Exercise 7: Python: APIS

In this exercise you will create your own API that serves a Machine Learning model. For this exercise, you can either partner in groups of 2-3 students or work individually.

1. Create a repository in the account of one of the components of the group.
2. Train a Machine Learning model and generate a pickle file that stores it. (You can use one of the models from hw4 or hw5 and use `joblib.dump()` to generate the pickle file).
3. Create a Python file that will run the API in the same directory where the pickle file is stored.
4. Create an endpoint that receives an input file, ideally as a .json or a dictionary, reads the model (you can use `joblib.load()`) and outputs the prediction.
5. Create a .json file with an example of the type of input the model needs, i.e. the features used to train the model.
6. Create a file that contains the code to do a post request to the API sending the datapoint as input and prints the prediction. This code should handle potential API related issues as the ones seen in class.
7. Try out the whole system by running in a terminal `uvicorn name_api_file:app --reload` and in a second terminal executing the second file with the request. Remember that usually the API service will be run in `localhost:8000`.
8. Commit the .py files, the .json file and the pickle file with the model to the Repository.
9. Share the link to the repository by turning in the assignment and let my user (Icedgarr) have access to it.