Exception Payloads

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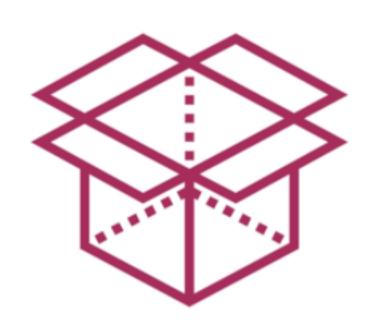# Overview

Exception Payloads

Exceptions can carry payload data

Most exceptions accept a single string in their constructor call

The most common exception you'll likely raise is `ValueError`

median.py

```python
11
12  def main():
13      try:
14          median([])
15      except ValueError as e:
16          print("Payload repr:", repr(e))
17          print("Payload str:", str(e))
18
19
```

main() > except ValueError as e

Python Console

```
import sys; print('Python %s on %s' % (sys.version, sys.platform))
sys.path.extend(['/var/folders/0k/58g36_tx22xcxqd9mwqzg_h00000gp/T/tmp_tk1ziec/bu

Python Console
>>> from median import *
>>> main()
Payload repr: ValueError('median() arg is an empty series')
Payload str: median() arg is an empty series

>>>
```

Special Variables

Most exception payloads are strings containing a helpful message.

While you can pass multiple arguments to the **Exception** constructor...

...you should only pass a single string.

"No restriction is placed upon what may be passed in for args for backwards-compatibility reasons. In practice, though, only a single string argument should be used. "
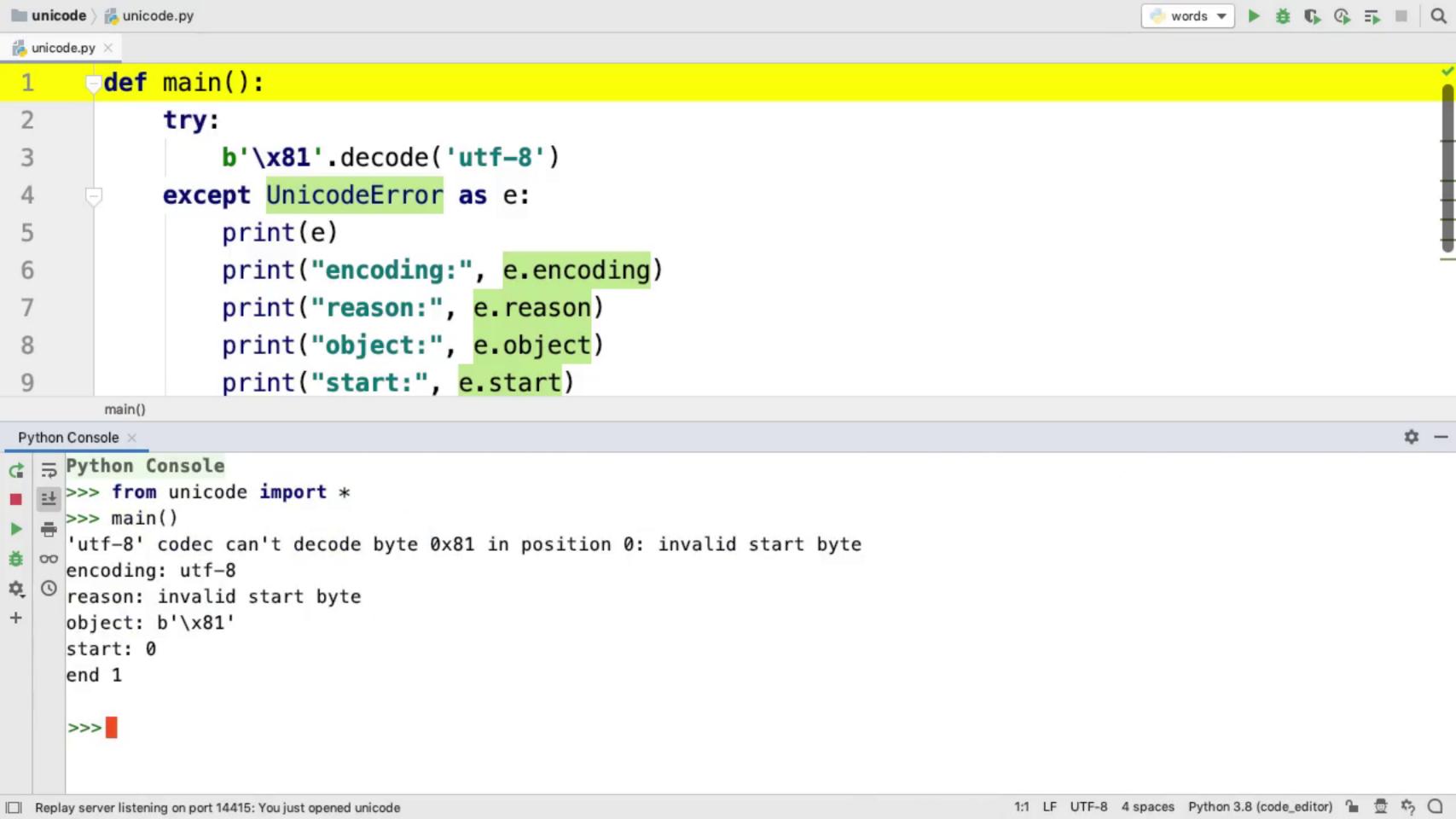
PEP 352

Exception.args

Only expect `args` to contain a single string

This string is what you get when you pass the exception to `str()`

```python
def main():
    try:
        b'\x81'.decode('utf-8')
    except UnicodeError as e:
        print(e)
        print("encoding:", e.encoding)
        print("reason:", e.reason)
        print("object:", e.object)
        print("start:", e.start)
```

main()

Python Console

```
Python Console
>>> from unicode import *
>>> main()
'utf-8' codec can't decode byte 0x81 in position 0: invalid start byte
encoding: utf-8
reason: invalid start byte
object: b'\x81'
start: 0
end 1

>>>
```

Replay server listening on port 14415: You just opened unicode

Summary

Python exceptions can carry a payload

Most built-in exceptions accept a single string argument in their constructor

This string is stored as the exception's payload

Exceptions can store data in args

In practice, args should have a single string entry

Further data should be stored in other attributes