# Installing the software tools

## Installing CoppeliaSim

Download version 4.2.0 of CoppeliaSim from

<https://www.coppeliarobotics.com>’

for your particular operating system.

## Installing MATLAB

Install MATLAB …

Any recent (19a onwards) version of MATLAB should be fine. This has not been tested with 22bPRE.

# Firing up CoppeliaSim and the link to MATLAB

For the next bit we focus on the CoppeliaSim app, in particular the windows at the below the main simulator canvas

Graphical user interface, text, application

Description automatically generated

Enter a single line Lua command (Lua is a scripting language with a C-like language syntax)

Graphical user interface, text

Description automatically generated with medium confidence

simRemoteApi.start(19999)

Then hit enter, and you should get this

Text

Description automatically generated

A return a value of 1 indicates all is good.

Note that CoppeliaSim remembers previous commands in the command input window, so up-arrow will recall the previous startup command.

From the File menu select Open Scene… and navigate to the scene file EGB339\_robot\_prac.ttt.

CoppeliaSim should now look something like this:

A picture containing text, screenshot, indoor, computer

Description automatically generated

Start the simulator running, by clicking the triangular Run button in the top toolbar. The vision sensor window will now show the image from the virtual camera. You can move the vision sensor window around on the CoppeliaSim canvas.

Now fire up MATLAB and change to the Simulation folder

>> sim = coppeliaRobot();

Creating robot

Connecting to Simulator

Note: always make sure you use the corresponding remoteApi library

(i.e. 32bit Matlab will not work with 64bit remoteApi, and vice-versa)

Connected to remote API server

Successfully connected to API server

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and CoppeliaSim will also indicate that the connection is established.

Graphical user interface, text

Description automatically generated

sim is a MATLAB object that contains all the state associated with the connection to CoppeliaSim.

**Have a look at the file coppeliaRobot.m and the methods within it. You can take a picture or send motion commands to the joints.**

To close the connection to the simulator simply

>> clear sim

Closing connection to sim

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There is no particular need to do this, and once closed you can establish a new connection if you want.

# Problems?

The most common fault is getting a message like

>> sim = coppeliaRobot();

Creating robot

Connecting to Simulator

Note: always make sure you use the corresponding remoteApi library

(i.e. 32bit Matlab will not work with 64bit remoteApi, and vice-versa)

Failed to connect to remote API server

Closing connection to sim

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Check that you typed the correct Lua command into CoppeliaSim

Are you in the simulation folder? If not, change to that folder or put that folder on your MATLAB path.