

## Environment

An environment has to be set up in order to prepare the contents of the class. [Docker](#), [Git](#) and [Real VNC Viewer](#) are mainly used. Command line commands are written in **bold**. You should have 8 GB free disk space.

### Step 1: Install Docker

- [Windows & Mac](#)
- [Ubuntu](#)
- Location of docker files and memory usage can be configured ([Windows](#), [Mac](#), [Ubuntu](#))

### Step 2: Create Docker-Hub Account

- [Sign in](#) here

### Step 3: Pull Docker Image

- Open Command Prompt ([Windows](#), [Ubuntu](#), [Mac](#))
- Type **docker login** and press enter
  - If any error occur – [restart Docker](#)!
- Type **docker pull mati3230/modalg181**

### Step 4: Check Image

- Type **docker images**
- Type **docker run --rm -it --name test\_container mati3230/modalg181 python --version**
- Output: Python 3.5.5

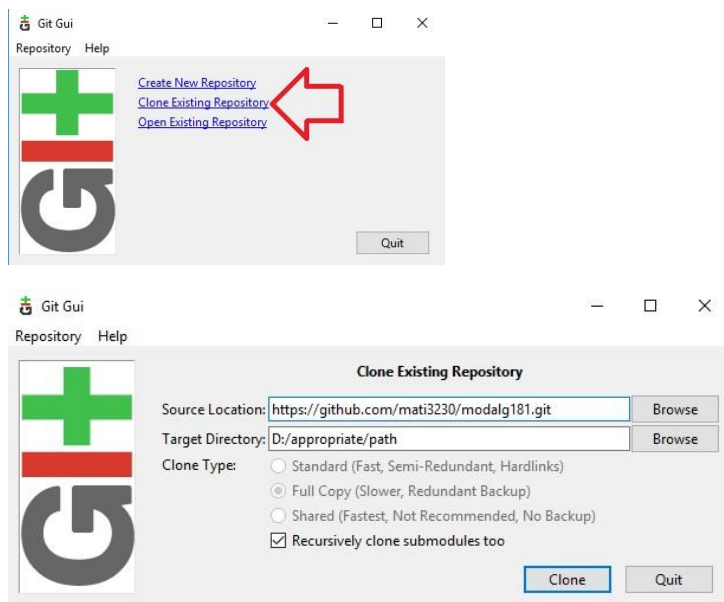
### Step 5: Install Git

- [All operating systems](#)
- [More information](#) on how to install git

### Step 6: Clone Repository

- Clone using [Git Bash](#)
  - Open Command Prompt ([Windows](#), [Ubuntu](#), [Mac](#))
  - Navigate to appropriate folder with - example: **cd D:/appropriate/path** (this example path will be used later in this document)
  - Type **git clone <https://github.com/mati3230/modalg181.git>**

- Clone using Git GUI



### Step 7: Check Repository

- Open Command Prompt ([Windows](#), [Ubuntu](#), [Mac](#))
- Type **docker run --rm -it --name test\_container -v D:/appropriate/path/modalg181:/modalg181 mati3230/modalg181 python /modalg181/test/test\_docker\_devel.py**
- Output:

test

test2

test3

- Type **docker run --rm -it --name test\_container -v D:/appropriate/path/modalg181:/modalg181 mati3230/modalg181 python /modalg181/test/test\_tensorflow.py**
- Output:

Tensor("Const:0", shape=(), dtype=float32) Tensor("Const\_1:0", shape=(), dtype=float32)

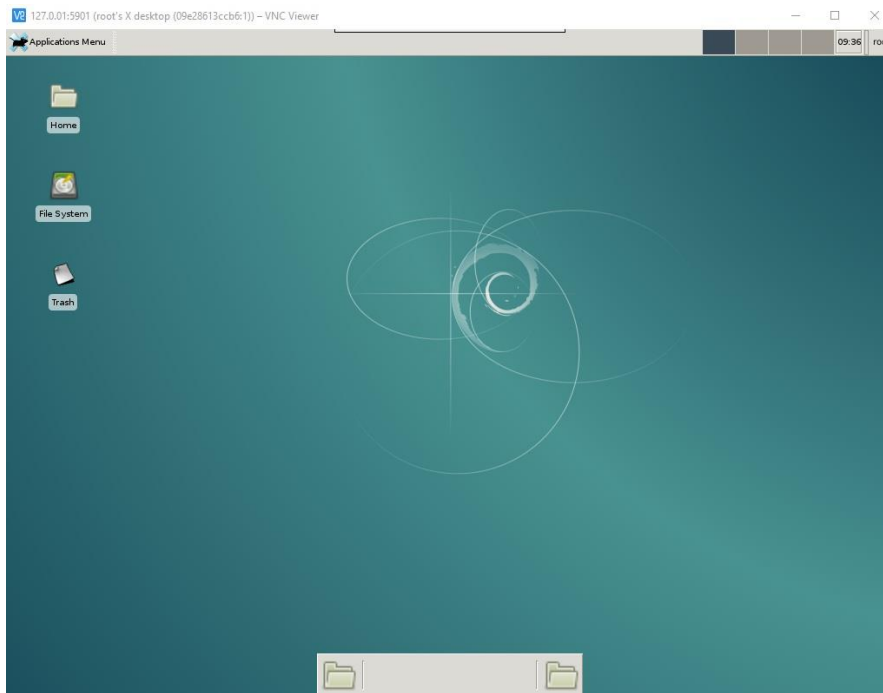
### Step 8: Install VNC-Viewer

- [About VNC](#)
- Install [Real VNC Viewer](#)

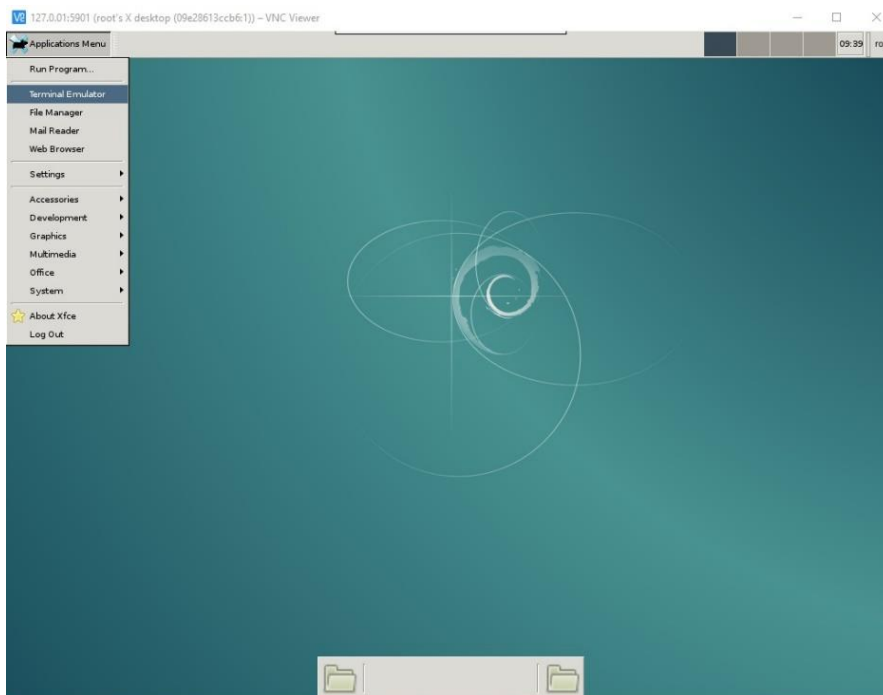
### Step 9: Check UI of Docker Image

- Type **docker run --rm -it --name test\_container -p 5901:5901 -v D:/appropriate/path/modalg181:/modalg181 mati3230/modalg181 bash**
- Type **vncserver**
- Start the [Real VNC Viewer](#) installed in Step 8
- Type in VNC-Server-Address **127.0.0.1:5901** and press enter
- Press continue in case of a warning
- Type password **12345678**

- Output:

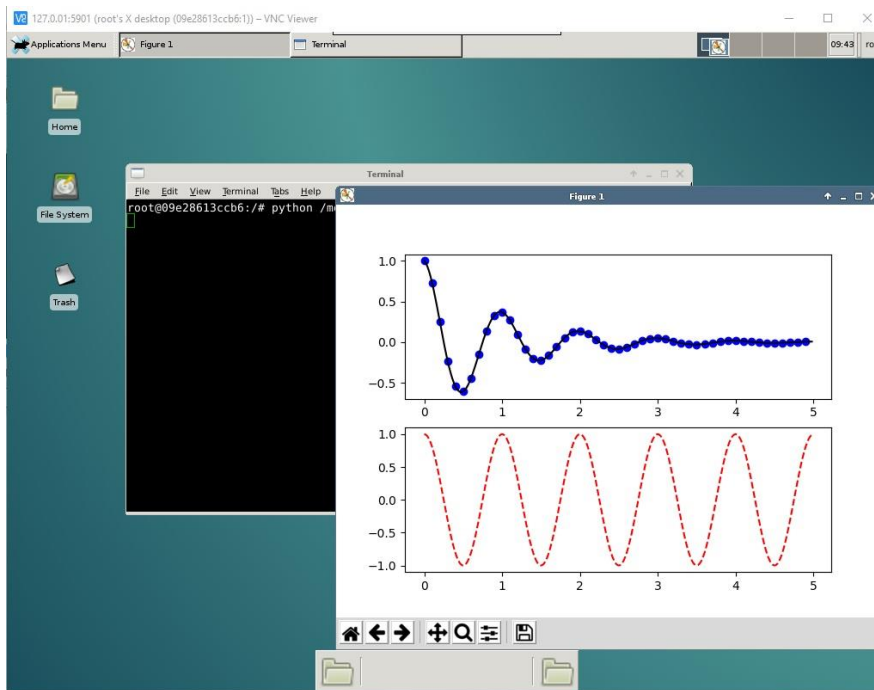


- Open Terminal:

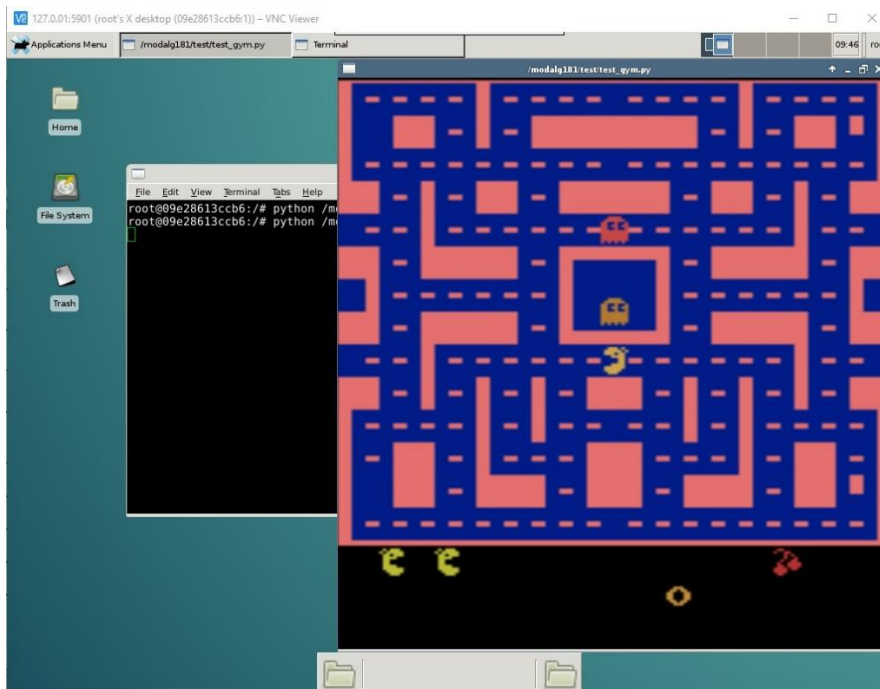


- Type: `python /modalg181/test/test_plot.py`

- Output:



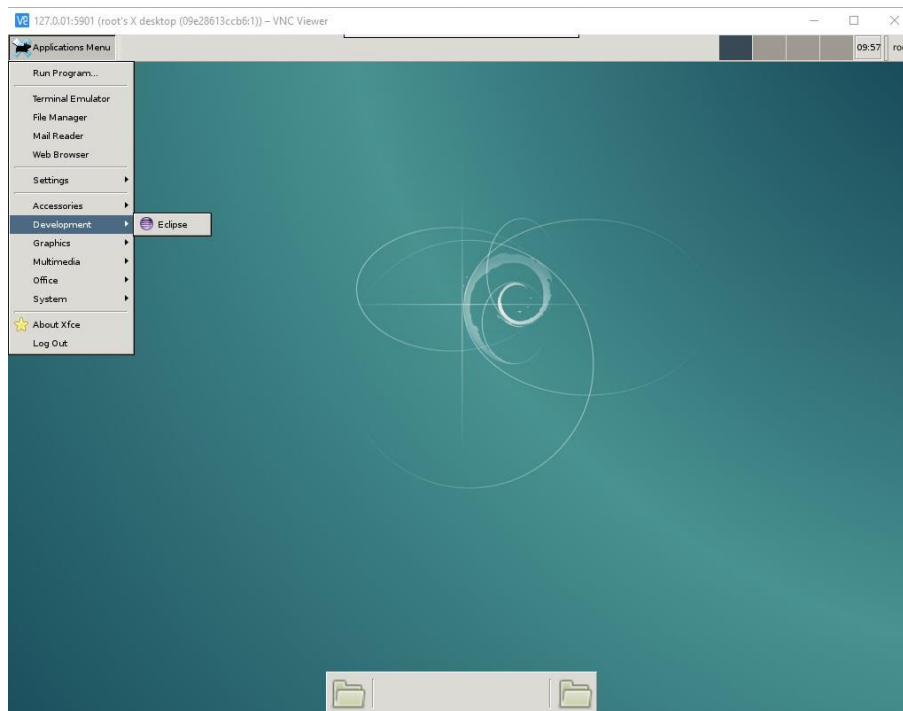
- Close the plot window
- Type `python /modalg181/test/test_gym.py`
- Output:



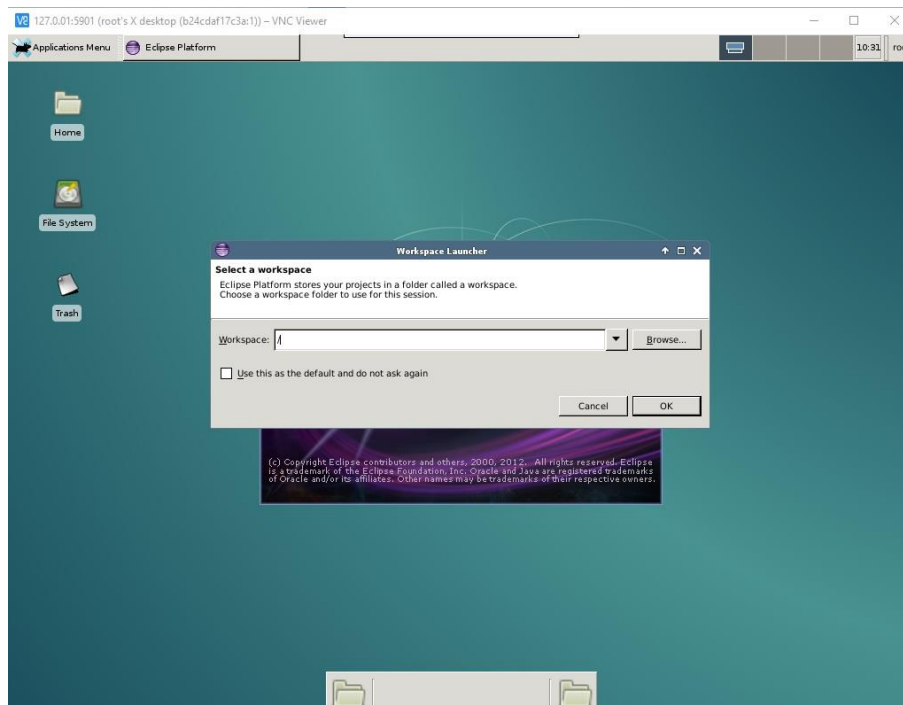
- Close the [Real VNC Viewer](#) window
- Type in the bash of first step under Step 9 `vncserver -kill :1`
- Type `vncpasswd` to change the password
  - Answer “Would you like to enter a view-only password (y/n)?” with **n**
- Type `exit` to close the bash

## Step 10: Start the IDE

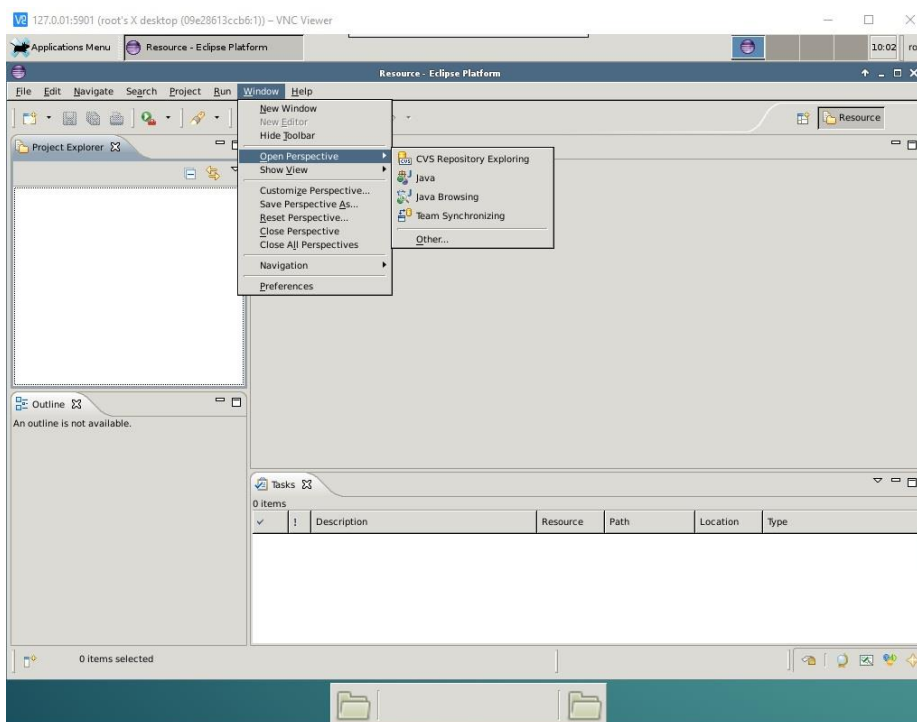
- Bring up the UI with steps described under Step 9
- Start eclipse



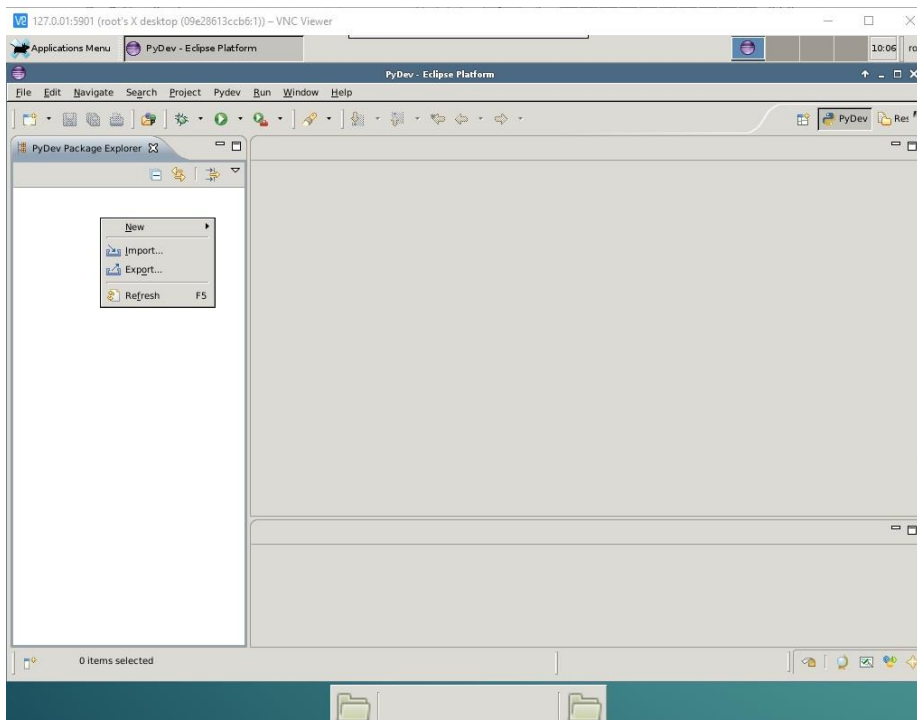
- Set Workspace to /



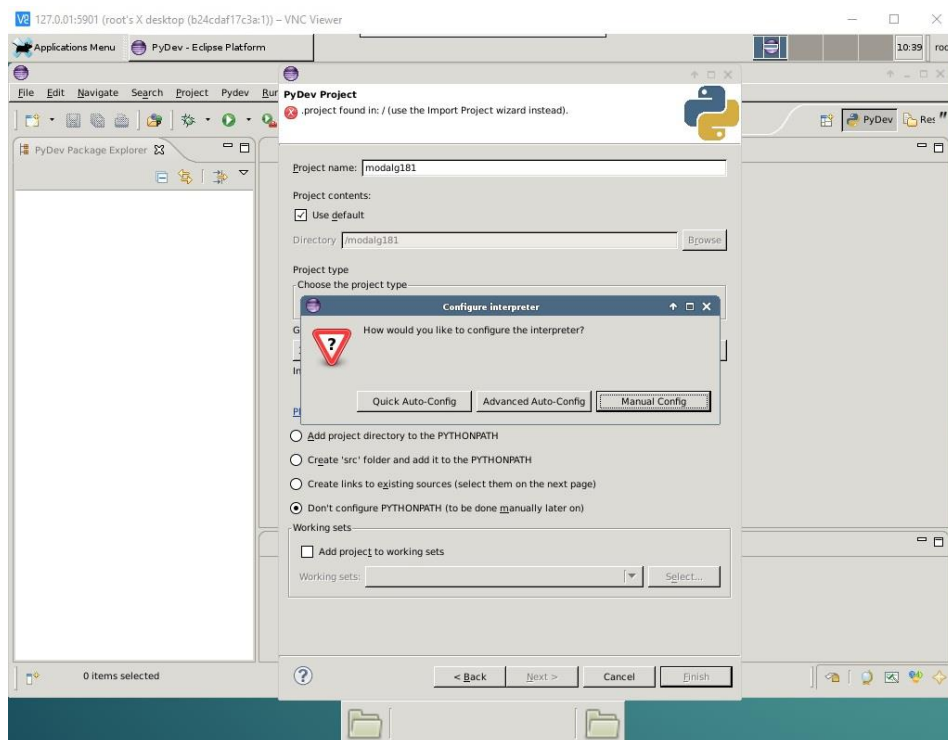
- Press **OK**
- Click on **Workbench**
- Go to **Window/Open Perspective/Other...** under menu bar



- Select **PyDev** and click **OK**
- Click with right mouse button in **PyDev Package Explorer** and click **New/Project...**
- Select **PyDev/PyDev Project** and click **Next >**

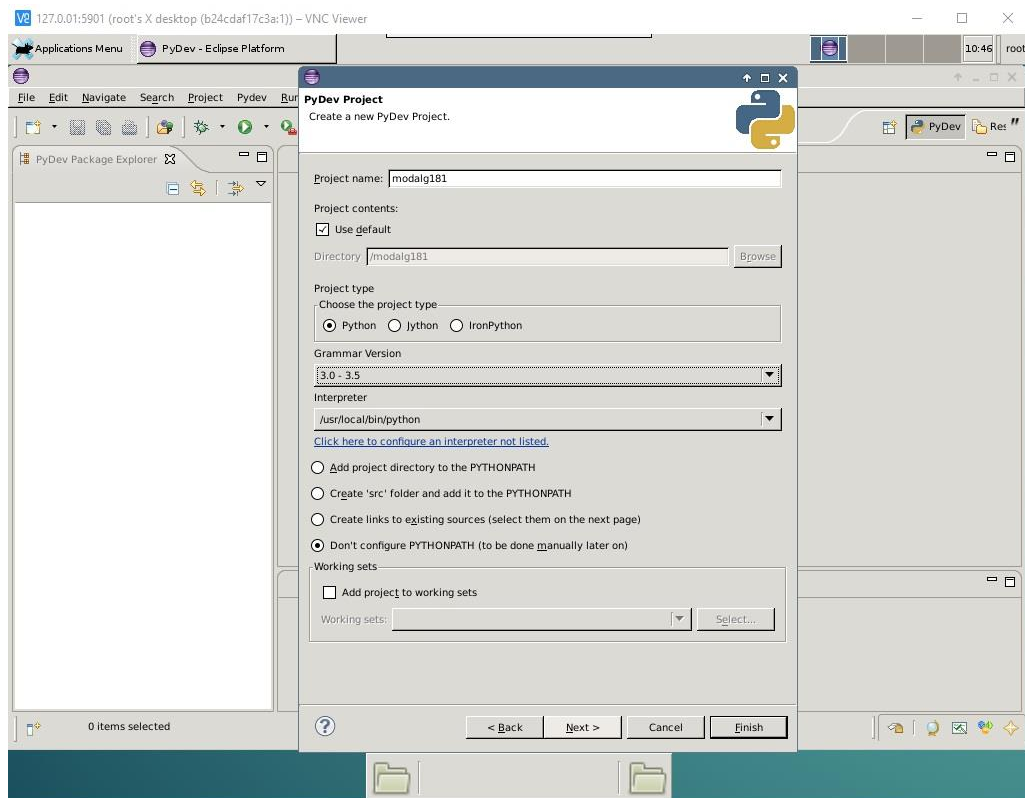


- Type Project name: **modalg181**
- Select **Gamma Version 3.0 – 3.5**
- Select Checkbox **Don't configure PYTHONPATH (to be done manually later on)**
- Click **Please configure an interpreter before proceeding** and click on button **Manual Config**

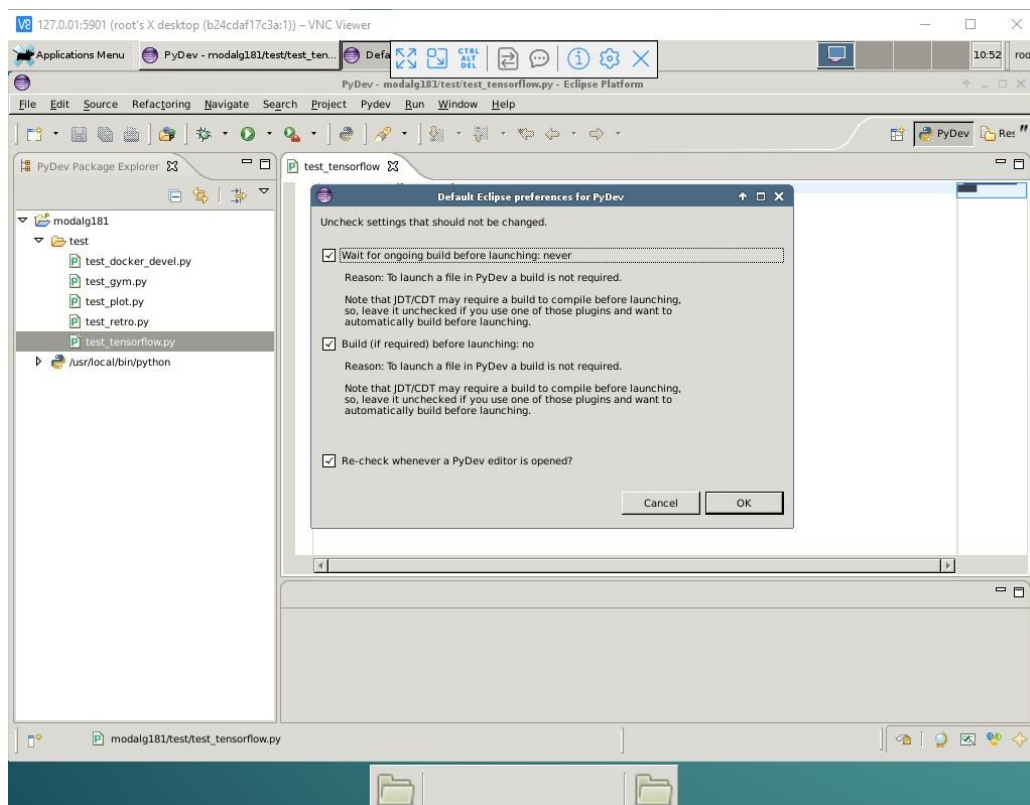


- Click on button **New...**
- Type in box Interpreter Name: **/usr/local/bin/python**
- Type in box Interpreter Executable: **/usr/local/bin/python**
- Click button **Select All** and **OK**
- Click button **Apply** and **OK**

- Your configuration should look like this:

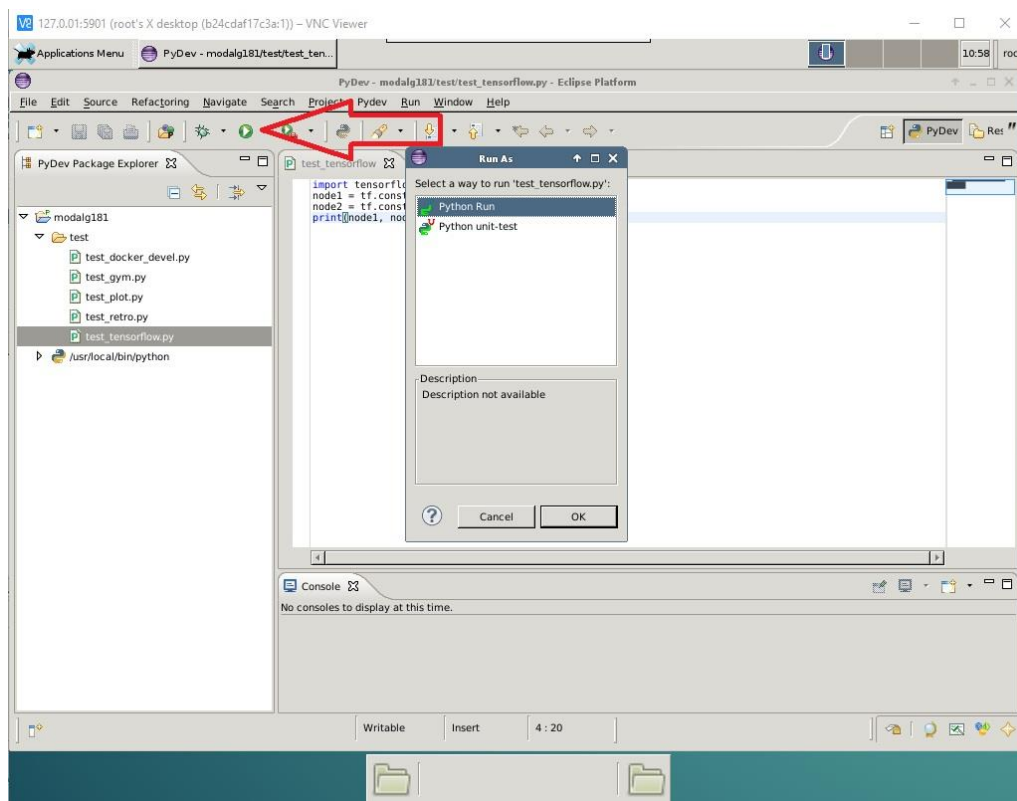


- Click button **Finish**
- Double-Click **modalg181/test/test\_tensorflow.py** in PyDev Package Explorer, skip news message and apply Default Eclipse preferences for PyDev with **OK**





- Go to **Window/Show View** in menu bar and click **Console**
- Click in test\_tensorflow code view and press **Run As...** button
- Select **Python Run** and click **OK**



- The Console should print:

Tensor("Const:0", shape=(), dtype=float32) Tensor("Const\_1:0", shape=(), dtype=float32)

- Close eclipse
- Close [Real VNC Viewer](#)
- Type in bash **vncviewer -kill :1**
- Press **STRG+p+q** to open terminal
- Type **docker commit test\_container my\_modalg**
- Type **docker attach test\_container** and press two times enter
- Type exit

### Step 11: Check your own Configuration

- Type **docker run --rm -it --name test\_container -p 5901:5901 -v D:/appropriate/path/modalg181:/modalg181 my\_modalg bash**
- You successfully saved an image with your own configuration
- If you now start eclipse with workspace / then project will be saved
- Close again VNC and **exit** container

## Step 12: Download Datasets

- Download datasets from [Nextcloud](#)



- Unzip to get example path **D:/appropriate/path/datasets/stars\_from\_google\_images**