**Raspberry pi with USB Webcam**

**Required Materials:**

1. Raspberry pi
2. USB Webcam

First of all, you need to check if your webcam is getting detected in the raspberry pi and whether its feed can be viewed. For this, first, run the command “**lsusb**” in the terminal of the raspberry pi. This shows you a list of all the USB connected devices on the pi. Find out, from the list if your webcam’s name or software is displayed (sometimes driver name is displayed eg: Microdia for Iball webcams). Next, we need to check whether you can view the feed from the webcam on the pi. For this use “**cd /dev**” to go to /dev directory. Next, use “**ls**” to list its contents, check if “video0” is present.

**To install ffmpeg service, use these commands:**

**$** sudo apt-get install ffmpeg

$ ffplay –f video4linux2 –framerate 15 –video\_size 320x240 /dev/video0

The first command installs ffmpeg. The second commands start up the video having a frame rate of 15fps using the video4linux2 mode, having a resolution of 320×240 and using the device from /dev/video0. Once you run it, you will see the webcam feed on the monitor.

### Step 2: Setting Up the Video Streaming Service for the Webcam

Here, the video from the raspberry pi is broadcasted on the local network. Any device on this network can view the video from the webcam.To do this, you need to first install the mjpg streamer. Use these commands to install it:  
  
sudo apt-get install libv4l-dev  
sudo apt-get install libjpeg8-dev  
sudo apt-get install subversion  
sudo apt-get install imagemagick

libv4l-dev and libjpeg8-dev serve as dependencies, ImageMagick is used for installation whereas subversion is used for installing open source software. In order to download and compile the code use these commands:  
  
svn co https://svn.code.sf.net/p/mjpg-streamer/code/  
cd /home/pi/code/mjpg-streamer/  
make USE\_LIBV4L2=true clean all  
sudo make DESTDIR=/usr install

**Next, to run this service and to begin streaming use the following command:  
  
mjpg\_streamer -i "/usr/lib/input\_uvc.so -d /dev/video0 -y -r 640x480 -f 10" -o "/usr/lib/output\_http.so -p 8090 -w /var/www/mjpg\_streamer"**

* -i input plugin parameters
* -d represents the video device
* -y enables YUV format, disables MJPEG
* -r specifies the resolution
* -f is the frame rate
* -o output plugin parameters
* -p specifies the port number
* -w specifies output webserving directory

**http:192.168.1.7:8090/?action=stream**

edit the IPaddress “192.168.1.9” with the IP address of your raspberry pi