Server Report

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1 AudioInfo

An AudioInfo class object contains noise rate, average volume, latitude, longitude and id fields values which represent basic information of one recording file.

```
public class AudioInfo {

    double latitude;
    double longitude;
    int noiseRate;
    double currentVolume;
    int count=0;
```

2 Client side

On Client side, it records every 20s and generates a recording file in pcm format. Then it extracts an short array from .pcm file, calculates the average volume and assess noise rate by comparing different volume thresholds. It then stores values into an AudioInfo class object and then starts next recording. A send thread is responsible for sending a list of AudioInfo objects to server every 60s.

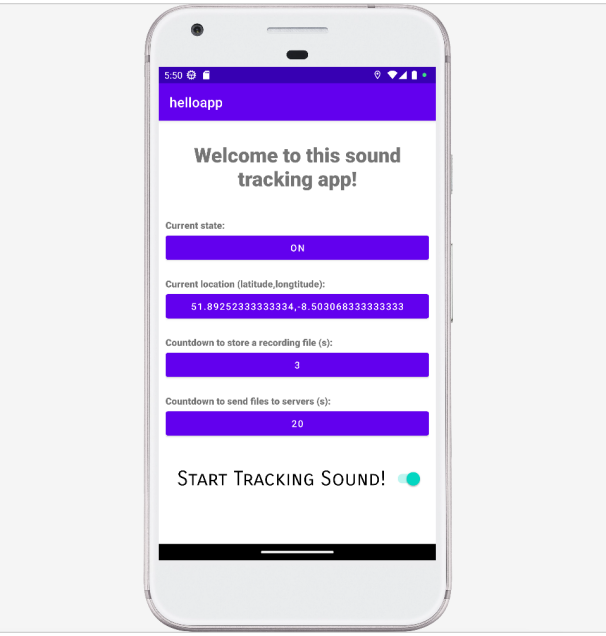

Figure 1: client

3 Server

On Server side, it receives the list of AudioInfo objects in json string format every 60s. when it receives data, it stores them into mysql database.

```
received[AudioInfoAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=2, currentVolume=226.29907112768706, count=6}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=3, currentVolume=319.05002569943406, count=7}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=2, currentVolume=296.75935675798445, count=8}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=2, currentVolume=262.16778533727364, count=9}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=2, currentVolume=241.04499421500358, count=10}

received[AudioInfoAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=2, currentVolume=222.17661647601477, count=12
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=4, currentVolume=487.25647203875167, count=13}

received[AudioInfoAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=3, currentVolume=359.1141793352125, count=14}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=2, currentVolume=241.7718485186212, count=15}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=1, currentVolume=150.9094766371181, count=16}

received[AudioInfoAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=2, currentVolume=217.2717580935897, count=17}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=2, currentVolume=214.2483243669542, count=18}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=5, currentVolume=512.3947564219702, count=19}

received[AudioInfoAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=3, currentVolume=327.9786521707806, count=20}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=4, currentVolume=467.14204210282765, count=21}
oAndroid{latitude=51.89252333333334, longitude=-8.503068333333333, noiseRate=1, currentVolume=147.1547656367376, count=22}
```

Figure 2: receive data log

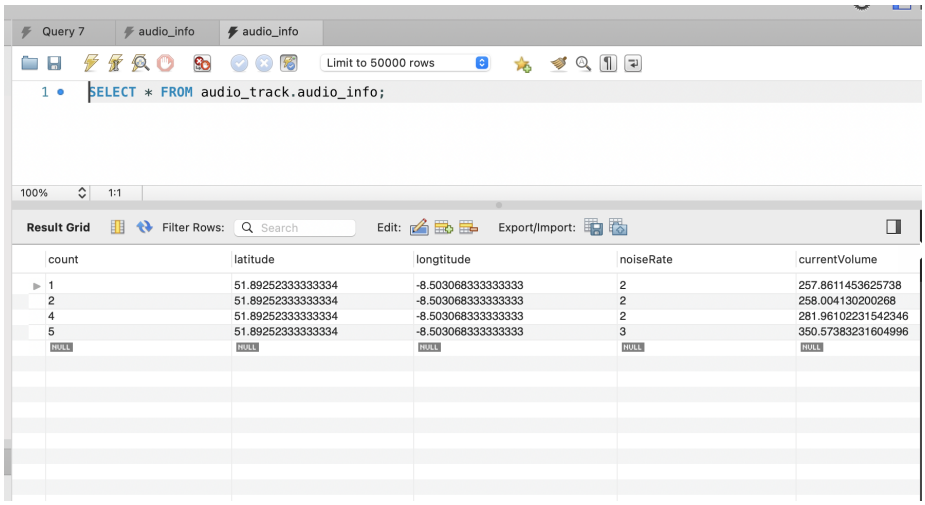

Figure 3: store in mysql

When a user type the request url "localhost:8080/index", the server will retrieve data from database and return a page with data.

The page contains a list of buttons with id. Each buttons corresponds to an AudioInfo object's id.

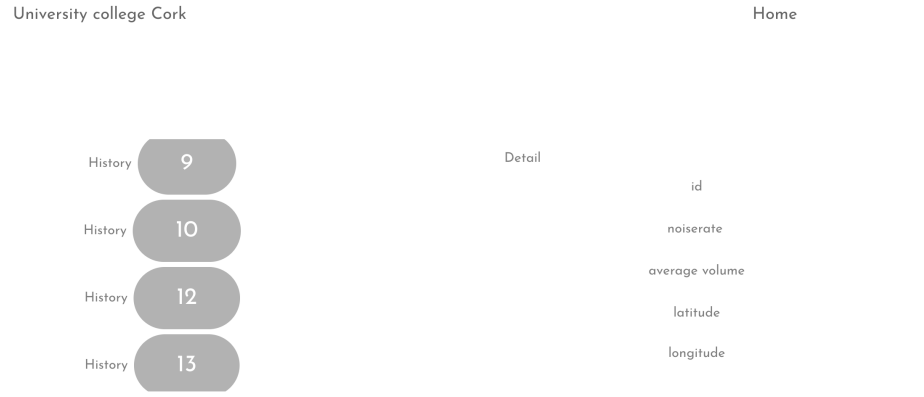

Figure 4: list of buttons

The page also includes a google map with marks on it where marks represent the locations stored in list of AudioInfo objects.

Figure 5: multiple marks of map

If a user clicks one button, the page will show detail information on the right side. Detail information includes noise rate, average volume, latitude, longitude values that an AudioInfo object contains.

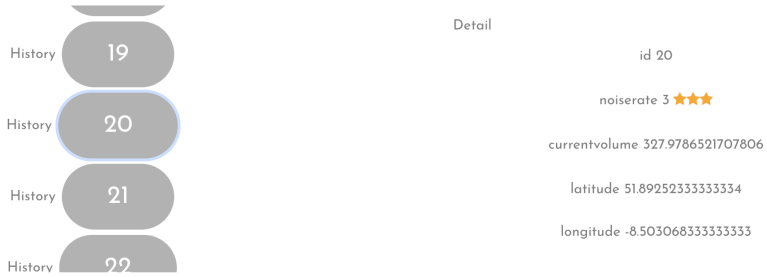

Figure 6: click No.20

Detail

id 20

noiserate 3 ★★★

currentvolume 327.9786521707806

latitude 51.89252333333334

longitude -8.503068333333333

Figure 7: detail of No.20

Meanwhile the center of google map will change along with the location values in detail information.

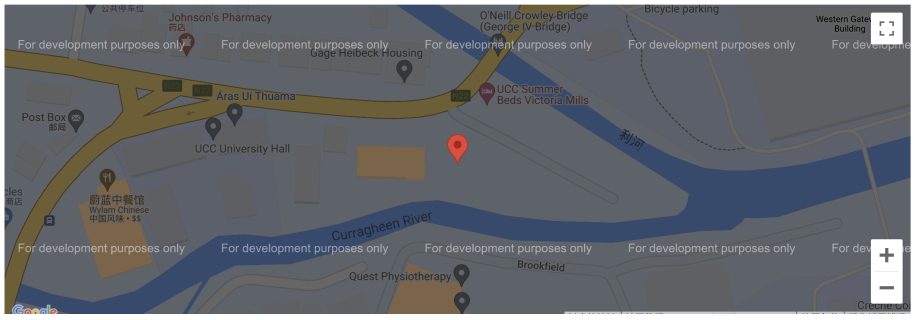

Figure 8: map location of No.20