## Modelling Case Study Exercise

You will have been provided with a spreadsheet with a simplified example of an exposure rating model for UAVs. This calculates premiums for drones, and cameras which can be detached and attached to different drones. Each drone is individually priced, based on its value and weight. As the cameras can be attached to any drone, they are charged at the highest rate across all of the drones to which they can be attached.

We would like you to review this spreadsheet and build the algorithm. This is the sort of work that we would be delivering to our customers, though the models we will be building will generally be significantly more complex. Thinking about how you would document, check, and explain your work should be in your mind as you do this work.

Extensions:

1. Customers may have a large number of drones but warrant that they will only fly a small number (n) at any one time. We would like to charge the full rate for the n drones with the highest calculated premiums, and a fixed base premium of £150 for the remaining drones.
2. Most of the risk of damage to cameras comes when they're in the air. If we have more cameras than drones, we would like to charge the full rate for the n cameras with the largest values, and a fixed premium of £50 for the remaining cameras.

Development Approach:

There are a number of ways to complete this activity but we would like to see you work within the following constraints:

* Avoid the use of third-party packages
* All intermediate values shown in the spreadsheet should be calculated
* All calculated values should be saved in the same data structure as the original – we should be able to print out the object and see all outputs and intermediate values
* Unless otherwise stated, we would expect the algorithm to be built in Python

If you need to work outside of any of these requirements in order to complete the exercise, please do so – we would much rather see how you logically structure your code than not complete a response.