

ITMO UNIVERSITY

V-REP (lecture 3)

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Regular API functions

- ✓ Use this functions to work with Object. They are available with description in help file.
- ✓ They can also be found online on the website [coppelia robotics](http://coppelia.com).

Mesh editor

In V-Rep we have built-in MESH EDITOR.

Usually we don't use this tool, but some time need more precise calculation and this tool can help us to make our mesh smallest.

Mesh editor mode

There are 3 modes: Edges, Vertex and Triangles.

- ✓ If you select a group of items that are only available in edit mode edges.
- ✓ To open edit mode of the triangles, you need to Ungroup the item and select a single item group.
- ✓ For single shape are available all three editing modes.

Primitive shapes building in V-REP

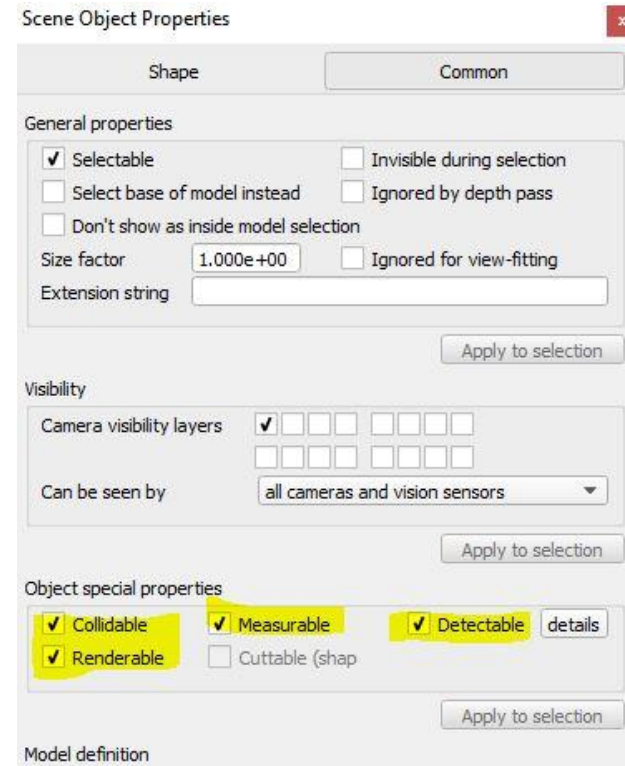
- ✓ In V-REP we can create such simple shapes as a disc, rectangle, cuboid, cylinder and sphere using the command "Add"-> "Primitive Shape".
- ✓ Now let's add in our stage standard cube of size 2x2x2.
- ✓ Repaint our cube in red.
- ✓ And put it so that our sensor saw it.

Problems?

- How to change color?
- My sensor is not detecting the cuboid?
- It does not work...

Change color

- ✓ Available in properties
- ✓ Detectable and all special properties..



The work of scripting: Reading data from the sensor

```
sensor=simGetObjectHandle('vision_sensor')
```

```
bu=simReadVisionSensor(sensor)
```


Scripts: Output data for graph

```
graph=simGetObjectHandle("graph1")
```

```
simSetGraphUserData(graph,'Red',bu)
```

Add New Data Stream-> Data Stream Type ->
Various: User Defined

Item to Record: User Data

Don't forget to rename the name of the 'data stream' to 'Red' in the properties 'graph1'.

Scripts: other operations

The conditional operator "IF"

```
if (a<0 or b==0) then
```

```
    k=0
```

```
End
```

The operators "While" loop and "For"

```
for i=1,13,1 do
```

```
    k=k+1
```

```
End
```

```
while true do
```

```
    Break
```

```
end
```

Set mass and moments of inertia

- Select all dynamic objects
- Open the dynamic properties (Properties->Show dynamic properties)
- And profiting from "calculate mass and inertia.." (Compute mass and inertia properties)

How to change the size of the model

- ✓ Model Browser -> Examples -> Simple ackermann Steering.
- ✓ Then select this model and in the properties change the size of the model. Properties -> General-> Scaling -> 0,25-> Ok.

Questions?

- ✓ Some free time for talking...



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Thank you for attention!

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