

Error Handling With Exceptions 错误处理

异常用于处理异常错误(“异常错误”)。

•通常这些是致命的运行时错误(“崩溃”程序)

•示例:试图打开一个不存在的文件

•处理异常的基本结构:

```
try:
    Attempt something where exception error may happen
except <exception type>:
    React to the error
else: # Not always needed
    What to do if no error is encountered
finally: # Not always needed
    Actions that must always be performed (possibly clean up work)
```

常见的错误信息:

Class	Description
Exception	A base class for most error types
AttributeError	Raised by syntax obj.foo, if obj has no member named foo
EOFError	Raised if “end of file” reached for console or file input
IOError	Raised upon failure of I/O operation (e.g., opening file)
IndexError	Raised if index to sequence is out of bounds
KeyError	Raised if nonexistent key requested for set or dictionary
KeyboardInterrupt	Raised if user types ctrl-C while program is executing
NameError	Raised if nonexistent identifier used
StopIteration	Raised by next(iterator) if no element; see Section 1.8
TypeError	Raised when wrong type of parameter is sent to a function
ValueError	Raised when parameter has invalid value (e.g., sqrt(−5))
ZeroDivisionError	Raised when any division operator used with 0 as divisor

Table 1.6: Common exception classes in Python

通过状态机来实现较好的代码:

```
inputFileOK = False
while (inputFileOK == False):
    try:
        inputFileName = input("Enter name of input file: ")
        inputFile = open(inputFileName, "r")
    except IOError:
        print("File", inputFileName, "could not be opened")
    else:
        print("Opening file", inputFileName, " for reading.")
        inputFileOK = True

        for line in inputFile:
            sys.stdout.write(line)
        print ("Completed reading of file", inputFileName)
        inputFile.close()
        print ("Closed file", inputFileName)
```

Still inside the body of the while loop (continued)

```
finally:
    if (inputFileOK == True):
        print ("Successfully read information from file", inputFileName)
    else:
        print ("Unsuccessfully attempted to read information from file",
            inputFileName)
```