CSCE 3600: Systems Programming Minor

Assignment 5 – Python

Due: 11:59 PM November 30, 2021

PROGRAM DESCRIPTION:

In this assignment, you will write a Python program to process an input file.

Download the file minor5.tsv. Each row of this file contains a data record separated by a single tab. The fields are: state, street address, city, zip code.

Your need to write a python program that allows users to search for entries using the city or zip code.

(a) Write a python function called load_records that given a filename as input, opens the file and reads in the data. Each data record should be represented as a tuple of strings. The function should return two objects: A dictionary mapping zip codes to lists of such tuples and a dictionary mapping cities to sets of zip codes.

(b) Write a python program that first reads in the data file once (using the function from part (a)), and then asks the user repeatedly to enter a zip code or a city name (in a while loop until the user types "quit"). For each request, the program prints all data records for this city or zip code. If city names are ambiguous (duplicated city names), all entries should be printed. If no records can be found, you need to print according information such as :

```
No records found in this town.
or
No records found in this zip code.
```

(c) The format for printed out information should be:

Street address

Town, state, zipcode

SAMPLE OUTPUT:

```
hz0099@cse02:~/3600/python$ python minor5.py

Enter input:10037
W. 57th St. & Ninth Ave at Balsley Park
NY, New York, 10037

Enter input:88352
corner of bookout and central avenue
tularosa, New Mexico, 88352

Enter input:Wynne
```

```
705 E. Union Ave
Wynne, Arkansas, 72396

Enter input:Fort Collins
802 W. Drake Rd
Fort Collins, Colorado, 80526

Enter input:denton
No records found in this town.
Enter input:76207
No records found in this zip code.

Enter input:NY
W. 57th St. & Ninth Ave at Balsley Park
NY, New York, 10037
112th Madison Avenue
NY, New York, 10029

Enter input:quit
hz0099@cse02:~/3600/python$
```

REQUIREMENTS:

- Your code should be well documented in terms of comments. For example, good comments in general consist of a header (with your name, course section, date, and brief description), comments for each variable, and commented blocks of code.
- Your programs should be named "**`minor5.py`**"
- Your program will be graded based largely on whether it works correctly on the CSE machines (e.g., `cse01`, `cse02`, …, `cse06`), so you should make sure that your program compiles and runs on a CSE machine.
- Please pay attention to the **SAMPLE OUTPUT** for how this program is expected to work. If you have any questions about this, please contact your instructor, TAs,or IA assigned to this course to ensure you understand these directions.
- This is an individual programming assignment that must be the sole work of the individual student. Any instance of academic dishonesty will result in a grade of "F" for the course, along with a report filed into the Academic Integrity Database.

SUBMISSION:

- You will electronically submit your python source code file to the **Minor Assignment 5** dropbox in Canvas by the due date.