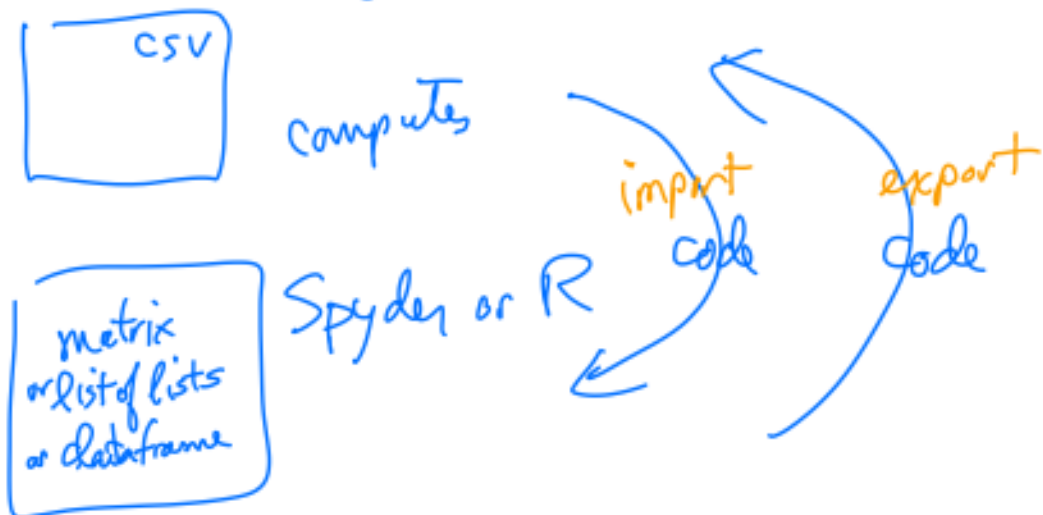


A couple of project tips.

① Interacting with `xlsx`, `csv` files.



Advice: Always move the entire file

② Python

$A = \begin{bmatrix} [1, 2, 3] \\ [4, 7, 8] \\ [-1, 1, 2] \\ [2, 2, 2] \end{bmatrix}$

Think: $\begin{pmatrix} 1 & 2 & 3 \\ 4 & 7 & 8 \\ -1 & 1 & 2 \\ 2 & 2 & 2 \end{pmatrix}$

2nd row of A : $A[1] = [4, 7, 8]$

2nd column of A : $[A[j][1] \text{ for } j \text{ in range(len(A))}]$
 $= [2, 7, 1, 2]$

Another way:

$$2^{\text{nd}} \text{ col of } A = [b[i] \text{ for } b \text{ in } A]$$
$$= [2, 7, 1, 2]$$

③ Dimensions: (same A)

$$\# \text{ of rows} = \text{len}(A)$$

$$\# \text{ of columns} = \text{len}(A[0])$$
