1 Opening

- pandas

- as spreadsheet

- relational database

- application

2 pandas.ipynb part

- Numpy and Pandas

- Python. duck typing. if something looks like sequence and acts like a sequence. iteration over, length

- numpy array was not designed. numpy functions implemented in C.

- base Python is not well designed for data science

- floats by default unless otherwise told

- numpy array 8-byte cells adjacent

- numpy is vectorized.

- adding a list to a list will concatenate in base Python. numpy is vectorized elementwise numerical summation.

- Data Science from Scratch

- Joel Grus - Livecoding Madness - Let's Build a Deep Learning Library

- "*" is elementwise, np.dot is matrix multiplication

- Python list is heterogeneous. just list of pointers.

- base Python iteration on a numpy array element. overhead of unboxing and boxing.