FH AACHEN
UNIVERSITY OF APPLIED SCIENCES

HPI Hasso Plattner Institut
Digital Engineering · Universität Potsdam

Week 3: Complex Data Types

Unit 4: Safe Dictionary Access

Christian Drumm

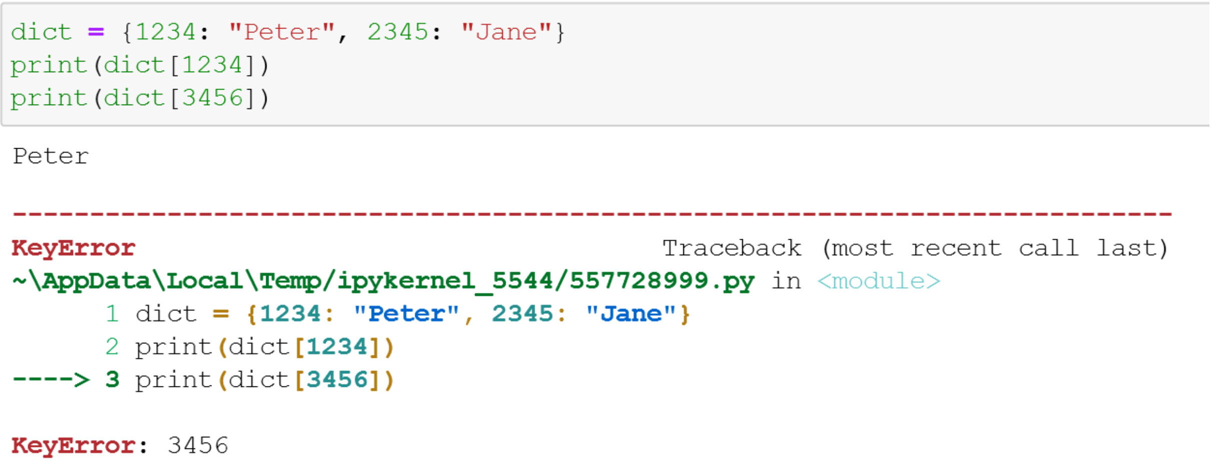
Stephan Jacobs

**Design IT.
Create Knowledge.**

www.hpi.de

Safe dictionary access
Ensuring safe access to a dictionary

- Accessing a dictionary with a nonexistent key results in a *KeyError*
  - Program is interrupted/aborted
  - Similar to accessing a list with a nonexistent index



```
dict = {1234: "Peter", 2345: "Jane"}
print(dict[1234])
print(dict[3456])
```

```
Peter

---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_5544/557728999.py in <module>
      1 dict = {1234: "Peter", 2345: "Jane"}
      2 print(dict[1234])
----> 3 print(dict[3456])

KeyError: 3456
```

- Using the keyword `in` it is possible to prevent this error.
  - `x in dict` returns `True` if the key `x` exists in the dictionary `dict`, `False` if it does not exist.
- Alternatively: Use the dictionary-method `dict.get( )`
  - It returns either the assigned value or an error message, which can be defined by the programmer.

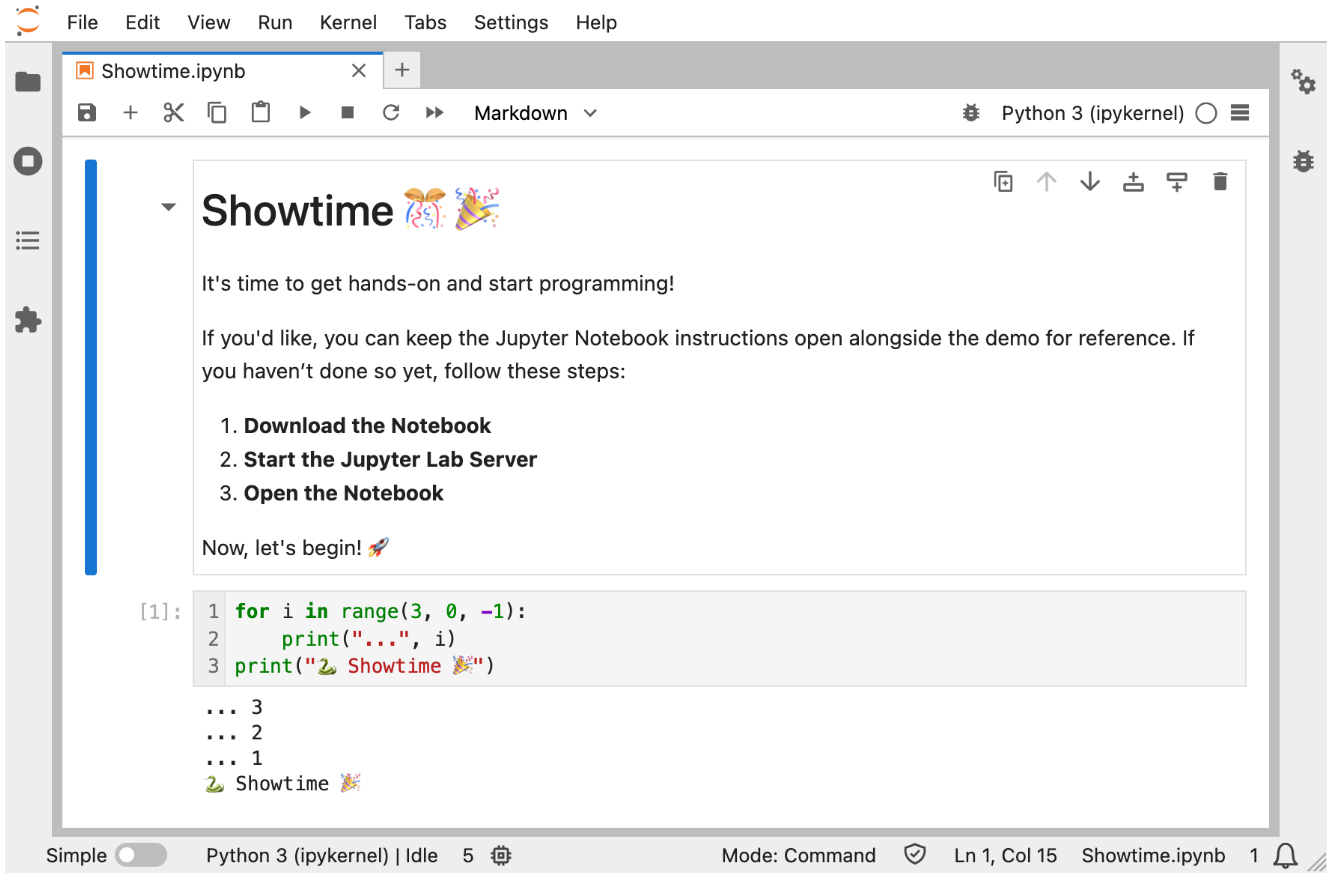
Safe dictionary access
Showtime

Now it’s time to get hands on and start programming!

If you like, you can open the Jupyter Notebook instructions in parallel to the demo.

If you haven’t done so yet:

- Download the Notebook
- Start the Jupyter Server and open the Notebook



Showtime 🎊🎉

It's time to get hands-on and start programming!

If you'd like, you can keep the Jupyter Notebook instructions open alongside the demo for reference. If you haven’t done so yet, follow these steps:

1. **Download the Notebook**
2. **Start the Jupyter Lab Server**
3. **Open the Notebook**

Now, let's begin! 🚀

[1]:

```python
for i in range(3, 0, -1):
    print("...", i)
print("🐍 Showtime 🎉")
```

```
... 3
... 2
... 1
🐍 Showtime 🎉
```

Safe dictionary access
Summary / key takeaways

In this unit you learned ...

- … how to prevent access errors in dictionaries
- … how to get the value for specific keys securely without interrupting the main program