TU 257 – Fundamentals of Data Science

Data Analytics

Lab 9 – Association Rules Analysis
Market Basket Analysis

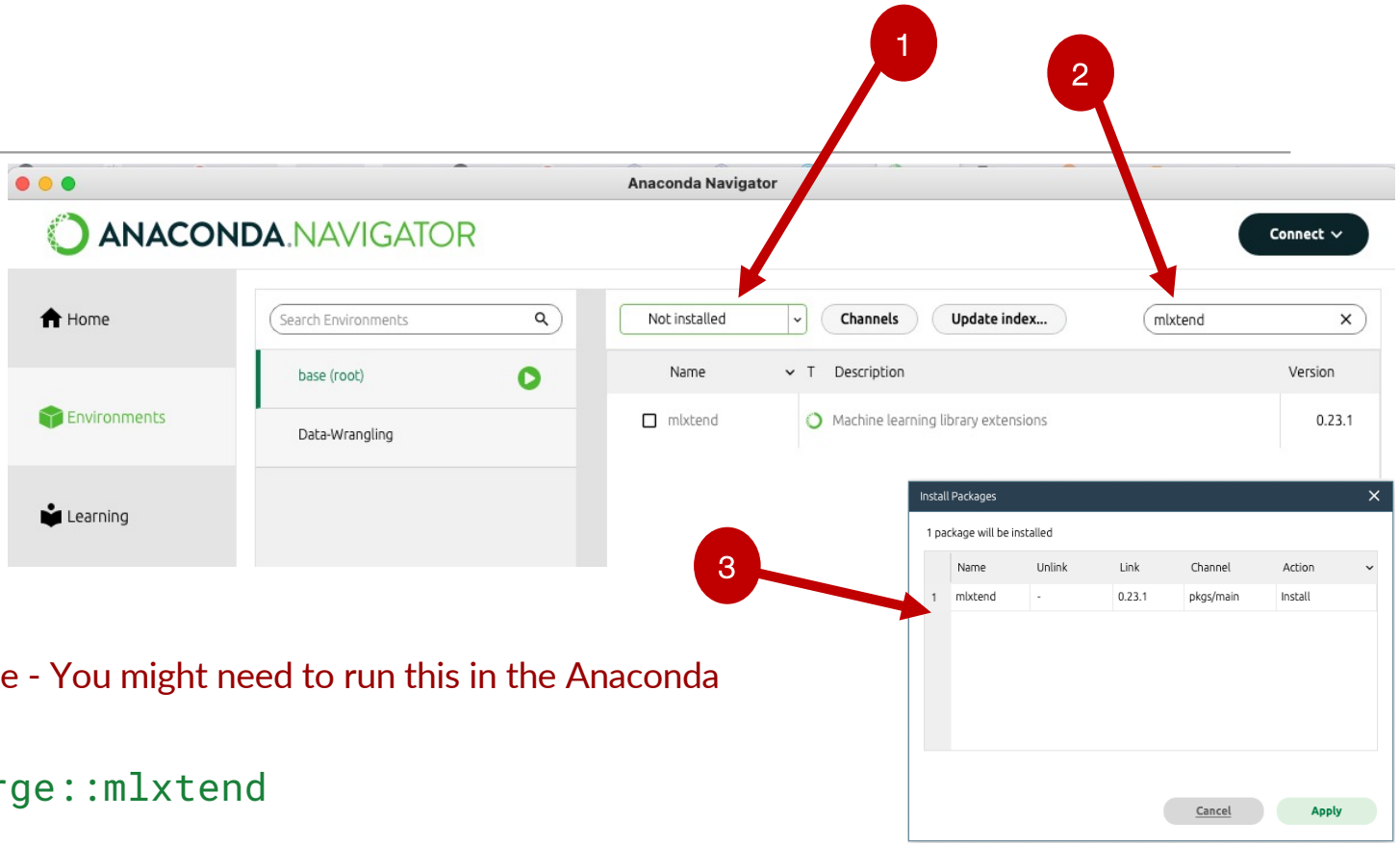
Brendan Tierney

Python Libraries

mlxtend

Use Anaconda

- Install into your Environment



On Microsoft Windows - Command Line - You might need to run this in the Anaconda Powershell Prompt.

```
conda install conda-forge::mlxtend
```

Documentation

See previous examples on how to install a library using both approaches

Agenda

- Exercise 1 – Demo Notebook 1
- Exercise 2 – Demo Notebook 2
- Assignment

Exercise 1 – Demo Notebook 1

Exercise 1 – Demo Notebook 1

- Part 1 – Examples/Demo Notebook 1
  - Download the Demo Notebook 1
  - Download the Dataset needed for Demo Notebook 1

  - Run all cells
  - Examine the output generated
  - Follow what is happening from cell-to-cell
  - Add extra annotations/descriptions based on your understanding
    - Enrich the descriptions to make them more meaningful for you

Exercise 1 – Demo Notebook 2

Exercise 2 – Demo Notebook 2

- Part 1 – Examples/Demo Notebook 1
  - Download the Demo Notebook 1
  - Download the Dataset needed for Demo Notebook 1

  - Run all cells
  - Examine the output generated

  - Annotate the Notebook with explanations of what is happening in each Cell
    - Add the annotations as Markdown Cells
    - Explore increasing/decreasing text size using # symbol
      - make sure there is a space between # and the start of the text
    - Add annotations/descriptions that make sense to you
      - Test that will make sense to you when you look in a few days, weeks, and months time

Exercise 2 – Demo Notebook 2

- See Questions at the end of the Notebook

- Can you add additional code (taking a copy of the code earlier in the notebook)
  - Modify it slightly
  - Examine the results produced

- Compare the results with those found earlier in the Notebook
  - From other Countries

Assignment B

- Assignment Time again!
  - It's available on BrighSpace.

- If you have spare time during our class time, and after you have finished the lab exercises
  - Have a look at the assignment
  - Do you have any ideas of what datasets, etc you could use
  - Research some example
  - Have a think about what you could achieve

- There are lots of Repositories (websites) for Data Sets. Here's a link to one I have
  - https://oralytics.com/2019/04/18/data-sets-for-analytics/
  - This might be useful for finding datasets for you to use.

Assignment

- Start working/thinking about it early
- Try different datasets and examples you have found
- What can you do to showcase your work and understanding of the topics
- What can you add to the data analysis
- …

Any Questions ?

What Now/Next ?

Complete **all** Lab Exercises before Next Week