CS2303_HW06

For this assignment, 2 programs were created.

1. `fed2cs2303` : this program was finished in lab06 and parses a CSV from federal govt.
2. `zipcode` : this program reads csv created by `fed2cs2303` and allows user to filter data from it.

Compilation

To compile the program, open the directory into any unix environment and enter make to compile all the source files.

```
$ cd <path to directory>/cs2303_hw06
~/<path to directory>/cs2303_hw06$ make
```

Note: To compile individual testers enter `make fed2cs2303` or `make zipcode` .

To get doxygen output, configure the target folder in the makefile and enter make docs.

```
$ make docs
```

To remove object files and executables, run this command:

```
$ make clean
```

fed2cs2303 usage

```
$ ./fed2cs2303 input_file output_file
```

Parameter	Type	Description
`input_file`	file path	**Required**. File Path of input csv.
`output_file`	file path	**Required**. File Path to write to. New one will be created if not found.

Note: Due to the `SZ_FILENAME` preprocesser directive, both file paths can only be a max of 129 characters only.

zipcode usage

```
$ ./zipcode input_file
```

Parameter	Type	Description
`input_file`	file path	**Required**. File Path of input csv formatted by `fed2cs2303` .

Note: Due to the `SZ_FILENAME` preprocesser directive, both file paths can only be a max of 129 characters only.

Note: Due to the `MAXLINE` preprocesser directive, command line inputs can only be a max of 4096 characters.

fed2cs2303 tests

```
$ ./fed2cs2303
usage: ./fed2cs2303 input_file output_file
```

```
 $ cat output.csv
 $ ./fed2cs2303 free-zipcode-database.csv output.csv
 $ cat output.csv
 02636,STANDARD,CENTERVILLE,MA,41.639999,-70.339996
 02239,UNIQUE,COM/ENERGY SERVICES,MA,42.360001,-71.099998
 (...)
```

zipcode tests

```
 $ ./zipcode
 usage: ./zipcode input_file
```

```
 $ ./zipcode output.csv
 Enter city names line by line: (CTRL+D to stop)
 _ WORCESTER

 _

 All items from output.csv were processed successfully!

 01601,INVALID,WORCESTER,MA,42.259998,-71.800003
 01602,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01603,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01604,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01605,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01606,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01607,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01608,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01609,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01610,STANDARD,WORCESTER,MA,42.259998,-71.800003
 01612,STANDARD,WORCESTER,MA,42.310001,-71.930000
 01613,INVALID,WORCESTER,MA,42.259998,-71.800003
 01614,INVALID,WORCESTER,MA,42.259998,-71.800003
 01615,INVALID,WORCESTER,MA,42.259998,-71.800003
 01653,UNIQUE,WORCESTER,MA,42.259998,-71.800003
 01654,UNIQUE,WORCESTER,MA,42.259998,-71.800003
 01655,STANDARD,WORCESTER,MA,42.259998,-71.800003
```

```
 $ ./zipcode output.csv
 Enter city names line by line: (CTRL+D to stop)
 _ wOrCeSter
 _ bOsToN
 _ alabama

 _

 All items from output.csv were processed successfully!

 02108,STANDARD,BOSTON,MA,42.349998,-71.059998
 02109,STANDARD,BOSTON,MA,42.349998,-71.059998
 02110,STANDARD,BOSTON,MA,42.349998,-71.059998
 02111,STANDARD,BOSTON,MA,42.349998,-71.059998
 02112,INVALID,BOSTON,MA,42.349998,-71.059998
 02113,STANDARD,BOSTON,MA,42.349998,-71.059998
 02114,STANDARD,BOSTON,MA,42.349998,-71.059998
 02115,STANDARD,BOSTON,MA,42.349998,-71.059998
 02116,STANDARD,BOSTON,MA,42.349998,-71.059998
 02117,INVALID,BOSTON,MA,42.349998,-71.059998
 02118,STANDARD,BOSTON,MA,42.349998,-71.059998
 02119,STANDARD,BOSTON,MA,42.349998,-71.059998
 02120,STANDARD,BOSTON,MA,42.349998,-71.059998
 02121,STANDARD,BOSTON,MA,42.349998,-71.059998
 02122,STANDARD,BOSTON,MA,42.349998,-71.059998
 02123,INVALID,BOSTON,MA,42.349998,-71.059998
```

```
02123,INVALID,BOSTON,MA,42.349998,-71.059998
02124,STANDARD,BOSTON,MA,42.349998,-71.059998
02125,STANDARD,BOSTON,MA,42.349998,-71.059998
02126,STANDARD,BOSTON,MA,42.259998,-71.099998
02127,STANDARD,BOSTON,MA,42.349998,-71.059998
02128,STANDARD,BOSTON,MA,42.349998,-71.059998
02129,STANDARD,BOSTON,MA,42.380001,-71.059998
02130,STANDARD,BOSTON,MA,42.299999,-71.110001
02131,STANDARD,BOSTON,MA,42.279999,-71.129997
02132,STANDARD,BOSTON,MA,42.279999,-71.160004
02133,STANDARD,BOSTON,MA,42.349998,-71.059998
02134,STANDARD,BOSTON,MA,42.349998,-71.129997
02135,STANDARD,BOSTON,MA,42.349998,-71.150002
02136,STANDARD,BOSTON,MA,42.259998,-71.110001
02137,INVALID,BOSTON,MA,42.250000,-71.120003
02163,STANDARD,BOSTON,MA,42.349998,-71.059998
02196,INVALID,BOSTON,MA,42.349998,-71.059998
02199,STANDARD,BOSTON,MA,42.349998,-71.059998
02201,UNIQUE,BOSTON,MA,42.349998,-71.059998
02203,STANDARD,BOSTON,MA,42.349998,-71.059998
02204,UNIQUE,BOSTON,MA,42.349998,-71.059998
02205,INVALID,BOSTON,MA,42.349998,-71.059998
02206,UNIQUE,BOSTON,MA,42.349998,-71.059998
02210,STANDARD,BOSTON,MA,42.349998,-71.059998
02211,UNIQUE,BOSTON,MA,42.349998,-71.059998
02212,UNIQUE,BOSTON,MA,42.349998,-71.059998
02215,STANDARD,BOSTON,MA,42.349998,-71.059998
02217,UNIQUE,BOSTON,MA,42.349998,-71.059998
02222,STANDARD,BOSTON,MA,42.349998,-71.059998
02228,INVALID,BOSTON,MA,42.349998,-71.059998
02241,UNIQUE,BOSTON,MA,42.349998,-71.059998
02266,UNIQUE,BOSTON,MA,42.349998,-71.059998
02283,STANDARD,BOSTON,MA,42.349998,-71.059998
02284,STANDARD,BOSTON,MA,42.349998,-71.059998
02293,UNIQUE,BOSTON,MA,42.349998,-71.059998
02295,UNIQUE,BOSTON,MA,42.349998,-71.059998
02297,UNIQUE,BOSTON,MA,42.349998,-71.059998
02298,INVALID,BOSTON,MA,42.340000,-71.050003
02207,UNIQUE,BOSTON,MA,42.349998,-71.050003
02216,UNIQUE,BOSTON,MA,42.340000,-71.070000
01601,INVALID,WORCESTER,MA,42.259998,-71.800003
01602,STANDARD,WORCESTER,MA,42.259998,-71.800003
01603,STANDARD,WORCESTER,MA,42.259998,-71.800003
01604,STANDARD,WORCESTER,MA,42.259998,-71.800003
01605,STANDARD,WORCESTER,MA,42.259998,-71.800003
01606,STANDARD,WORCESTER,MA,42.259998,-71.800003
01607,STANDARD,WORCESTER,MA,42.259998,-71.800003
01608,STANDARD,WORCESTER,MA,42.259998,-71.800003
01609,STANDARD,WORCESTER,MA,42.259998,-71.800003
01610,STANDARD,WORCESTER,MA,42.259998,-71.800003
01612,STANDARD,WORCESTER,MA,42.310001,-71.930000
01613,INVALID,WORCESTER,MA,42.259998,-71.800003
01614,INVALID,WORCESTER,MA,42.259998,-71.800003
01615,INVALID,WORCESTER,MA,42.259998,-71.800003
01653,UNIQUE,WORCESTER,MA,42.259998,-71.800003
01654,UNIQUE,WORCESTER,MA,42.259998,-71.800003
01655,STANDARD,WORCESTER,MA,42.259998,-71.800003
```

Note: Extra credit is demonstrated here.