Ulkoliikunta activity data

Data is last updated: 2022-03-01T09:05:01+0200

This directory contains experimental data from City of Helsinki's outdoor gyms.

Basic idea is to add a movement sensor to every outdoor gym equipment. Then the sensor data is read and sent to a cloud service for further analysis and archiving.

Current status

Currently there are sensors installed at 5 different outdoor gyms:

- Hietaniemi (online)
- Paloheina (online)
- Uimastadion (online, but closed in winter)
- Pirkkola (offline)
- Siltamaki (offline)

Online sites have a gateway, which collects and sends the data in real-time to cloud backend. Data from offline sites needs to be collected manually using a mobile application.

Raw data

Raw data is first stored into service provider's database from where it is retrieved to our local InfluxDB database.

It may look like this:

```
time                 collision_x collision_y collision_z humid motion_detected name pres   temp
----                 ----------- ----------- ----------- ----- --------------- ---- ------ ----
2020-12-07T13:34:56Z 14          14          23          67.31 1               21   1026.5 0.74
2020-12-07T13:34:48Z 0           0           0           67.75 0               25   1026   0.70
2020-12-07T13:34:42Z 0           0           0           68.80 0               19   1025.5 1
2020-12-07T13:34:27Z 0           0           0           67.87 0               02   1022.7 -0.8
2020-12-07T13:34:03Z 13          19          13          67.11 1               23   1025.8 0.37
```

A sample of raw data can be found in file hietaniemi-raw-sample.csv.gz (2021-08).

Processed data

Most coherent timeseries data is gathered from Hietaniemi, all other sites have device failures and other breaks in data. For this reason currently only Hietaniemi's data is available for public now.

And for privacy reasons raw data is not available, but it is aggregated by sensor per 10 minutes periods. This means there is a timestamp for every 10 minutes period which contains a value between 0 and 10 for every Hietaniemi gym equipment, which shows how many minutes it was active in this 10 minutes period.

And in addition, all activity values under 2 are rounded up to 2. So value 2 means the equipment was occupied 0-20% of a 10 minutes period.

Data may look like this example below:

```
time,19,20,21,22,23,25
2020-12-07 12:00:00+00:00,3,2,5,4,2,4
2020-12-07 12:10:00+00:00,4,2,2,4,5,7
2020-12-07 12:20:00+00:00,2,2,8,2,2,8
2020-12-07 12:30:00+00:00,3,2,2,2,2,6
2020-12-07 12:40:00+00:00,2,2,2,2,3,2
2020-12-07 12:50:00+00:00,2,4,3,4,2,2
2020-12-07 13:00:00+00:00,2,4,6,2,2,3
2020-12-07 13:10:00+00:00,2,2,2,2,2,2
2020-12-07 13:20:00+00:00,6,2,2,3,3,2
2020-12-07 13:30:00+00:00,2,3,2,3,6,2
2020-12-07 13:40:00+00:00,2,2,2,2,2,2
2020-12-07 13:50:00+00:00,2,2,2,2,2,2
2020-12-07 14:00:00+00:00,2,2,2,2,2,2
```

Device mapping:

```
beacon   laitekuvaus              laitenumero
19       etupenkki                10273
20       ojentajapunnerrus        10298
21       vinopenkkipunnerrus      10294
22       hauiskääntö              10250
23       penkkipunnerrus          10282
24       ylöveto                  10278
25       jalkakyykky              10268
26       soutulaite               10270
```

There are 2 files, one for all the data until last midnight and the other for today's data. Note that data in these files may overlap.

- hietaniemi-all.csv Updated every day after midnight
- hietaniemi-last-day.csv Updated every 10 minutes

The script which produces above files is located in github: kaltiot2csv.py

Contact

If you have any questions about this experiment or data, feel free the send me an email. Voit lähettää sen mainiosti myös suomeksi.

aapo.rista(at)forumvirium.fi