Sheet 5

Problem 1: *Mean, Median, Mode, and Range*

Write a program to read an array and calculate the mean, median, and trend. Make sure that you use modular programming technique.

Given $X = \{x_i, i \in [1, N]\}, x \in [0, 99]$, then:

$$\mathbf{mean}(X) = \frac{1}{N} \sum_{j=1}^{N} x_i.$$

$$\mathbf{median}(X) = \begin{cases} x_{(N+1)/2} & , N \text{ is odd} \\ (x_{N/2} + x_{N/2+1})/2 & , N \text{ is even} \end{cases}, X \text{ is sorted.}$$

$\mathbf{mode}(X)$ is the most frequent $x \in X$

$$\mathbf{range}(X) = \mathbf{max}(X) - \mathbf{min}(X)$$