实现目的

1. 掌握 Acadia 或 RPi 或 WRTnode 和 PC 建立音频交互的方式；

实验器材

硬件

- Acadia 或 RPi 或 WRTnode 板一块；
- 5V/1A 电源一个；
- microUSB 线一根；
- USB-TTL 串口线一根（FT232RL 芯片或 PL2303 芯片）。

以下为自备（可选）器材：

- PC（Windows/Mac OS/Linux）一台；
- 声卡一个；
- 以太网线一根（可能还需要路由器等）。

软件

- PC 上的 USB-TTL 串口线配套的驱动程序；
- PC 上的串口终端软件，如 minicom、picocom、putty 等；
- PC 上的 SSH 软件，如 putty 等。

实验步骤

1. 安装 AirPlay 仿真器；
2. 运行 AirPlay；
3. 在 Acadia 或 RPi 或 WRTnode 上播放音乐。

AirPlay 默认有 HDMI 输出，而我们没有巨屏显示器，故只能更改为默认音频输出

更新系统软件源信息，安装 shairport 依赖包

安装 Perl NET-SDP 包

安装 shairport

```
pi@raspberrypi: ~

Setting up libmailtools-perl (2.09-1) ...
Setting up libmodule-build-perl (0.400100-2) ...
Setting up libmodule-signature-perl (0.68-1+deb7u1) ...
Setting up libnss-mdns (0.10-3.2) ...
First installation detected...
Checking NSS setup...
Setting up libregexp-common-perl (2011121001-1) ...
Setting up libpod-readme-perl (0.11-1) ...
Setting up libtext-template-perl (1.45-2) ...
Setting up libsoftware-license-perl (0.103004-2) ...
Setting up libssl-dev (1.0.1e-2+rvt+deb7u16) ...
Setting up libssl-doc (1.0.1e-2+rvt+deb7u16) ...
Setting up libwww-perl (6.04-1) ...
Setting up liblwp-protocol-https-perl (6.03-1) ...
root@raspberrypi:/home/pi# git clone https://github.com/hendrikw82/shairport.git
Cloning into 'shairport'...

error: RPC failed; result=52, HTTP code = 0
fatal: The remote end hung up unexpectedly
root@raspberrypi:/home/pi#
root@raspberrypi:/home/pi# git clone https://github.com/hendrikw82/shairport.git
Cloning into 'shairport'...
remote: Counting objects: 697, done.
remote: Total 697 (delta 0), reused 0 (delta 0), pack-reused 697
Receiving objects: 100% (697/697), 204.42 KiB | 100 KiB/s, done.
Resolving deltas: 100% (390/390), done.
root@raspberrypi:/home/pi# cd shairport
root@raspberrypi:/home/pi/shairport# make
cc -O2 -Wall   -c alac.c -o alac.o
cc -O2 -Wall   -DHAIRTUNES_STANDALONE hairtunes.c alac.o -o hairtunes -lm -lpthread -ls
sl -lcrypto -lao
```

开启 AirPort 服务

```
pi@raspberrypi: ~

t/10parse.t ..... ok
t/20repeat.t .... ok
t/30asstring.t .. ok
All tests successful.
Files=5, Tests=69,  7 wallclock secs ( 0.80 usr  0.06 sys +  3.09 cusr  0.17 csys =  4.
12 CPU)
Result: PASS
root@raspberrypi:/home/pi/shairport/perl-net-sdp# ./Build install
Building Net-SDP
Installing /usr/local/man/man1/sdp2rat.1p
Installing /usr/local/share/perl/5.14.2/Net/SDP.pm
Installing /usr/local/share/perl/5.14.2/Net/SDP/Media.pm
Installing /usr/local/share/perl/5.14.2/Net/SDP/Time.pm
Installing /usr/local/man/man3/Net::SDP::Media.3pm
Installing /usr/local/man/man3/Net::SDP.3pm
Installing /usr/local/man/man3/Net::SDP::Time.3pm
Installing /usr/local/bin/sdp2rat
root@raspberrypi:/home/pi/shairport/perl-net-sdp# ./shairport.pl -a ding
bash: ./shairport.pl: No such file or directory
root@raspberrypi:/home/pi/shairport/perl-net-sdp# cd shairport
bash: cd: shairport: No such file or directory
root@raspberrypi:/home/pi/shairport/perl-net-sdp# ./shairport.pl -a ding
bash: ./shairport.pl: No such file or directory
root@raspberrypi:/home/pi/shairport/perl-net-sdp# cd shairport
bash: cd: shairport: No such file or directory
root@raspberrypi:/home/pi/shairport/perl-net-sdp# cd /home/pi
root@raspberrypi:/home/pi# ls
Desktop  python_games  shairport  this_is_pi.txt
root@raspberrypi:/home/pi# cd shairport
root@raspberrypi:/home/pi/shairport# ./shairport.pl -a ding
Established under name 'C2EAA4C670CD@ding'
```