Workshop #1

Setup and Simple Examples

Hints on Installation

Anaconda

- https://docs.anaconda.com/free/anaconda/install/windows/

VSCode

- https://code.visualstudio.com/

Workshop 1

Module 1 - Workshop

You will work together in small groups and share out your responses at the end of the session. Be sure to have your notes from the Online Learning to support your application of this new knowledge.

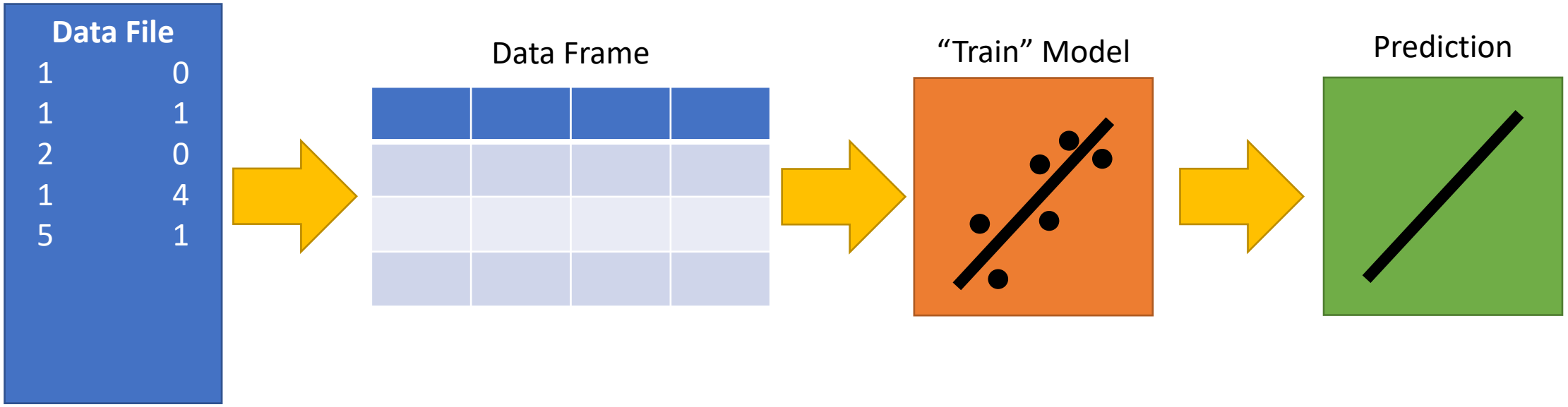
Before the workshop session

To complete the practical work in this course, you will need an installation of Python 3.x and some commonly used machine learning and data manipulation libraries. The purpose of this first workshop is to: (a) get you up and running with the most important of these; and (b) experiment with, and enhance your skills in, python, matplotlib and scikit-learn (sklearn).

We suggest installing the Anaconda distribution as it contains all the tools you will need, managed via conda environments. It is a good idea to setup a separate conda environment (you can clone an existing one to start from) for any major projects or courses that you do that might need something different, especially new or upgraded packages. This allows you to keep code in the other environments working with their original package versions, to prevent breaking your code by upgrading some package where there is a change in API or behaviour, which is quite common in the rapidly developing python and machine learning communities.

If you're working in one of our computer labs, Anaconda should already be installed.

The Workflow



Evaluation?

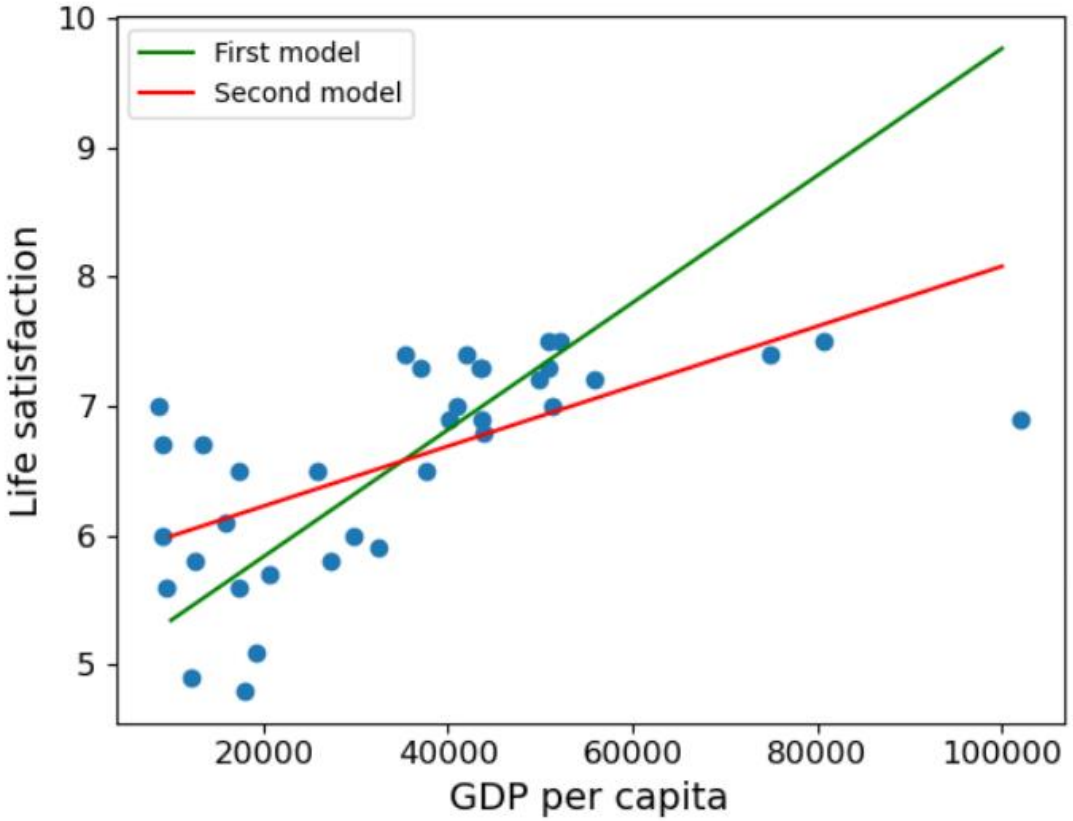
Prediction

Prediction

Mean Squared Error?

MSE

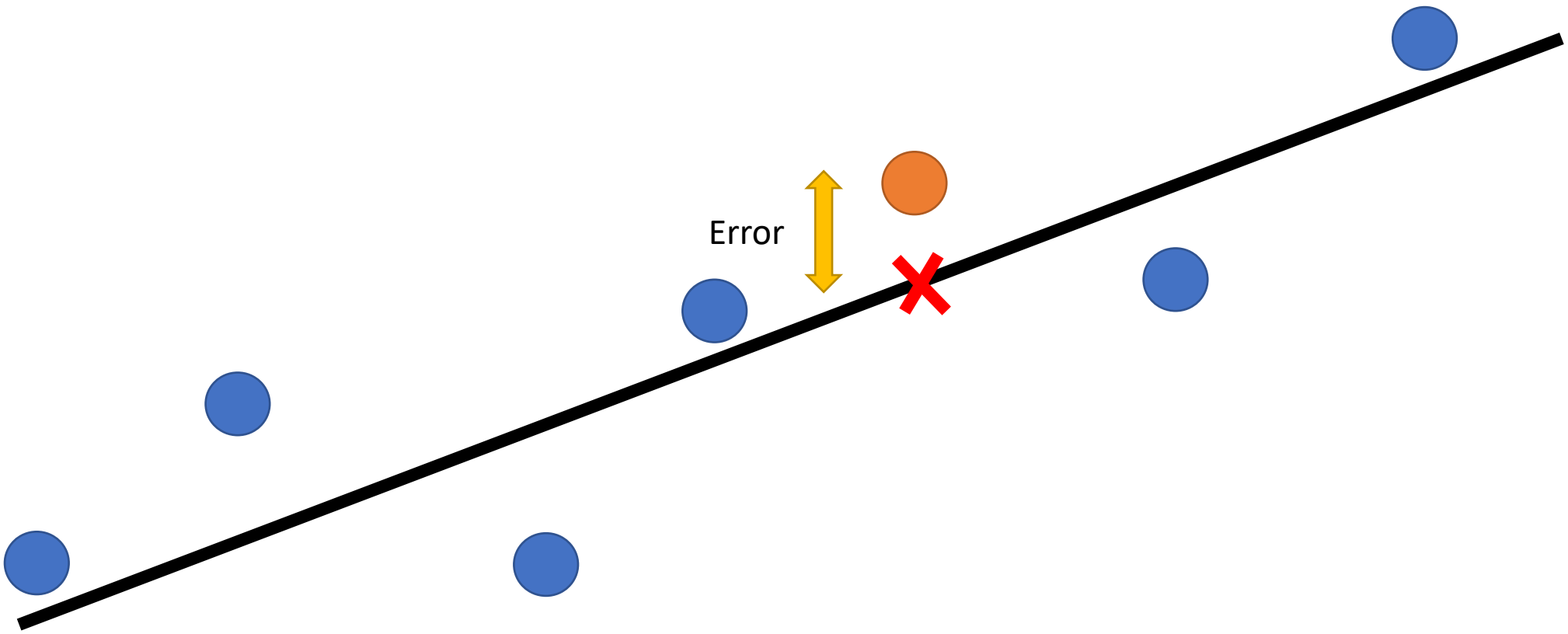
Evaluating Models



Conceptual Question

- Which model works better?
- Is MSE the best tool here?

Leave One Out



Other Models

Further Fun

https://www.kaggle.com/

Has numerous datasets, where you can train models.