Module 11 Assignment
Points: 100 points

Notes:
This assignment will use a **two dimensional list** to hold shipping charges and a **dictionary** to hold inventory data. The user will enter product identification numbers and quantities and a bill is produced.

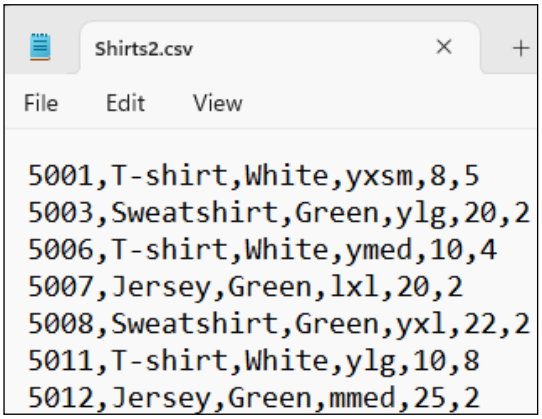
Two Dimensional List:
Shipping charges are based upon the state (ME, VT, NH) and on the quantity ordered using the data shown below. For example, ordering 3 products going to ME has shipping charge $7.50. This data should be stored in a two dimensional list with 3 rows and 4 columns.

	1	2..5	6..10	> 10
ME	5.00	7.50	10.00	12.75
VT	4.50	7.00	11.75	12.50
NH	3.75	5.50	10.25	11.75

Dictionary:
File **Shirts2.csv** contains many rows of comma separated data. Each line contains data for product identification, style, color, size code, price, and number in stock.

Product identification 5001 is for a T-shirt with color White and size yxsm. The unit price is $8.00 and the number in stock is 5.

This data should be read into a dictionary where the **key** is the product identification and the **value** is a list of other data pieces.



Processing:
Ask for the customer name and state.
Compute the row index for the 2D list.
If the state is invalid, end the program.

Use an efficient sentinel-controlled loop to read product identifications until the user wishes to quit.
    If the product id is not found in the dictionary report an error.
    Otherwise:
        Report the style, color, size, unit price and stock in a neat chart
        Ask the user for quantity
        If the quantity is larger than stock report and error message
        Otherwise:
            Add quantity to total number of shirts purchased.
            Compute and report cost as quantity times unit price.
            Edit the record by subtracting quantity from stock and write back to dictionary

Compute shipping cost from state and total number of shirts purchased.
Report shipping cost.
Report grand total cost.

Sample #1: Invalid State

```
Enter customer name: Hadley
Enter state (ME, VT, NH): MA
Invalid state, program is ending...
```

Sample #2: Illustrating invalid product identification

```
Enter customer name: Hadley
Enter state (ME, VT, NH): ME

Enter product id (quit to end): 1111
1111 is not found

Enter product id (quit to end): 5218
Style          Color     Size      Unit Price     Stock
Sweatshirt     White     lxl       28.00          5
Enter quantity: 1
Cost: $28.00

Enter product id (quit to end): quit

Shipping cost: $5.00
Grand Total: $33.00
```

Sample #3: Illustrating dictionary update on stock by ordering same product twice

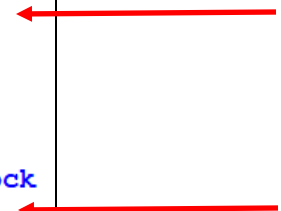
```
Enter customer name: Hadley
Enter state (ME, VT, NH): ME

Enter product id (quit to end): 5033
Style          Color     Size      Unit Price     Stock
Sweatshirt     Green     mxl       33.00          15
Enter quantity: 5
Cost: $165.00

Enter product id (quit to end): 5033
Style          Color     Size      Unit Price     Stock
Sweatshirt     Green     mxl       33.00          10
Enter quantity: 1
Cost: $33.00

Enter product id (quit to end): quit

Shipping cost: $10.00
Grand Total: $208.00
```



Sample #4: Illustrating invalid quantity

```
Enter customer name: Hadley
Enter state (ME, VT, NH): VT

Enter product id (quit to end): 5068
Style          Color     Size      Unit Price     Stock
Sweatshirt     Pink      lxl       28.00          10
Enter quantity: 200
Stock is not sufficient

Enter product id (quit to end): 5068
Style          Color     Size      Unit Price     Stock
Sweatshirt     Pink      lxl       28.00          10
Enter quantity: 10
Cost: $280.00

Enter product id (quit to end): quit

Shipping cost: $11.75
Grand Total: $291.75
```

Grading Constraints:

- Use of global variables is not accepted.
- Infinite while(True) loops or loops using jump statements such as break, continue are not accepted.
- Code is not accepted if a two dimensional list or a dictionary is not used.

Grading Rubric:

Commenting is done per description in previous projects.	10 pts
The two dimensional list of shipping charges is created.	15 pts
The dictionary is read correctly from the file using key of product identification.	15 pts
The program ends on an invalid state.	5 pts
The 2D list row index is computed from the state.	5 pts
The sentinel controlled loop structure is correct.	5 pts
An error message displays on an invalid product identification.	5 pts
The product data displays in a neat chart on a valid product identification.	10 pts
An error message displays on an invalid quantity.	5 pts
The cost displays on a valid quantity.	5 pts
The dictionary is updated on a valid quantity.	5 pts
The 2D column index is computed from the total number of shirts.	5 pts
The shipping charge reports correctly from the 2D list.	5 pts
The grand total reports correctly.	5 pts

Need Help?

Use the online scheduler to set up a Zoom meeting with the instructor or use email including your question and source code .py file.