2.disable(viz.PICKING)
#Add physics object
Table2.disable(viz.DYNAMICS)
Table2Phys = Table2.collideBox(bounce=0,friction=0.00000001 )
Table2.enable(viz.COLLIDE_NOTIFY)

```

#holder component

```
Holder=viz.addChild('VR Models\Holder Only.wrl')
Holder.setEuler(0,90,0, viz.ABS_LOCAL)
Holder.setPosition(0,0.9,0)
Holder.collideMesh(bounce=0,friction=0.00000001, density=5 )
Holder.enable(viz.COLLIDE_NOTIFY)
Holder.enable(viz.CONTACTS)
Holder.disable(viz.DYNAMICS)
```

#Discs

```
Disc1=viz.addChild('VR Models\Bottom Disc.wrl', color=viz.GREEN)
Disc1.setEuler(0,90,0, viz.ABS_LOCAL)
Disc1.setPosition(0,0.901,0)
Disc1.disable(viz.INTERSECTION)
Disc1.collideBox()
Disc1.enable(viz.COLLIDE_NOTIFY)
Disc1.enable(viz.CONTACTS)
```

```
Disc2=viz.addChild('VR Models\Middle Disc.wrl', color=viz.ORANGE)
Disc2.setEuler(0,90,0, viz.ABS_LOCAL)
Disc2.setPosition(0,0.902,0)
Disc2.collideBox()
Disc2.enable(viz.COLLIDE_NOTIFY)
Disc2.enable(viz.CONTACTS)
```

```
Disc3=viz.addChild('VR Models\Top Disc.wrl', color=viz.YELLOW)
Disc3.setEuler(0,90,0, viz.ABS_LOCAL)
Disc3.setPosition(0,0.903,0)
Disc3.collideBox()
Disc3.enable(viz.COLLIDE_NOTIFY)
Disc3.enable(viz.CONTACTS)
```

#arrow instead of mouse cursor

```
arrow = viz.addChild('arrow.wrl')
arrow.setScale([0.1,0.1,0.1])
arrow.visible(viz.OFF)
arrow.disable( viz.DYNAMICS )
arrow.disable( viz.PHYSICS )
```

#link the hand to a 3D mousetracker

```
mousetracker = viztracker.MouseTracker()
mousetracker.scroll(-8)
viz.link(mousetracker,arrow)
```

#turn off mouse navigation and hide cursor

```
viz.mouse(viz.OFF)
link = None #remove any object links
```

```
def pickObject():
```

```
    global link
    object = viz.pick()
    link = viz.grab(arrow,object)
```

```
def releaseObject():
```

```
    global link
    if link:
        link.remove()
        link = None
```

```
vizact.onmousedown(viz.MOUSEBUTTON_LEFT, pickObject)
vizact.onmouseup(viz.MOUSEBUTTON_LEFT, releaseObject)
Discs = [Disc1, Disc2, Disc3]
```

```
def onCollide(e):  
    print "collision!"  
    global Discs  
    #Did a screw hit the box?  
viz.callback( viz.COLLIDE_BEGIN_EVENT, onCollide )  
viz.collision(viz.ON)
```