Computational Structures in Data Science

UC Berkeley EECS
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Lecture #16:
Data Structures:

Linked Lists

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https://cs88.org

Updates

- **My OH via Zoom**
    - **Updated Piazza Note**
- **Final Info is TBD**
- **You can take CS88 P/NP and use it for major declarations.**
- **Please, please, please fill out the midterm survey**

Why?

- **Data Structures**
  - OOP helps us organize our *programs*
  - Data Structures help us organize our data!
  - You already know lists and dictionaries!
  - We'll see two new ones today

- **Enjoy this stuff? Take 61B!**

- **Find it challenging? Don't worry! It's a different way of thinking.**

Linked Lists

Data Structures

- **A data structure is a way to organize or *model* a bunch of independent pieces of data.**
  - **Lists (arrays)**
  - **Dictionaries**
  - **Tuples**

- **A class, on its own, is *not* necessarily a data structure, it's a new kind of datum.**
  - **a "car" or a "person"**

- **These are common patterns that can be use to solve a wide variety of problems.**

- **Sometimes we're giving structure to make it easier as a programmer, sometimes we're trying to be fast or efficient. (Next lecture!)**

Linked Lists

- ## A Recursive List
  - ### Linked lists contain other linked lists

- ## A series of items with two pieces:
  - ### A value
  - ### A "pointer" to the next item in the list.
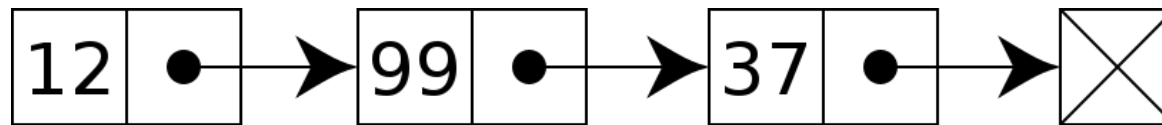
- ## We'll use a very small Python class "Link" to model this.