第一题FML to CSV

You are working at a logistics company which handles international sea freight, which primarily consists of container shipments. Before a ship docks the captain emails a FML manifest file to your company.

Every day you have to manually convert every ships FML file to a standard CSV file. *How boring!* This file is then sent to Australia's "Border Force" for record keeping.

You decide to write a Python script to **convert an FML file to CSV.**

**Usage Example**

Path to FML: **example.fml**

Parsed example.fml and wrote shipments.csv.

**Script Requirements**

1. Ask the user for a path to the FML file
2. Parse the FML file
3. Write the converted CSV to shipments.csv
   1. Overwrite the file if it already exists

*The fields used in the FML field are the same* as those in the CSV specification below.

**CSV Specifications**

General:

* filename: shipments.csv
* path: current directory
* header: True
* rows: each row represents a shipment

Fields (in order):

1. shipment\_id
2. sender
3. sender\_address
4. receiver
5. receiver\_address
6. weight\_total
7. volume\_total
8. item\_count
9. description
10. dangerous\_goods
11. plant\_matter
12. restricted\_items

**Take note!** Australia has strict customs and record keeping requirements. The complete details of each shipment must be known. Unfortunately shippers in other countries do not fill in every field.  
  
When a shipper hasn't provided a value for a field you must fill that field with "NAN", which is short for "Not a Number" and is commonly used to represent missing or invalid data (even for string fields!)

**Example CSV File**

An example FML file (example.fml) has been provided in your workspace.

This FML file should be converted the following CSV file:

shipment\_id,sender,sender\_address,receiver,receiver\_address,weight\_total,volume\_total,item\_count,description,dangerous\_goods,plant\_matter,restricted\_items

ef234,Taiwan Electronics Co,Taipei,JB Hi-Fi,Port Melbourne,14986.4,26.72,167,Radios,NAN,NAN,NAN

vq21890,Shenzen Portable Machines,Shenzen,Kogan,Dandenong,18645.71,29.45,243,Misc. Electronics,Lithium Ion Batteries,NAN,NAN

sq45238,Saigon Devices,Saigon,Harvey Norman,Dandenong,10812.55,20.03,93,Televisions,NAN,NAN,NAN

sn64782,Saigon Furniture,Saigon,Harvey Norman,Port Melbourne,6420.39,9.82,45,Furniture,NAN,Timber,NAN

kl9741,International Pharma Co,Singapore,Chemist Warehouse,Port Melbourne,13412.9,21.45,349,Medicine,NAN,NAN,"Drugs, Medicines and Therapeutic Substances"

kl9745,International Pharma Co,Singapore,Priceline,Dandenong,6812.09,7.12,82,Medicine,NAN,NAN,"Drugs, Medicines and Therapeutic Substances"

**Note!** Where a value contains a comma the whole value must be encapsulated into a pair of double quotations. For example the last value is "Drugs, Medicines and Therapeutic Substances"

**Hints and Tips!**

1. Use the [string split function](https://docs.python.org/3/library/stdtypes.html#str.split) to seperate parts of each line
2. Assume that parentheses i.e. (), will only be used to denote shipments
3. Assume that there will be no whitespace between each shipment
4. Assume that semi-colons i.e. ;, will only be used to seperate each field in a shipment
5. Assume that dashes i.e. -, will to associate field names and field values.

第二题Too many guns

The NSW Greens published the [toomanyguns.org](http://www.toomanyguns.org/) website which lists information about firearm ownership in NSW.

Private firearms ownership data was obtained through a [Freedom of Information application to the NSW Police](http://davidshoebridge.org.au/wp-content/uploads/2017/10/TOOMANYGUNS-GIPA-Data-from-NSW-Police.pdf). It shows the overall number of guns and gun owners in NSW overall and by postcode as of March 2017, 2018 and 2019.

The information from the website is extracted and summarised in a CSV file (firearms\_2019.csv).

Write a Python script that prints the output from the describe method of the "Largest stockpile" variable.

**Usage Example**

$ python guns.py

count XXX.XXXXXX

mean XX.XXXXXX

std XX.XXXXXX

min X.XXXXXX

25% XX.XXXXXX

50% XX.XXXXXX

75% XX.XXXXXX

max XXX.XXXXXX

Name: Largest stockpile, dtype: float64

## 第三题Tesla crashes

[Tesla Deaths](https://www.tesladeaths.com/) is a record of Tesla accidents that involved a driver, occupant, cyclist, motorcyclist, or pedestrian death, whether or not the Tesla or its driver were at fault

The Tesla Deaths website makes their data publicly available as a spreadsheet.

Write a Python script that prints the average of the total number of individuals involved in the crashes.

**Usage Example**

$ python tesla.py

X.XXX average individuals in a crash

Report the average to 3 decimal places

**Hints!**

1. The last 10 lines of the excel file contain summary information. You will need to ignore this section of the file.
2. You can derive the total by summing the relevant series together