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CPT187 – C02

Chapter 8 - Program 14 (Average Price Per Year)

# **REQUIREMENTS**

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| **Date Submitted:** | 2/19/2023 |
| **Application Title:** | Gas Prices |
| **Purpose:** | The program will read in text from a file containing gas prices from 1993-2013 and calculate the annual average of gas prices. |
| **Program Procedures:** | Start the program. |
| **Algorithms, Processing, and Conditions:** | 1. Program calls main() function. 2. Function calls get\_info() function. 3. Function creates file object 4. Function creates loop to iterate through each line of the file. 5. File sanitizes data and concatenates the year and price into individual lists 6. After each iteration, the individual lists are concatenated into a nested list containing all data 7. The nested list is returned to main 8. Main calls the avg\_annual() function. 9. The entries variable is set for the loop to iterate over each entry. 10. A loop is created to go through each year from 1993-2013 11. Price and annual\_total accumulator values are set to 0. 12. A nested loop is created to determine which values are in the current year. 13. If the item is in the current year, its price is added to the annual total and 1 is added to the number of prices. 14. At the end of each iteration, the year and average price are calculated and printed and the accumulators are reset to 0. |
| **Notes and Restrictions:** | The file “GasPrices.txt” must be in the same directory as the python code. |
| **Comments:** | This program makes use of nested loops and nested lists. |

# **USE CASE**

1. User starts the program.
2. Program analyzes file.
3. Program prints results