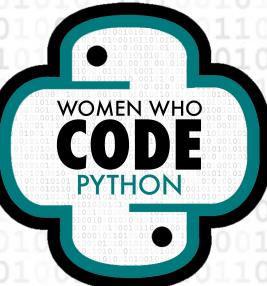


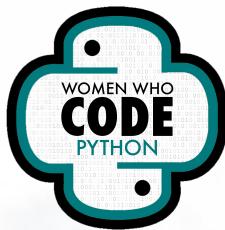
Welcome everyone!

- You can find these slides on GitHub here:
<https://github.com/WomenWhoCode/WWCodePython>
- Please make sure your chat is set to “All panelists and attendees”.
- Some housekeeping rules:
 - Everyone will be muted throughout the webinar, but there will be opportunities for participation!
 - Please share your thoughts on the chat and/or ask questions in the Q&A.
 - The entire team is here today. Please reach out to us with any technical questions!



WELCOME WOMEN WHO CODE





Women Who Code Python

**Intro to Data Structures
with Python:
Ace the Technical Interview**



Session # []: [Topic]



MEET YOUR TEAM



Rishika Singh

Track Lead



Jasmeen Rajpal

Evangelist

OUR MISSION

Inspiring women to
excel in technology
careers.

WOMEN WHO
CODE



OUR VISION

A world where women are representative as technical executives, founders, VCs, board members and software engineers.

WOMEN WHO
CODE



OUR TARGET

Engineers with two or more years of experience looking for support and resources to strengthen their influence and levelup in their careers.



CODE OF CONDUCT

WWCode is an inclusive community, dedicated to providing an empowering experience for everyone who participates in or supports our community, regardless of gender, gender identity and expression, sexual orientation, ability, physical appearance, body size, race, ethnicity, age, religion, socioeconomic status, caste, creed, political affiliation, or preferred programming language(s).

Our events are intended to inspire women to excel in technology careers, and anyone who is there for this purpose is welcome. We do not tolerate harassment of members in any form. Our **Code of Conduct** applies to all WWCode events and online communities.

Read the full version and access our incident report form at womenwhocode.com/codeofconduct

230,000 Members

70 networks in 20 countries
Members in 97+ countries
10K+ events
\$1025 daily Conference tickets
\$2M Scholarships
Access to [jobs](#) + [resources](#)
Infinite connections



OUR MOVEMENT

As the world changes, we can be a connecting force that creates a sense of belonging while the world is being asked to isolate.



Upcoming Events

SAT
20
MAR

🔥 Introduction to Deep Learning for Edge Devices: Session 3: Quantization 🔥

Featured

8:00 PM – 9:30 PM (EDT) | 🔍 Zoom

Register

THU
25
MAR

✨ Intro to Data Structures with Python: Ace the Technical Interview (Session #3: Arrays & Matrices) ✨ Featured

8:00 PM – 9:30 PM (EDT) | 🔍 Zoom

Register

WED
31
MAR

📊 Databases with Python: Session on MongoDB📊 Featured

7:00 PM – 8:00 PM (EDT) | 🔍 Zoom

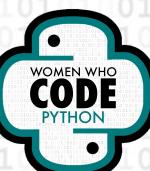
Register

SAT
03
APR

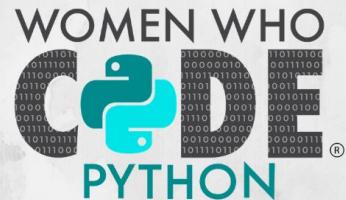
🔥 Introduction to Deep Learning for Edge Devices Session 4: Hardware on the Edge🔥 Featured

8:00 PM – 9:30 PM (EDT) | 🔍 Zoom

Register



Stay Connected



WOMEN WHO
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JOIN US ON SOCIAL MEDIA!

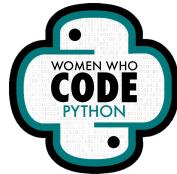
  

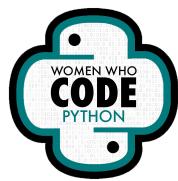
@WWCODEPYTHON

WOMENWHOCODE.COM/PYTHON



Karen Wong
Programmer | Python Track Lead



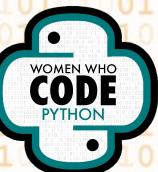


Today's Agenda



1. Data Structure
 - a. What is a Data Structure?
 - b. Data Structure vs. Data Type
2. Built-in Data Structures in Python
 - a. List
 - b. Set
 - c. Dictionary
 - d. Tuple

Data Structure



What is a Data Structure?

- Refers to formats to organize data in memory
- Stores data with a *common pattern*
- Just like organizing your clothes in the closet, data structure helps us to better accessing and analyzing complex and large amount of data with a structure / system



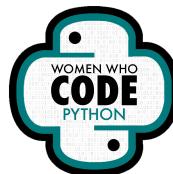
Types of Data Structure

Primitive

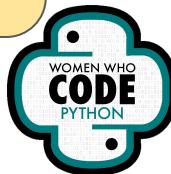
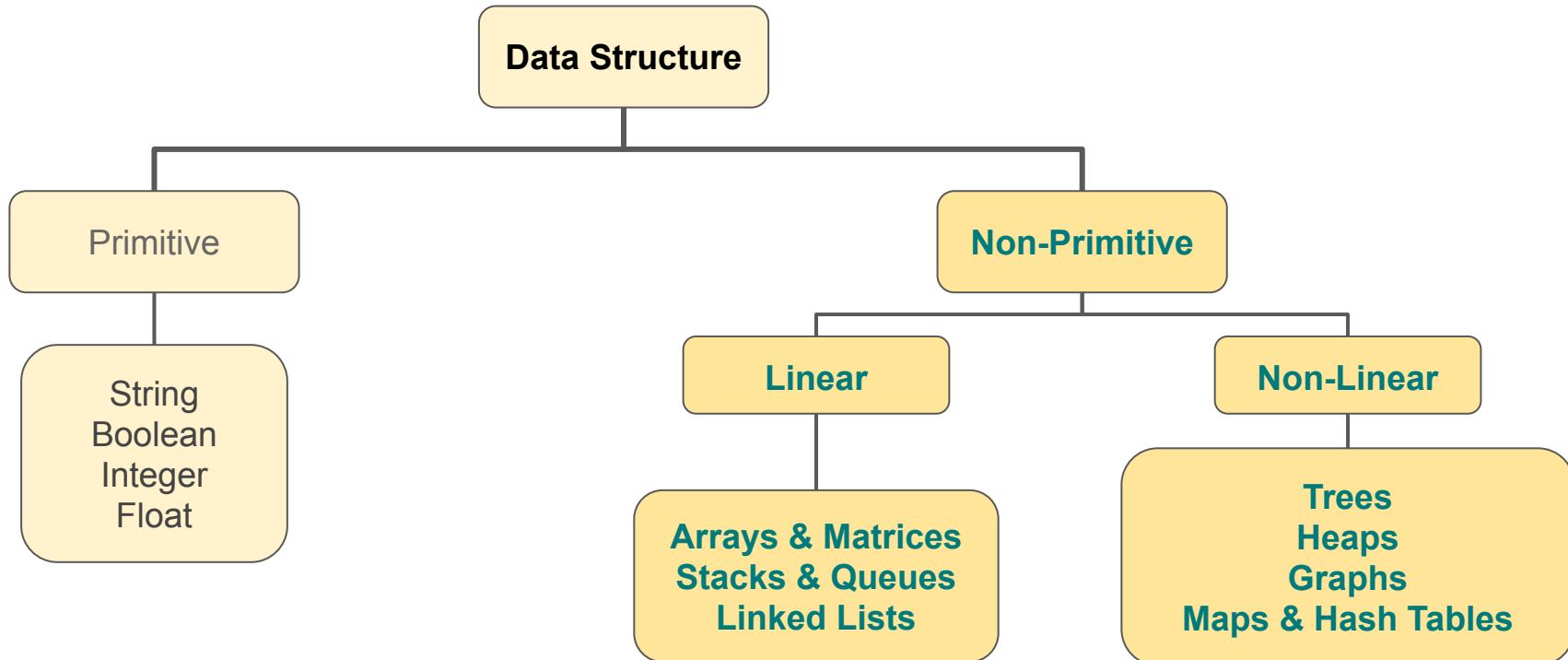
- Basic data structure
- Stores **single value** of data
- *E.g. Boolean, String, Float, Integer etc...*

Non-Primitive

- Complex data structure with specific purpose
- Usually store a **sequence of data**
- *E.g. Array, List, Tuple etc...*



What is a Data Structure?

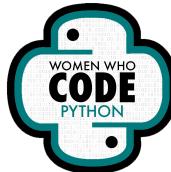


Data Structure vs Data Type

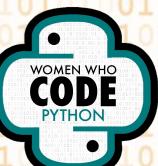
- *Data type* shares same property of a data format
 - E.g. boolean, float, array, string...
- *Data structure* is a predefined format for storing, accessing and processing data

At the end of the day...

They both access, store and manage data in their own specific ways.



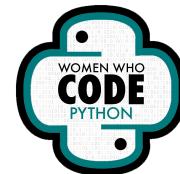
Built-in Data Structures in Python



Built-in Data Structures in Python

- Different programming languages have different predefined data structures
- There are **4** built-in data structures in Python

Data Structure	Example
List	[1,2,3,4,5, 'a', 'b', 6]
Set	{1,2,3,4}
Tuple	(1,2,3,3)
Dictionary	{'a':1, 'b':2}

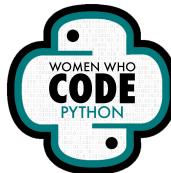


List

- An ordered collection of elements
- Stores elements in **【】**
- Very flexible because
 - Different data types can be stored in the same list
 - Mutable - can be edited after they create

Example:

```
movie = ["Titanic", "Ocean 8", "Wonder Women 1984"]
```



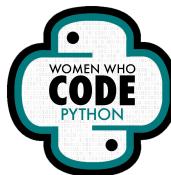
Set

- An unordered collection of elements
- Stores elements in {}
- Mutable - Can add elements but cannot change existing elements
- Allows different data types
- Does not allow duplicates

Tips: Set is your best friend when you want to remove duplicate elements in a list from conversion

Example:

```
movie = {"Titanic", "Ocean 8", "Wonder Women 1984"}
```

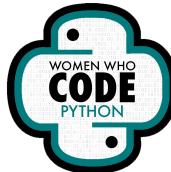


Tuple

- An ordered collection of elements
- Stores elements in ()
- Immutable - cannot be modified at all after it is created
- Faster to be iterated than list ; popular choice to return from a function

Example:

```
movie = ("Titanic", "Ocean 8", "Wonder Women 1984")
```

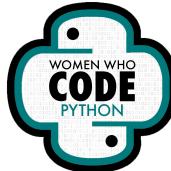


Dictionary

- Unordered collection of elements
- Stores elements in **{key: value}**
- Key: value pair
 - Key: unique, immutable and case-sensitive
 - Value: corresponding pair elements
- Good for mapping elements

Example:

```
movie = {"romance": "Titanic", "action": ["Ocean 8",  
"Wonder Women 1984"]}
```



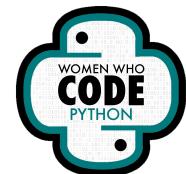
Data Structures in Python

- 4 in-built data structures in Python

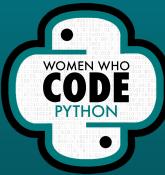
Data Structure	Stores In	Mutable?	Ordered?	Example
List	[]	✓	✓	[5, 15, 10, "a", 20]
Set	{}	✓	✗	{5, 15, 10, "a", 20}
Tuple	()	✗	✓	(5, 15, 10, "a", 20)
Dictionary	{key:value}	✓	✗	{1: "5", 2: [15, 10], 3: "a", 4: 20}

Mutable affects running time of the sequence

Ordered reflects the relationship between elements in the sequence

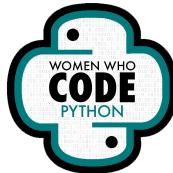


Q&A Time!



Time for Live Coding!

<https://colab.research.google.com/drive/14uX8wQnFbETMPgxtDHKH43pu0gHDxS5J?usp=sharing>



Next Session!

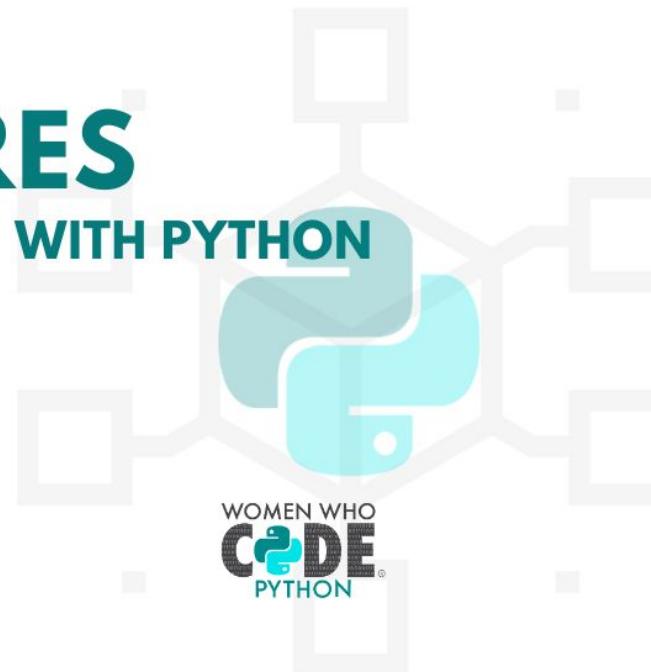
INTRO TO

DATA STRUCTURES

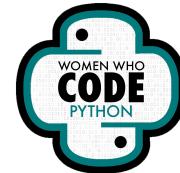
WITH PYTHON

ACE THE
TECHNICAL
INTERVIEW

THU. MARCH 25TH
@ 8:00PM EDT



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Questions?

Join our Slack channel:
#intro-data-structures-stdy-grp



Thank You!

