

# Python Coding Assignment

## Preface

The dataset is formatted as CSV data and includes `occupancy`, `light`, `humidity`, `temperature` and `co2` values recorded every few seconds, over the course of a couple of days. These values are real, and came from a public dataset used in machine learning projects.

### What?

A solution for managing time-series data where we can derive KPI information.

### Why?

We ingest a wide range of customer information, including time-series datasets and must be able to parse, audit, and aggregate the values for use in our system. One of these usecases involves providing our customers with data insights. As such, we need to be able to "ask" our system "how has X KPI changed over N time period" so we can surface that information to our Frontend application.

## Acceptance Criteria

*General* - Do not spend more than *2 hours* on this assignment; if you run over time, please pause work and submit it - Implementation should be in `python` - Please provide all required information to run the code locally

*Functional* - Your solution must pull in data from `http://lameapi-env.ptqft8mdpd.us-east-2.elasticbeanstalk.com/data` - Your solution must provide results in the form of a `python dict datatype` - You must provide documentation in the form of code comments explaining any transformations your solution performs on the dataset - Your solution must allow the invocation with the following function signature:

```
results = foo(kpi_list=["light", "occupancy"], start="2/2/15 14:37", stop="2/3/15 0:15")
```

- Your solution should provide some of the following data for each KPI in the results:

```
# note; values are fake in this example
{
  "percent_change": "13.5424%",
  "last_value": 1.241,
  "first_value": 0.123,
  "lowest": 0.001,
  "highest": 3.612
  "mode": 1,
  "average": 1.234,
  "median": 1.0075
}
```

- Your solution should be invocable from the commandline with the following parameters:

```
--start <start date of time period>
--stop <stop date of the time period>
--kpi_list <comma delimited list of kpis>
```

example: `--kpi_list occupancy,light,co2 --start "2/2/12" --stop "2/3/12"`

## Notes

1. The API you will pull from exposes the following endpoints:

```
/data          <---your data source
/health        <---used by Elastic Beanstalk
/              <---root, serves a meaningless response
```

2. Please return the solution you created in a `zip` or a link to a repository (such as gitlab, or github) to `davorin.habrun@digihy.com`
3. Please reach out to us if anything doesn't make sense!
4. Don't stress out over this!
5. Good luck!