

HW #0 Programming Assignment

Maximum Points: 10

For this assignment, you are asked to create a C# MS Windows program using Visual Studio. You will use the file called *zip.dat* to create reports based on user input. **Read ALL instructions carefully.**

*The zip.dat file contains zip code information for the United States and its territories. Be sure you understand the file structure **before** you begin this assignment. Description and explanation on page 3.*

You will be writing an “event driven” program. Be sure you understand what that means before you begin.

In addition, read all requirements before beginning your Homework.

Program Requirements

The user should be able to navigate to the *zip.dat* file and then choose which report to print or view.

Your program should produce the following reports:

- The total number of valid zip codes in the file (all types) (Do not count duplicates)
- All of the PO Box zip codes in the following format: *City, State Zip*
 - This report should display on screen and be written to a file called *POBoxes.txt*
- The result of a user entered zip code
 - Provide a means for the user to enter a zip code
 - Display the City or Cities and State and what type of zip code was entered

Be sure to provide meaningful formatted displays to the user so they know what they are seeing.

In addition to successfully coding your program, you are required to meet the following **requirements**:

1. As part of familiarizing yourself with Visual Studio and C# you are responsible for understanding the fundamentals of the dot Net framework.
2. Follow the “C# Programming/Code/Style Conventions” recommendations found here: <http://www.dotnetspider.com/tutorials/BestPractices.aspx>
3. Include a complete heading for each function and class written.
4. Include a heading (**comment** section) at the beginning of the entry file of your program that includes the following in the order given:
 - a. Explain what the program does
 - b. Your name
 - c. CS 441 Programming Assignment 0
 - d. Date that the first draft was entered into the computer.
 - e. Date that the program is completed.
 - f. Acknowledge ALL assistance that you may have received
 - g. Please indicate whether I have permission to “publish” your solution for other students to view



Upload all .cs files to Moodle and a working exe file with your name at the beginning of the filename (e.g. fletcherHW0.exe) as your submission for this assignment.

The Zip.dat File

The zip.dat file has one record per line. Each field is of the specified length below. For this programming assignment, you will need to read *only* the first **four** fields of each line in the file. Note: The zip.dat file includes a 2 line header, each line beginning with 00000 and a 2 line footer, each line beginning with 99999.

Field type	Length	Notes
Zip Code	5	Zip Code Type translation: P = Zip Code for P.O. Boxes U = Unique Zip Code M = APO/FPO Zip Code Blank = Standard Zip Code
State	2	
City	28	
Type	1	
County FIPS	5	
Latitude	7	
Longitude	8	
Area Code	3	
Finance Code	6	
Last Line	1	
FAC	1	
MSA	4	
PMSA	4	
Filler	3	
CR + LF	2	

Reading the Zip.dat File

Sample data from the file showing 6 zip/city combinations:

```
56054MNLAFAYETTE=====2710344.4212 94.3788507265200LP
56055MNLAKE CRYSTAL=====2701344.1251 94.2512507265240LP
56055MNNORTH MANKATO=====2701344.1251 94.2512507265240 X
56056MNLA SALLE=====P2716543.9822 94.6288507265420LP
56057MNLE CENTER=====2707944.3929 93.7276507265460LP
56058MNLE SUEUR=====2707944.4606 93.9113507265530LP
```

The zip codes are 56054, 56055, 56057 and 56058. Note that there are 2 city names for 56055

The state (or possession) is 2 characters, in this case MN (Minnesota)

The cities are LaFayette, Lake Crystal, North Mankato, La Salle, Le Center, and Le Sueur (all capital letters). The format allots exactly 28 characters for a city name. The actual names have been padded (to the right) with spaces. (For ease of reading, I added lines to the sample data)

This one space character tells you what type of zip code. In this sample, only zip 56056 is a P.O. Box (For ease of reading, I changed the blank space representing the standard zip to a '='.)

These fields are not used for this assignment and can be ignored.