First, links to everything:

Download PiFm
http://www.icrobotics.co.uk/wiki/index.php/Turning_the_Raspberry_Pi_Into_an_FM_Transmitter
or http://www.instructables.com/id/Raspberry-Pi-Radio-Transmitter/?ALLSTEPS

Play mp3 on PiFm
https://docs.google.com/document/d/1URn_9QpnP9CjUq9fpjuMdpL6svTr8hoGThmilHePV5g/edit

Screen Commands
http://www.tecmint.com/screen-command-examples-to-manage-linux-terminals/

Make Linux Shell Script
http://www.linfo.org/create_shell_1.html

Now, instructions so this can be pain free, hopefully.

```
sudo apt-get update
sudo apt-get install screen
```

→ Screen allows you to SSH into Pi then make a screen (terminal shell) that you can detach from so when you turn off computer the script you had going doesn't terminate
→ Useful commands:
→→ `screen` (makes screen) → `Ctrl-A + D` (detach screen so you can log out)
→→ `screen -list` (lists all screens) → `screen -r` [name] (name from –list, this reattaches)

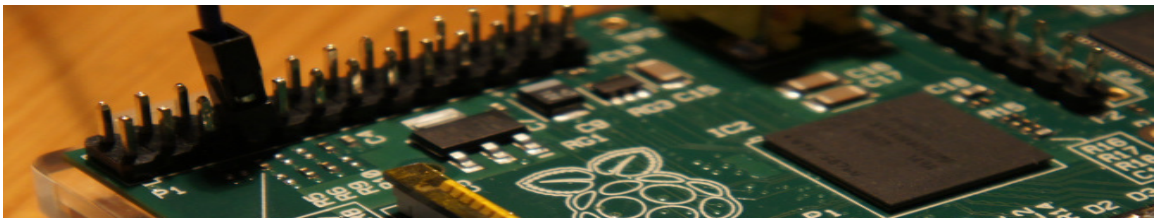
Quick look at my directory layout, made Applications and Music folder in ~ . Refer to this later.

```
pi@raspberrypi ~ $ cd Applications/PiFM/
pi@raspberrypi ~/Applications/PiFM $ ls && cd ~/Music/
left_right.wav  Mic.sh  mp3Play  pifm  pifm.c  PiFm.py  PiFm.pyc  sound.wav
pi@raspberrypi ~/Music $ ls && cd BoB/
BoB  Chance  Childish  Earl  Joey  Nas
pi@raspberrypi ~/Music/BoB $ ls
Airplanes.mp3  Dont Let Me Fall.mp3      Nothin' On You.mp3
Bet I.mp3      Ghost In The Machine.mp3  So Hard To Breathe.mp3
Circles.mp3    Magic.mp3                 The Kids.mp3
```

Get to folder you want. Mine is ~/Applications/PiFM/

```
wget http://omattos.com/pifm.tar.gz    # Download PiFm
tar -zxvf pifm.tar.gz                  # Decompress file
sudo ./pifm sound.wav 100.0            # Test to make sure all worked out
```

NOTE: To make your signal better, attach a wire to GPIO 4. This antenna makes it very powerful.
→ GPIO 4 is the 4th pin from the SD Card on the inside (The row closer to SD Card).



Add songs to ~/Music/ using FTP like FileZilla or other. PiFm can only play WAV to bypass that..

```
sudo apt-get install sox libsox-fmt-all  # Download all mp3-convert files
sox -v .9 -t mp3 SONG -t wav --input-buffer 80000 -r 22050 -c 1 - | sudo
./pifm - FREQUENCY     # Long command to play the mp3 SONG on FREQ mHz.
```

To avoid having to type this command every time I made an executable:

```
vim mp3Play   # sudo apt-get install vim if you have not yet

    ######## Following lines are the vim file – mp3Play ##########

#!/bin/bash

read –p "Enter song location: " song
read –p "Enter radio frequency: " freq

sox –v .9 –t mp3 ~/Music/$song –t wav ––input–buffer 80000 –r 22050 –c
1 – | sudo ./pifm – $freq

                    ######## File end ##########
```

Essentially, I just took the long command and used variable inserts for the song based on user prompts.
This script assumes all music is in ~/Music folder. I have artist folders inside that, you don't have to, but it is nice to stay organized.

Read gets user input. Also, note how variables are used. After made in read, called with $
However, trying to execute: `./mp3Play` will not work because it needs permissions so run

```
chmod 755 morning   # Allows read/write/execute permissions
```

Now here's a cool part. You could guess I'd be able to call a song like this:

```
pi@raspberrypi ~/Applications/PiFM $ ./mp3Play
Enter song location: BoB/Circles.mp3
Enter radio frequency: 99
```

That will play that one song, all is well. But that is a pain to type out and to have to do that every time sucks. **So how about this**:

```
pi@raspberrypi ~/Applications/PiFM $ ./mp3Play
Enter song location: BoB/*
Enter radio frequency: 99
```

Plays all songs by BoB
Refer to vim file if lost
Radio FM 99.0 mHz

Even better:

```
pi@raspberrypi ~/Applications/PiFM $ ./mp3Play
Enter song location: */*
Enter radio frequency: 99
```

Plays all songs by
All artists

Last example, my favorite. You can play around with combinations to find files or artists.
The lazy search for song:

```
pi@raspberrypi ~/Applications/PiFM $ ./mp3Play
Enter song location: */Airp*
Enter radio frequency: 99
```

Successfully plays:
~/Music/BoB/Airplanes.mp3

ENJOY