**GETWAY - for a Smart Field project**

Authored by: [Rivka](https://www.linkedin.com/in/rivka-gozlan/), [Miri](https://www.linkedin.com/in/miri-zakay-3b5a521aa/), Elisheva and Shir

==Description==

This project is a sub-project for a "Smart Field" project.

(The other two sub-projects: [Cloud-to-Ground](https://github.com/sheindyfr/Cloud-to-Ground))

The main project simulates a smart filed. The sensors (-IOT devices) transmit a lot of data (temperature, rainfall, etc.) to a client side- the 'GETWAY', and it transmits the necessary information to a server side- the cloud, that updates them in a DATABASE.

The goal of our project is to compress the data so that no load and duplication is created.

For this purpose, in our program, we are testing whether the data should be updated according to the deviation values that the user enters and then, using *Data Compression* Algorithm - the information is sent to the cloud.

==Program Files==

GWmanager.py- user input and GETAWAY activation.

Getaway.py- server and client, including data processing

Mat.py- realize a matrix for the data storage.

Delta.py- data storage for limited sending to the cloud.

Simulations of the other two sub-projects: client.py, server.py

==How to compile?==

Open three command line, one of them runs the command: python GWmanager.py

Then insert data there according to the instructions. In the second- the command: python server.py (or the group 3 program).

In the third- the command: python client.py (or the program of group 1)

If you do not run the Group 1 program but the client.py:

Enter a set of threshold values in the third instance, an example:

10,11,20,21.2,30,31,40,41,50,51,60,61,70,71,80,81,90,91,100,101

Then messages from the sensors, example message:

10,20,30,40,50,60,70,80,8,90,100,1,1,0