CSC110 Lecture 10: Tabular Data

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*Navigation tip for web slides: press **?** to see keyboard navigation controls.*

Announcements and Today's Plan

Announcements

- Term Test 1 info has been posted!
  - Info on Quercus:
    - Test time and location (not MY 150!)
    - Test coverage
    - Advice for taking the test
  - Review provided reference sheet
  - Review the Term Test 1 cover page
- Prep 4 has been posted (deadline extended to Tuesday 9am)
- Assignment 2 will be posted after class today
  - Starting Parts 1 & 2 is good review for the test!

Today you'll learn to...

1. Represent tabular data in Python using nested lists.
2. Write Python functions that perform computations on tabular data.

Review some key concepts for the term test!

Tabular data

A common form of “real world” data is **tabular data**, which is data stored in a table.

	Sophia	**Thelonious**	**Stanley**	**Laura**
Breanna	False	True	True	False
Malena	False	True	True	True
Patrick	False	False	True	False
Ella	False	False	True	True

Toronto Marriage data

ID	Civic Centre	Marriage Licenses Issued	Time Period
1657	ET	80	January 2011
1658	NY	136	January 2011
1659	SC	159	January 2011
1660	TO	367	January 2011
1661	ET	109	February 2011
1662	NY	150	February 2011
1663	SC	154	February 2011
1664	TO	383	February 2011

Toronto Marriage data (in Python)

```
import datetime  # A Python module for dates and times

[
    [1657, 'ET', 80, datetime.date(2011, 1, 1)],
    [1658, 'NY', 136, datetime.date(2011, 1, 1)],
    [1659, 'SC', 159, datetime.date(2011, 1, 1)],
    [1660, 'TO', 367, datetime.date(2011, 1, 1)],
    [1661, 'ET', 109, datetime.date(2011, 2, 1)],
    [1662, 'NY', 150, datetime.date(2011, 2, 1)],
    [1663, 'SC', 154, datetime.date(2011, 2, 1)],
    [1664, 'TO', 383, datetime.date(2011, 2, 1)]
]
```

Demo!

Exercises 1 & 2

A larger computation on nested data

Goal: given this data, calculate the average number of marriage licenses issued per civic centre.

```
def average_licenses_by_centre(marriage_data: list[list]) -> dict[str, floa
    """Return a mapping of the average number of marriage licenses issued a
    civic centre.

    In the returned mapping:
      - Each key is the name of a civic centre
      - Each corresponding value is the average number of marriage licenses
        issued at that centre.

    Preconditions:
    - marriage_data satisfies all of the conditions from Exercise 2
    """
```

Exercise 3: Implementing functions on tabular data

Summary

Today you learned to...

1. Represent tabular data in Python using nested lists.
2. Write Python functions that perform computations on tabular data.

Homework

- Readings:
  - From today: 5.1
  - For Prep 4: 5.2
  - For next week: 5.2, 5.3, 5.4, 5.5
- Review for Term Test 1
- Work on Prep 4
- Read through Assignment 2

This will be you after Monday! I believe in you!