Cross-Validation and k-Nearest Neighbor Classification

Study the [*KNeighborsClassifier*](https://scikit-learn.org/stable/modules/generated/sklearn.neighbors.KNeighborsClassifier.html)class from the [*scikit-learn*](https://scikit-learn.org/stable/index.html) library. For the [*iris*](https://drive.google.com/open?id=1-liKFM6jLMVRwklMVGWOvjma_w7UKGHr)dataset, find the best combination of parameters (*n\_neighbors*, *weights* and *metric*) for the *kNN* classifier according to its [*F*1-score](https://en.wikipedia.org/wiki/F1_score) of [cross-validation](https://scikit-learn.org/stable/modules/cross_validation.html). You do not have to check each combination manually. Use lists and for-loops. Also you can use the [GridSearchCV](https://scikit-learn.org/stable/modules/generated/sklearn.model_selection.GridSearchCV.html) to perform this subtask.

For the best combination of parameters (*weights* and *metric*) found, build a plot of quality of classification as a function of the number of nearest neighbors.

<https://en.wikipedia.org/wiki/Kernel_(statistics)>