Installation of V-REP

Download the installation .zip from
http://coppeliarobotics.com/files/V-REP_PRO_EDU_V3_3_2_64_Linux.tar.gz
Extract it into */home/username/*
Rename folder as *vrep*
Go inside: */home/username/vrep/compiledRosPlugins* and copy
"*ibv_repExtRosInterface.so*" and "*libv_repExtRos.so*" to /home/username/vrep
To execute the simulator, you have to go inside the directory
/home/username/vrep and type *./vrep.sh*

Setup of workspace for YouBot simulation and use
From the terminal:
cd /home/username
mkdir -p kuka_ws/src
cd kuka_ws/src
catkin_init_workspace

Now go inside vrep folder: */home/username/vrep/programming/ros_packages*
Copy all the folders inside and paste them in: /home/username/kuka_ws/src

In order to build the packages, navigate to the kuka_ws folder and type:
export VREP_ROOT=/home/username/vrep
catkin build
The packages should have been generated and compiled to an executable or library.
Copy the created library files *.so* founded in /home/username/kuka_ws/devel/lib
Paste them in /home/username/vrep
Resource them with: source ~/kuka_ws/devel/setup.bash
The plugins are now ready to be used!
Check the status of vrep, navigate to vrep folder: /home/username/vrep
In one terminal start: roscore
In another terminal do: ./vrep.sh
If then you do rosnode list you should see the node /vrep
Install YouBot API for ROS
First you need to install ROS Indigo as it is described in the ros wiki. We recommend to use the ros-indigo-desktop or a more complete version.
To install the youBot API wrapper enter in a command shell:

```
sudo apt-get install ros-indigo-youbot-driver-ros-interface
sudo apt-get install ros-indigo-youbot-description
```

```
sudo setcap cap_net_raw+ep
/opt/ros/indigo/lib/youbot_driver_ros_interface/youbot_driver_ros_interface
```

```
sudo ldconfig /opt/ros/indigo/lib
```

Install the package vrep_youbot_plugin
Clone the repository into your catkin workspace
`cd /home/username/kuka_ws/src`
git clone https://github.com/mfueller/vrep_youbot_plugin
Navigate to `cd /home/username/kuka_ws/src/vrep_youbot_plugin`
And open the Cmakelists.txt, inside it choose as target libraries indigo, there are two lines to modify simply replace the name of distro with indigo
Compile it:
`cd /home/username/kuka_ws`
`catkin build`
`source ~/kuka_ws/devel/setup.bash`
The packages should have been generated and compiled to an executable or library.
Copy the created library files *.so* founded in `/home/username/kuka_ws/devel/lib`
Paste them in `/home/username/vrep`
Navigate to home folder and then give:
`echo 'source ~/kuka_ws/devel/setup.bash' >> .bashrc`
Edit your bashrc file adding this line
export VREP_ROOT=/home/username/vrep

Install the package ROS BRIDGE
Go to: `/home/username/kuka_ws/src`
And clone the following repository: `git clone`
https://github.com/lagadic/vrep_ros_bridge
Edit your bashrc file adding this line
export VREP_ROOT_DIR=/home/username/vrep

Then:
`source ~./bashrc`
`source ~/kuka_ws/devel/setup.bash`

Compile it:
`cd /home/username/kuka_ws`
`catkin build`

The packages should have been generated and compiled to an executable or library.
Copy the created library files *.so* founded in `/home/username/kuka_ws/devel/lib`
Paste them in `/home/username/vrep`

Now you should be able to use your kuka with no problems! You can also launch rviz to see data from scanner