

## Closed Lab 03

## grep

Description: `grep` is a Unix/Linux command line tool that scans files for a target string.

The output consists of the filename and the contents of the line for every occurrence of the target string. The `-n` flag to `grep` causes it to report the line number for each occurrence in addition to the information above.

For this assignment, you will implement a version of `grep` in Python. Your implementation will prompt the user for the search term. It will then scan all of the files in a provided directory of files for a target string entered by the user. It will behave as described above for `grep -n`. Your program should find the string independent of upper or lower case. An example output line searching for ‘Lab’ might look like this if the LaTeX file for this writeup was the only file searched:

```
cl03.tex: 42: This lab assignment is awesome.
```

Your program should identify the same line if the user enters any of the following strings: ‘LAB’, ‘lab’, ‘lAb’, ‘lAB’, ‘LaB’, ‘LAb’, ‘Lab’, ‘laB’.

Details: The zip file you downloaded contains the directory of files your program should scan as well as a Python file to (just barely) get you started.

Python strings, similar to Java strings, support a method called `lower` that returns an all lower-case version of the string but does not alter the string. An example call for string `s` would look like: `s.lower()`.

Because some of the input files contain non-ASCII characters, you should open files using the `encoding` optional parameter. For example:

```
fn = open('foo.txt', 'r', encoding='utf8')}
```