Welcome to the CoGrammar

Dictionaries

The session will start shortly...

Questions? Drop them in the chat. We'll have dedicated moderators answering questions.

Cyber Security Session Housekeeping

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. **(Fundamental British Values: Mutual Respect and Tolerance)**
- No question is daft or silly - **ask them!**
- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions. Moderators are going to be answering questions as the session progresses as well.
- If you have any questions outside of this lecture, or that are not answered during this lecture, please do submit these for upcoming Academic Sessions. You can submit these questions here: **Questions**

Cyber Security Session Housekeeping cont.

- For all **non-academic questions**, please submit a query: **www.hyperiondev.com/support**
- We would love your **feedback** on lectures: **Feedback on Lectures**
- Find all the lecture **content** in you **Lecture Backpack** on GitHub.

Safeguarding & Welfare

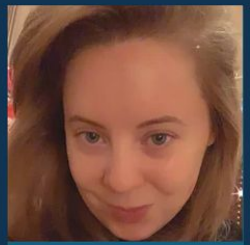
We are committed to all our students and staff feeling safe and happy; we want to make sure there is always someone you can turn to if you are worried about anything.

If you are feeling upset or unsafe, are worried about a friend, student or family member, or you feel like something isn't right, speak to our safeguarding team:

Ian Wyles
Designated Safeguarding Lead

Simone Botes

Rafiq Manan



Charlotte Witcher

Nurhaan Snyman

Ronald Munodawafa

Tevin Pitts

Scan to report a safeguarding concern

or email the Designated Safeguarding Lead:
Ian Wyles
safeguarding@hyperiondev.com

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Stay Safe Series:

Mastering Online Safety One Week/step at a Time

While the digital world can be a wonderful place to make education and learning accessible to all, it is unfortunately also a space where harmful threats like online radicalization, extremist propaganda, phishing scams, online blackmail and hackers can flourish.

As a component of this BootCamp the *Stay Safe Series* will/is designed to guide you through essential measures in order to protect yourself & your community from online dangers, whether they target your privacy, personal information or even attempt to manipulate your beliefs.

Don’t Take the Bait: How to Spot Phishing Scams

- Check email address.
- Unprofessionalism.
- Avoid attachments from unknown sources.
- Avoid signs of urgency.
- Content should make logical sense.

Learning Objectives & Outcomes

- Define Python dictionaries.
- Explain why we use Python dictionaries.
- Use Python dictionaries within code.
- Implement different dictionary methods.
- Construct structures to loop over data in a dictionary.
- Use .copy() to create new copies of a dictionary.

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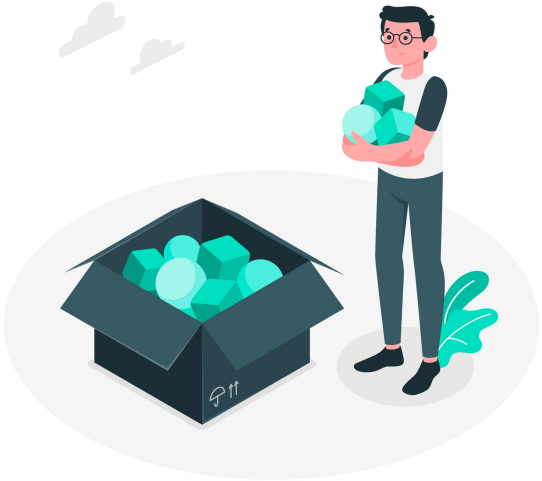
Dictionaries

October 2024

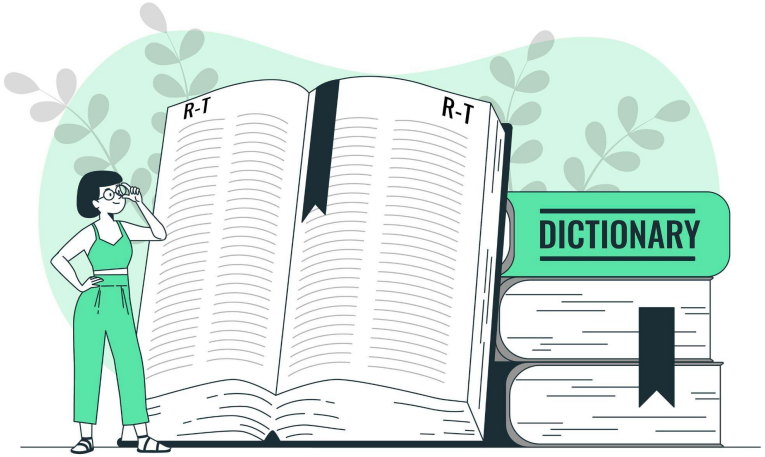
Dictionaries

How can you store multiple values in a single variable in Python?



Dictionaries

Please provide a brief description of a dictionary.



Polls

Please have a look at the poll notification and select an option.

What is the correct syntax to create an empty dictionary in Python?

A. ()
B. []
C. {}

Polls

Please have a look at the poll notification and select an option.

What will my_dict = {"name": "Alice", "age": 30} return when my_dict["name"] is executed?

A. 30
B. "Alice"
C. {"name": "Alice"}
D. "name"

Dictionaries

October 2024

Dictionaries

Similar to a real dictionary that has a keyword leading to a specific definition a Python dictionary will have a keyword leading to a specific value

- Can store multiple values similar to lists, sets
- and tuples.
- Maps keys to values. Key-value pairs.
- Keys can be of any immutable data type.
- Values can be of any data type.

Create Dictionaries

- Curly brackets {}

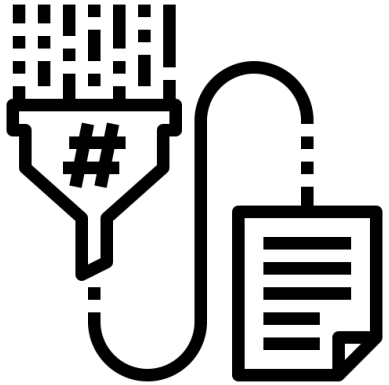
```
dictionary = {}
```

- dict() function

```
dictionary = dict()
```

Why Dictionaries

- Dictionaries are easy to work with and are also very fast.
- This speed comes from a technique known as hashing.
- Hashing
  - Process of transforming any given key or a string of characters into another value.



Adding and Removing Values

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Adding Values

- We can add values to a dictionary by referencing a new key and declaring a value for that key.

```
my_dict['new_key'] = 'new value'
```

- We can also use the .update() to add new values.

```
my_dict.update(new_key = 'new_value')
```

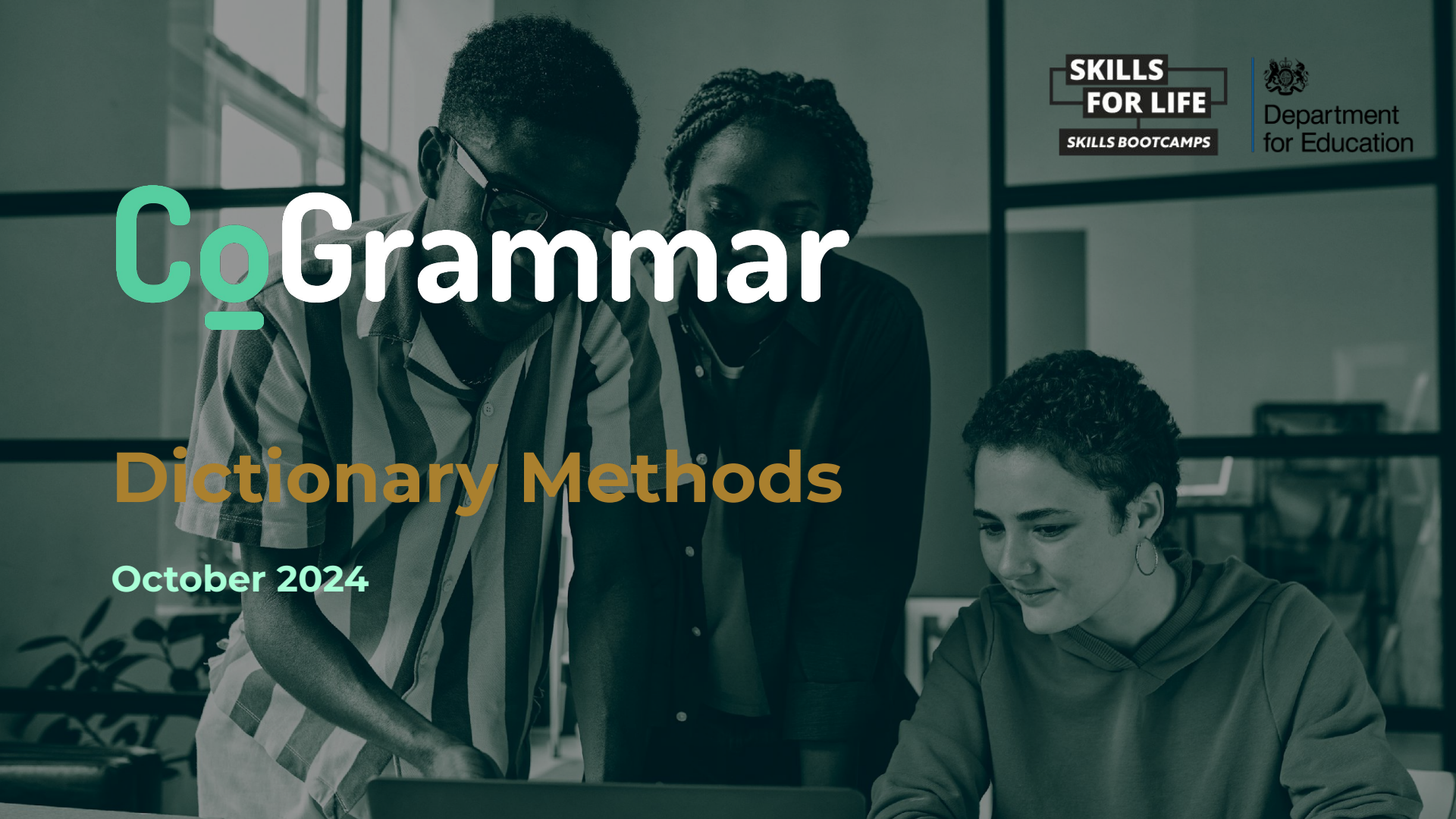
Removing Values

- Remove items using the **del** keyword

```
del my_dict['key']
```

- Use .pop() to remove items

```
my_dict.pop('key')
```



Dictionary Methods

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Methods

- Dictionaries have a bunch of methods to use.
    - update()
    - pop()
    - get()
    - setdefault()
    - key()
    - values()
    - items()

Looping over Dictionaries

- Use methods such as keys(), values() and items() to loop your dictionary.

Copying Dictionaries

- When storing a dictionary in a variable we are storing a reference.
- To make a copy of a dictionary we have to use .copy()

Polls

Please have a look at the poll notification and select an option.

Which of the following methods adds or updates a key-value pair in a dictionary?

A. my_dict.append(key, value)
B. my_dict.update({key: value})
C. my_dict.insert(key, value)
D. my_dict.set(key, value)

Polls

Please have a look at the poll notification and select an option.

Which method is used to get all the keys of a dictionary in Python?

A. my_dict.keys()
B. my_dict.values()
C. my_dict.get()
D. my_dict.items()

Summary

- Python dictionaries map keys to values allowing us to retrieve a value by referencing it's key.
- We can create dictionaries using {} or dict()
- We can easily add new values and remove values from our dictionary.
- When copying dictionaries we have to use .copy()

Questions and Answers

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Thank you for attending

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