**UK DRI Care Research and Technology Centre Data Engineering Task**

Your objective is to build a simple model that can predict whether a household is single or multiple occupancy using data from motion sensors installed in the home. This data is available as an SQLite database [here](https://imperialcollegelondon.box.com/shared/static/8se12flvva8jcpqwehuyuxob0uj4kfr4.db). Your model should be trained using features derived from the sensor data.

Please describe your approach using a Jupyter notebook that demonstrates how the model is trained and how can it be used for prediction. For inference we typically package our models in ONNX format, but this is an optional step in this assignment.

You will be assessed on the quality of your code and documentation, not its quantity or the complexity or performance of your model. We are interested in your approach, the choices that you make and how you justify them.

Please do not spend more time that you feel comfortable on this assignment. Feel free to use any relevant third-party libraries but the notebook should be entirely your own work.

Please push your work to a git repository and send a link to [m.woodbridge@imperial.ac.uk](mailto:m.woodbridge@imperial.ac.uk) along with an estimate of the time taken to complete the task.