Big Program II - Credit Card Debt

Suppose you are given a large data file (csv) with information on credit card debt for individuals in the U.S. You are tasked with writing some code to search this file for things like:

1. All the people whose name starts with "Jo"
2. All the people with, say, less than $5000 in credit card debt.
3. All the people from a given state.

Write some code to do this!!

Questions:

(1) What does the data in the CSV file look like?

(2) what data structures will we use?

(3) What algorithms for searching will we need?

CustomerData.csv

Last Name (string), State (string), Debt. (float)

First Idea: 3 ordered lists.

names = [ ] ← list of strings

states = [ ] ← list of strings

debts = [ ] ← list of floats

10000 lines long!!

Step 1: Write a function which will read the data from the file, store the data in these lists, and then return the lists.

String

```
def read_customer_data (filename):
    names = [], states = [], debts = []
    ...
    return names, states, debts
```

Reading data from csv files:

```
with open (filename, 'r') as file:
    reader = csv.reader (file)
    for row in reader:
        names.append (row[0])
        states.append (row[1])
        debts.append (float (row[2]))
```

Step 2:

Get information from user

(i) debt limit

(ii) name to search for

(iii) state to look for

```
debt_limit = int(input())
search_phrase = input()
st = input()
```

Step 3:

Find the highest credit card debt

```
index_max = 0
for n in range(len(names)):
    if debts[n] > debts[index_max]:
        index_max = n
print(f"Highest Debt: {names[index_max]}")
```

Step 4 - 8:

Similar procedures ...

just break it down!!

Could have a 100 line program!

Suddenly, you have a [illegible] that seems like a large task at the start... but each step is less than 10 lines.