**CS116: Computational reasoning with and without data**

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1. **Intro**

Ice-breaking: digital currency, smart contract, vending machine, and Amazon

Questions about tools (Jupyternotebook, colab, github, and others)

2. **Goal: learn how to apply computational thinking**

- step 0: intro (5 min)

- step 1: learn the basics (10 min)

- step 2: apply it with small examples (20 min)

- step 3: apply it with a real dataset (20 min)

- step 4: discuss future directions (5 min)

3. **Google Colab intro: https://colab.research.google.com/**

- Free CPU

- Free Storage

- Free GPU

- With Google Drive and GitHub

4. **(concept) Python key concepts (**[**https://github.com/Jikhan-Jeong/IDA**](https://github.com/Jikhan-Jeong/IDA)**)**

Basic operations

Iteration

Conditional statement

Function

5. **(example demo) Creating our vending machine function**

6. **(example activities) In-class activity for modifying our vending machine function**

7. **(example discussion) How to improve our vending machine function**

8. **(real data example): Amazon Online Review for Wine** (amazon\_wine.csv)

9. **(real data example demo): Applying iteration and function**

10. **(real data example activity): Applying all we have learn today**

11. **(real data example discussion): For computational thinking and future ideas**

12. **Share resources for future studies:**

* Yelp product review dataset: https://www.yelp.com/dataset
* Amazon product review dataset: http://jmcauley.ucsd.edu/data/amazon/links.html
* NYTimes API (book and movie reviews)
* Amazon review analysis paper: https://ieeexplore.ieee.org/abstract/document/9590517

13. **Q&A**