

Problems — Exceptions

- (1) Use the `os`-module to access all of the files in a directory and try to read the first line. Notice all the exceptions that occur and write exception handlers that deal with them in an appropriate manner, such as stating that this file is not unicode readable. These should be triggered by such things as:
 - (1) Unicode decode errors
 - (2) Faulty permissions (you might have to change some permissions in order to see that).
 - (3) Sub-directories
 - (4) Anything else you can think of.
- (2) Python integer arithmetic has no overflows, but floating point arithmetic can cause an overflow. Find the power of 2 that causes an `OverflowError`, but make sure that your program does not terminate with this error by using an exception.

```
power = 1.00

while True:
    power = power + 1
    try:
        2**power
```

- (3) Write a program that iterates through a list using a while loop. The program adds all numbers in the list. When an `IndexError` occurs, the program stops.
- (4) Download a large utf-8 file from Project Gutenberg. When you try to read it line by line, almost for sure you will encounter a `UnicodeDecodeError`. Use an exception handler to count such lines and print out the result.