Questions:

- What is GridSearchCV, RandomizedSearchCV?

From <https://scikit-learn.org/stable/modules/generated/sklearn.model_selection.GridSearchCV.html>:

Exhaustive search over specified parameter values for an estimator.

And from <https://scikit-learn.org/stable/modules/generated/sklearn.model_selection.RandomizedSearchCV.html>

Randomized search on hyper parameters.

The main difference between GridSearchCV and RandomizedSearchCV is the way they look for the best combination of hyperparameters for the model. While GridSearchCV does the job on specific parameters, RandomizedSearchCV uses different settings of hyperparameters to get the best combination of them.

- Why there is RCV when GSCV is already there?

Due to the only difference between both is the way they look for hyperparameters I think RCV plays an important role when I have many parameters to try, and the training time is very long.

- When to use what CV?

Grid Search is good when we have a small number of hyperparameters, but if the number of parameters is high, then a better option might be to use Random Search.

- Can we use it together? If yes, in what order or in no order?

I think we can use both if we want to make sure what our best combination of hyperparameters is, and of course if we have the time to do so, I don't think there is a specific order to use them.