e-Yantra Robotics Competition (eYRC 2016)

Task0 – Launch a Module

Software Installation - Instruction Sheet (for Linux user)

This file contains instructions to install following three softwares/libraries:

1. Python
2. NumPy
3. OpenCV

Note: Installation of software is tested on Ubuntu 14.04 distribution of Linux.

Please follow the steps given below:

1. Python and NumPy Installation

- ✓ Python and NumPy are pre-installed on Ubuntu.
- ✓ In order to verify the installation of Python and NumPy
  - Open Terminal, type *python* and press Enter
  - You should see the prompt as shown in Figure 1 below

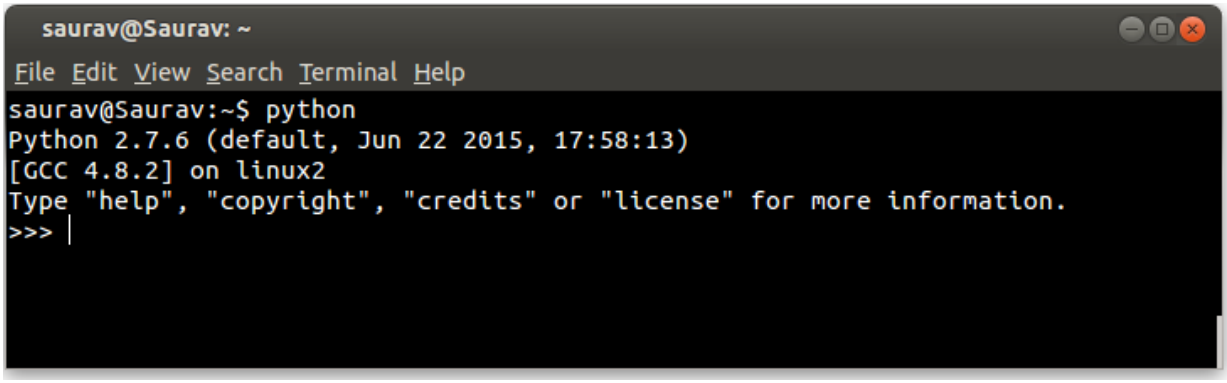

Figure 1: Command Prompt with Python running

- In Python Prompt, type *import numpy* and press Enter
- You should see the prompt as shown in Figure 2 below

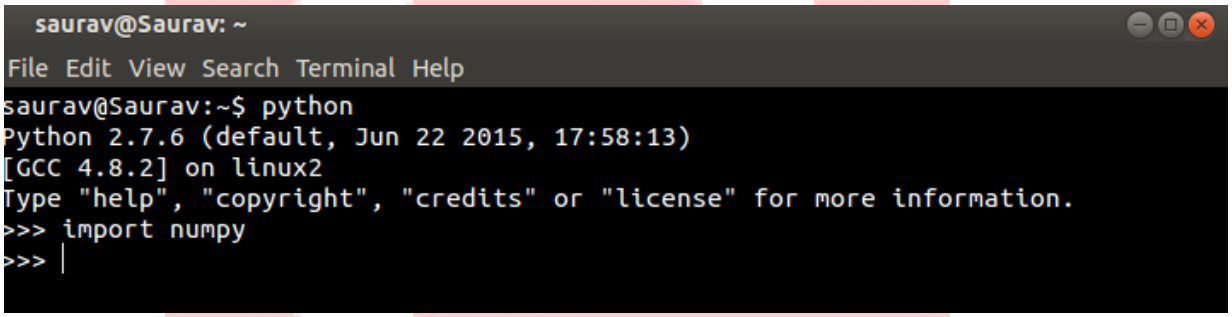

Figure 2: NumPy imported in Python prompt

2. OpenCV

   ✓ Open Terminal

   ✓ Type *sudo apt-get update*

   ✓ Type following command to install required packages

sudo apt-get install build-essential libgtk2.0-dev libjpeg-dev libtiff4-dev libjasper-dev libopenexr-dev cmake python-dev python-

numpy python-tk libtbb-dev libeigen3-dev yasm libfaac-dev libopencore-amrnb-dev libopencore-amrwb-dev libtheora-dev libvorbis-dev libxvidcore-dev libx264-dev libqt4-dev libqt4-opengl-dev sphinx-common texlive-latex-extra libv4l-dev libdc1394-22-dev libavcodec-dev libavformat-dev libswscale-dev default-jdk ant libvtk5-qt4-dev

- ✓ Download OpenCV 2.4.13 from here
- ✓ From Terminal, cd to folder where OpenCV is downloaded.
- ✓ In Terminal, type *unzip opencv-2.4.13.zip*
- ✓ In Terminal, type cd opencv-2.4.13
- ✓ In Terminal, type *mkdir mkdir build && cd build*
- ✓ We will Configure additional options for building opencv. Copy and Paste following command in terminal

cmake -D WITH_TBB=ON -D BUILD_NEW_PYTHON_SUPPORT=ON -D WITH_V4L=ON -D INSTALL_C_EXAMPLES=ON -D INSTALL_PYTHON_EXAMPLES=ON -D BUILD_EXAMPLES=ON -D WITH_IPP=OFF -D CMAKE_INSTALL_PREFIX=/usr ..

- ✓ Note: If above command return any error, try disable some options. For example BUILD_EXAMPLES=OFF
- ✓ In Terminal, type *make*
- ✓ In Terminal, type *sudo make install*

✓ In order to verify your installation,

- In Terminal, type *python* and press Enter. This will open Python Prompt
- In Python Prompt, type *import cv2* and press Enter
- You should see the prompt as shown in Figure 3 below

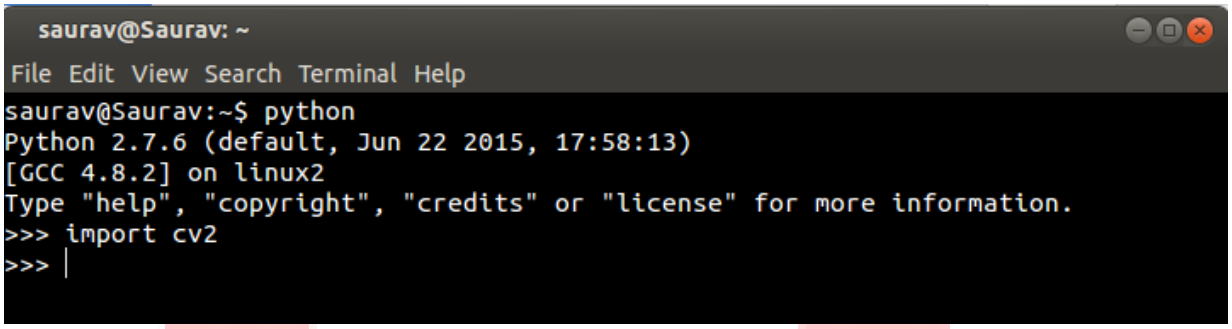

Figure 3: OpenCV imported in Python prompt