Installing Docker on Raspberry Pi:

1) Download the official Docker installation script by running the following command.

```
curl -sSL get.docker.com -o get-docker.sh
```

2) Since it is a shell script, execute it by running the following command. The script will detect the Linux distribution, install the required packages, and start Docker. This script can take some time to complete as it automatically detects and installs everything it needs to run Docker on the Raspberry Pi. When it is completed the script will output information about the Docker version and how to use Docker as a non-root user.

```
sh get-docker.sh
```

3) By default, only a user with administrative privileges can execute Docker commands. To run Docker commands as a non-root user without prepending 'sudo' you'll need to add your user to the docker group which is created during the installation and so use the following command given below. Here my user name is 'pi'. Likewise, use your user name. After this command, you have to log out and log in for the changes to take effect.

```
sudo usermod -aG docker pi
```

4) After logging in, verify if the docker group has been added to your user by using the below command. This would list out all the groups that the current user is a part of. If everything worked as it should, the group docker should be listed here.

```
groups pi
```

5) Since we have added our user, we need not use the 'sudo' command every time we run a docker command. But in the video, I would have not logged

out and logged in for the changes to take effect, so I would use 'sudo' with the docker command. Next, we can test if the Docker is working. Run the following command which would tell Docker to download, setup and run a docker container called "hello-world". This would print a "Hello from Docker" message and exit.

```
docker run hello-world
```

Installing Node-RED on Docker:

1) Download the Node-RED image from the Docker hub by running the following command.

```
sudo docker run -it -p 8880:1880 --name laknr nodered/node-red
```

docker run - run this container... initially building locally if necessary

-it - attach a terminal session so we can see what is going on

-p 8880:1880 - connect local port 1880 to the exposed internal port 8880 (because I already have Node-RED running on my Raspberry Pi at the port 1880)

--name laknr - give this machine a friendly local name

nodered/node-red - the name of the image to base it on

2) You can detach the terminal with the container running in the background by pressing the keys -

Ctrl-P & Ctrl-Q

3) You can reattach to the terminal to see logging by running the command

```
docker attach laknr
```

4) Run the following command to restart the container (e.g. after a reboot or restart of the Docker daemon)

docker start laknr

5) And you can stop the container from running using the command

docker stop laknr