Py ch11, M2 §10.8-10.13: Exceptions

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CMPT14x
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Review last time (Py ch10)

- Dictionaries
  - Keys and values
  - Basic dictionary methods:
    - .keys(), .values(), .items()
  - Iterating through dictionaries
  - Other dictionary methods:
    - len(), del, in, .get(), .copy()
  - Application: hinting
    - Fibonacci example

Options for error handling

- Use a combination of these:
  - Ask the user to be nice:
    - User manual, precondition comments, prompts
  - Print an error message to screen
  - Set a result flag:
    - e.g., return False upon error
  - Panic and die: sys.exit()
  - Raise an exception: ZeroDivisionError

Exceptions

- Exceptions are a way of terminating execution of the current context
- When an exception is raised (thrown),
  - execution of the current procedure stops, and
  - Control jumps to the nearest exception handler (catches the exception)
- The exception handler can cleanup
- Execution then continues after that block
- If the exception reaches outermost level, an error message is automatically generated

try / except

- If an exception is raised within a try block,
- Execution of the block terminates and control jumps to the except clause:

```
try:
    while True:
        numer = input('Numerator: ')
        denom = input('Denominator: ')
        print '%d / %d = %d' % (numer, denom, numer /
          denom)
except:
    print 'Oops!'
```

Catching specific exceptions

- We can opt to catch only specific exceptions:

```
try:
    while True:
        numer = input('Numerator: ')
        denom = input('Denominator: ')
        print '%d / %d = %d' % (numer, denom, numer /
          denom)
except ZeroDivisionError:
    print 'Oops! Divide by zero!'
```

- Any other exception falls through to the next exception handler

More info on exceptions

- The Python tutorial is a good resource:
- http://docs.python.org/tut/node10.html
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TODO

- Lab07 due this week: Ch9 choose one:
  - #37+38: people db, matching
  - #40+41: online chequebook
  - #46: church directory
- Paper topic by Mon 13Nov