Write a separate ipython notebook to solve these questions.

Q1. a) Write a function to implement following function:

$$o\_sum[t] = \sum_{k=0}^{t} i\_array[k],$$

where i_array is given input list and o_array is output list to be generated. The function takes a list as input and returns a list.

b) Write a separate function to implement following function:

$$o\_power[t] = \sum_{k=0}^{t} i\_array^2[k],$$

where i_array is given input list and o_array is output list to be generated. The function takes a list as input and returns a list.

c) Write a separate function to implement following function:

$$d[k] = \begin{cases} 1, & \text{if absolute}(o\_power[k] - o\_sum[k]) > threshold \\ 0, & \text{else.} \end{cases}$$

The function takes the 2 outputs from functions above and a threshold and returns a list.

d) Optional/Discuss: try to combine the interface of above three functions using class.