**CADY Take-Home Exercise Instructions**

General:

* Treat the code as if it goes to production – apply high coding standards according to your discretion.
* Make sure the code produces correct results on the attached examples.
* **Don't** attempt to use Machine-Learning based models. The task can and should be performed using deterministic code.
* **Don't spend too much time on this. If you find yourself working more than 1-2 days on it, reduce some of the scope (and document which parts were not included).**
* Feel free to ask us questions if something is not clear.

Task:

* The attached files contain text obtained (in theory) from components datasheet.
* Write a system in Python with the following capabilities:
  + Reading the content of all the given components' text files.
  + Parsing and storing for each file component the **operating voltage range** (i.e. the voltages values in which the component can function; e.g. from 5V to 12V) and the **operating temperature range** (i.e. the temperatures in which the component can function (e.g. from -40C to 85C).
  + All files contain at least one range for the each of the items. If a file has more than one range for an item check if they are identical. If they are, use it as the parsed range. If not, write None as the range.
  + **Given specific operating conditions return all the components that can operate under these conditions**. The conditions are given as two floats, one for the voltage and one for the temperature, and they are assumed to be in the standard units (e.g. 5 for 5V and -20 for -20C).  
    **This is the interface with which the system is used.**
  + *Bonus – Write tests for some parts of the system.*
  + *Bonus – Have the code produce some visual representation of the components operating ranges statistics (e.g. a graph with the distribution of components' temperature range).*