A Short and Incomplete Introduction to Python

Part 5: Exception handling

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Exception handling

Exceptions

"Exceptions" is the name given in Python to error conditions.

You can write code that intercepts some error conditions and reacts appropriately.

See also: http://docs.python.org/library/exceptions.html

What does an exception look like?

```
>>> stream.write('foo')
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
IOError: File not open for writing
```

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Traceback (most recent call last):
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```

This is the exception *message*: it is supposed to be read by the (human) user.

What does an exception look like?

```
>>> stream.write('foo')
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
IOError: File not open for writing
```

This is the exception *class name*; it is used for catching exceptions (syntax in the next slide).

```python
try:
    # code that might raise an exception
except SomeException:
    # handle some exception
except AnotherException as ex:
    # the actual Exception instance
    # is available as variable 'ex'
finally:
    # performed on exit in any case
```

The optional `finally` clause is executed on exit from the `try` or `except` block in *any* case.

Reference: http://docs.python.org/reference/compound_stmts.html#try

Raising exceptions in your code

Use the **raise** statement with an `Exception` instance:

```python
if an_error_occurred:
    raise RuntimeError("Spider sense is tingling.")
```

Exercise 5.A: Try loading file `values2.txt` with the `load_data()` function from Exercise 4.A – what exception does Python raise?

Edit the `load_data()` function into a `load_data2()` that *ignores* any line that does not contain an integer number.

Bonus points if you can write `load_data2()` so that it has exactly the same output of `load_data()`, i.e. minimize the number of rejected input lines.