Getting Data in Python

Reading & Writing Delimited Files

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💡 Read/write Delimited Text/CSV Files

💡 csv.DictReader

💡 Read Excel Files

What is a Delimited Text/CSV File?

For Reading Directly a Delimited Text File:

```
FSC,SSC,CD14 FITC,CD33 PE,CD45 PerCP,Unused,CD34 - APC,Time
500.32730102,23.97476196,2.48005509,12.11952114,76.91445159,0.08981653,15.66742992,0.68804007
350.73910522,23.81124496,3.64244961,1.00029993,133.74858093,0.27155384,1.00362289,0.85104483
604.67559814,233.84678649,7.89220094,104.74340057,129.41178894,16.72563743,7.80934953,0.46642997
404.19461059,198.41729736,11.91999912,56.67926025,169.21188354,7.57181167,1.28422546,0.66259807
436.83917236,23.94353294,5.22218418,61.92754745,129.70245361,8.84675407,1369.01867675,0.37820205
511.32632446,134.78446960,19.62970352,31.06235122,83.55042266,2.76216840,6.23621845,0.89229768
234.57890319,14.62403297,1.94246792,1.00125622,519.26617431,0.87409734,6.30185270,0.33072727
571.65905761,125.00919342,10.14484119,49.64657592,145.86990356,5.11629390,14.54989719,0.96987426
139.30685424,100.70596313,2.75440049,4.02659416,6.44094133,0.47582840,6.36307287,0.74844944
239.69461059,17.00057601,1.06224739,1.44625675,490.00079345,0.92500466,2.36994695,0.49123454
```

comma separated
with header

```
98.894    100.000      92.769 Thu Jun 07 13:39:24 2012
98.888    100.000      92.769 Thu Jun 07 13:39:25 2012
98.894    100.000      92.750 Thu Jun 07 13:39:26 2012
98.900    100.000      92.769 Thu Jun 07 13:39:27 2012
98.894    100.000      92.769 Thu Jun 07 13:39:28 2012
98.912    100.000      92.769 Thu Jun 07 13:39:29 2012
98.912    100.000      92.769 Thu Jun 07 13:39:30 2012
98.794    100.000      92.938 Thu Jun 07 13:39:31 2012
98.888    100.000      92.744 Thu Jun 07 13:39:32 2012
98.888    100.000      92.750 Thu Jun 07 13:39:34 2012
98.912    100.000      92.744 Thu Jun 07 13:39:35 2012
98.900    100.000      92.725 Thu Jun 07 13:39:36 2012
98.912    100.000      92.744 Thu Jun 07 13:39:37 2012
```

tab separated
no header

Read Delimited Text/CSV Files

For Reading Directly a Delimited Text File:

import csv

tab_separated = csv.reader(f, delimiter='\t')
comma_separated = csv.reader(f, delimiter=' , ')

Read Delimited Text/CSV Files

For ignoring the file header:

next(reader_var)

next →

```
FSC,SSC,CD14 FITC,CD33 PE,CD45 PerCP,Unused,CD34 - APC,Time
500.32730102,23.97476196,2.48005509,12.11952114,76.91445159,0.08981653,15.66742992,0.68804007
350.73910522,23.81124496,3.64244961,1.00029993,133.74858093,0.27155384,1.00362289,0.85104483
604.67559814,233.84678649,7.89220094,104.74340057,129.41178894,16.72563743,7.80934953,0.46642997
404.19461059,198.41729736,11.91999912,56.67926025,169.21188354,7.57181167,1.28422546,0.66259807
436.83917236,23.94353294,5.22218418,61.92754745,129.70245361,8.84675407,1369.01867675,0.37820205
511.32632446,134.78446960,19.62970352,31.06235122,83.55042266,2.76216840,6.23621845,0.89229768
234.57890319,14.62403297,1.94246792,1.00125622,519.26617431,0.87409734,6.30185270,0.33072727
571.65905761,125.00919342,10.14484119,49.64657592,145.86990356,5.11629390,14.54989719,0.96987426
139.30685424,100.70596313,2.75440049,4.02659416,6.44094133,0.47582840,6.36307287,0.74844944
239.69461059,17.00057601,1.06224739,1.44625675,490.00079345,0.92500466,2.36994695,0.49123454
```

Write into Delimited Files

You can similarly write out delimited data using csv.writer:

import csv

csv_file = csv.writer(filename, delimiter=',')

csv_file.writerow([col1, col2, ...])

Csv.DictReader

We can read Delimited file to get each row as a dict (with the headers as keys) by using csv.DictReader

```
dict_reader = csv.DictReader(f, delimiter=':')
```

This way the file header will be ignored either

Read Excel Files

Mostly we use pandas library for reading EXCEL files.

pandas is recommended for working with CSV and Excel files.

import pandas as pd
pd.read_excel(filename.xlsx)

Warm Up Practice

P1: Write a Python script to read a delimited text file. With and without "csv.DictReader()"

P2: Write a Python script to write into a delimited text file.

P3: Write a Python script to read Excel file with "pandas"