

Lab 8

This lab provides exercises on file I/O.

Download lab8 files and place it in your `cpe101` directory.

Converting a String

Develop this part in the `convert` directory in files `convert.py` and `convert_tests.py`.

`float_default`

The `float_default` function takes a string and a default float value. If the argument string represents a float value, then this function will return that value (as a float). If such a conversion is not possible, then the function will return the provided default value.

Conversion of a string to a float can be accomplished by passing the string as an argument to `float`. This operation can, however, fail (e.g., `float('xyz')`). An invalid conversion attempt result in an exception being raised.

Exceptions are covered in detail in CSC 203, so we will use a simple case here. In short, your code will `try` something. If that something works, then great ... continue on. If that something does not work, then "catch" the exception and do something else. You can think of this as asking for forgiveness instead of asking for permission. The code outline below gives the simple structure of working with operations that may raise exceptions.

```
try:
    # what you want to attempt to do
except:
    # what to do if the previous code raises an exception
```

Write the `float_default` function to convert a string to a float, returning the provided default value if the conversion fails.

File Input

Develop the following in the `file` directory in `file.py`.

Write a program that takes a single command-line argument. This argument should be the name of a file to open for reading (if the argument is not provided or the file cannot be opened, then print an error message and terminate the program using `exit`).

Your program should open the file and read each line until `EOF` is reached. Each line in the file will consist of two float values. For each line, read the float values and print their sum. If a line is missing a value or if one of the values cannot be converted, then print an error message for that line.

Demonstration

Demonstrate each part of the lab to your instructor to have this lab recorded as completed. In addition, be prepared to show the source code to your instructor.