

ITMO UNIVERSITY

V-REP (LAB 3)

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Step 1

- ✓ Import assembly from SW(.stl)
- ✓ Set orientation (X or Y is vertical) and press OK.

STEP 2

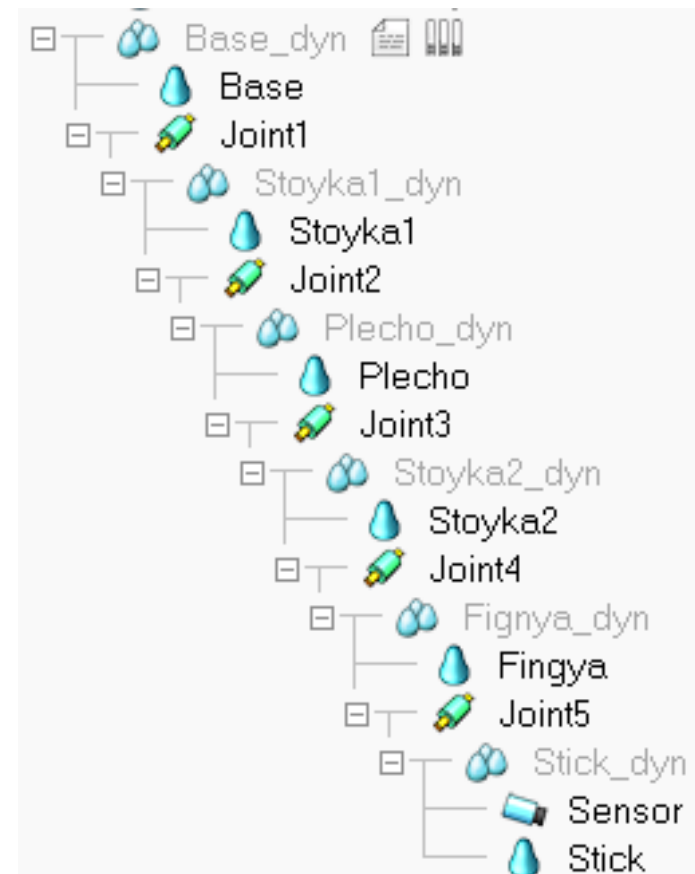
- ✔ Select all imported parts and generate “Convex Decomposition”
- ✔ Move all generated components to another layer.
- ✔ Turn off all layers except where layers with “Convex Decomposition”.

STEP 3

- ✓ Add “Revolute joint”s to scene.
- ✓ Set correct positions for this joints
- ✓ Set correct orientations

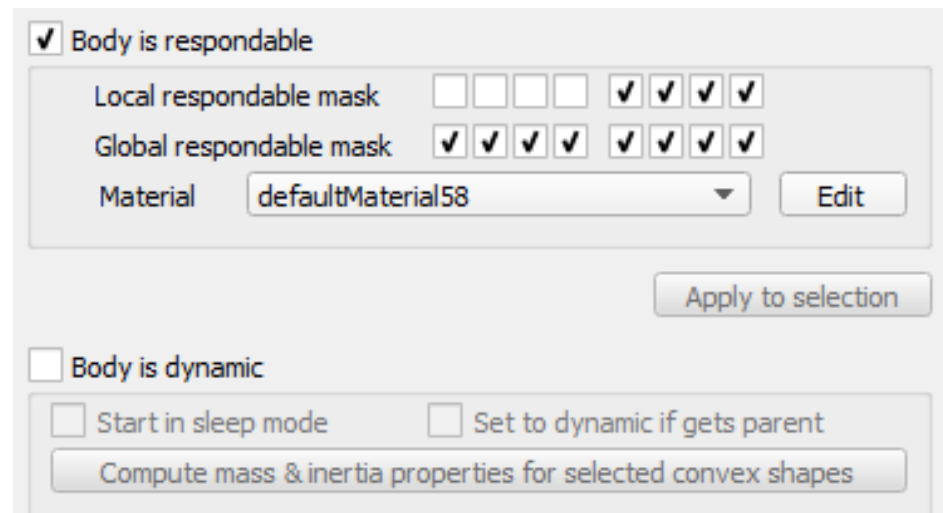
STEP 4

- ✓ Assembly of mechanical structure
- ✓ Connect all parts in scene hierarchy
- ✓ All parts should be connected through the revolute joints.



STEP 5

- ✔ Set properties for “Convex Decomposition” base part as not “Dynamic”.
- ✔ And tick as “responsible” also mask should be changed as shown on figure.



STEP 6

- ✓ For all other “Convex Decomposition” set properties as Dynamic and responsible.
- ✓ Mask of all near parts should be different.

STEP 7

- ✓ Add “vision sensor” to latest part (tip of manipulator).
- ✓ Add “Graph”
- ✓ Add “data stream” and rename it like “Red_str”

STEP 8: Scripting

```
if (sim_call_type==sim_childscriptcall_initialization) then
    sensor=simGetObjectHandle('Sensor')
End
```

```
if (sim_call_type==sim_childscriptcall_actuation) then
    bu,data=simReadVisionSensor(sensor)
    simSetGraphUserData(graph,'Red_str',data[11])
End
```

Scene Object Properties
x

Graph
Common

Main properties

<input type="checkbox"/> Explicit handling	Object size [m]	<input type="text" value="0.100"/>
<input checked="" type="checkbox"/> Buffer is cyclic	Buffer size	<input type="text" value="1000"/>
<input checked="" type="checkbox"/> Display XYZ planes	Remove all static streams/curves	

Time graph / xy graph properties

<input checked="" type="checkbox"/> Display grids	Adjust background color
<input checked="" type="checkbox"/> Display grid values	Adjust graduation/grid color

Data stream recording list

Add new data stream to record

Red [User data]

Data transformations

Value = Raw x +

Moving average period

Time graph properties

<input type="checkbox"/> Visible	<input type="checkbox"/> Show label	<input type="checkbox"/> Link points
Adjust curve color	Duplicate curve to static	

XY graphs / 3D curves

Edit XY graphs
Edit 3D curves

Scene Object Properties

Vision sensor
Common

Enable all vision sensors

Main properties

<input type="checkbox"/> Explicit handling	<input type="checkbox"/> External input
<input type="checkbox"/> Perspective mode	<input type="checkbox"/> Ignore RGB info (faster)
<input type="checkbox"/> Use local lights	<input type="checkbox"/> Ignore depth info (faster)
<input checked="" type="checkbox"/> Show fog if enabled	<input type="checkbox"/> Packet1 is blank (faster)

Render mode: OpenGL

Near / far clipping plane [m]: 5.00e-02 / 1.00e+00

Persp. angle [deg] / ortho. size [m]: 00.0100

Resolution X / Y: 4 / 4

Entity to detect: [Shape] Cuboid

Adjust default image color

Apply to selection

Visual properties

Object size X - Y - Z [m]: 0.010 - 0.010 - 0.030

Show volume when not detecting Adjust color (passive)

Show volume when detecting Adjust color (active)

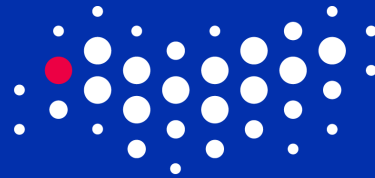
Apply to selection

Image processing and triggering

Show filter dialog

Questions?

✓ Some time for talking...



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Thank you for attention!

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