Representing Tabular Data
Exercises

Exercise 1. (Geometric Interpretation of Vectors)
Compute and draw in a diagram:

- vectors $\boldsymbol{u} = (1, -2), \boldsymbol{v} = (3, 2), \boldsymbol{w} = (-1, 2)$
- $\boldsymbol{u} + \boldsymbol{v}, \boldsymbol{u} + \boldsymbol{w}, 1.5\boldsymbol{u}, \boldsymbol{u} - \boldsymbol{v}$
- $1.5\boldsymbol{u} + 0.5\boldsymbol{v}$

Exercise 2. (Data Model)
Please join the Particify Room.

Consider the following features of a dataset. Discuss about which of those features are suitable for a vector space model.

1. height in cm
2. circumference in cm
3. left-handed (Yes/No)
4. smoker (Yes/No)
5. eye-color (blue, green, gray, ...)
6. income in EUR
7. number of cars

Exercise 3. (Matrixes)
Compute the $A + B$ and $2A + 3B$:
$A = \begin{pmatrix} 1 & 2 & 3 & 4.5 \\ 3 & 7 & 2 & 9 \\ 5 & 5 & 2 & 2 \end{pmatrix}$ and $B = \begin{pmatrix} 3 & 5 & 8 & 2.5 \\ 4 & 5 & 2 & 4 \\ 1 & 1 & 2 & 3 \end{pmatrix}$
Verify your results using Python.