Homework 1: Import, Read, & Explore UFO Sightings Data

This assignment is designed to give you practice writing code and applying lessons and topics for the current module.

This homework deals with the following topics:

- The csv module
- Importing data
- Reading data
- Querying data

The Assignment

In this assignment, you will analyze data about unidentified flying object (UFO) reports and get to use functions from the csv module for importing, reading, and exploring the data. For each question, there are clear instructions in each cell. Follow those instructions and write the code after each "# your code here".

We'll use nbgrader, a Jupyter Notebooks testing platform, to test whether each function implementation is correct. You can see the exact test we are running in the cell right below your solution.

About the Data

All of the data is contained within the "ufo-sightings.csv" file. The dataset contains over 80,000 reports of UFO sightings over the last century. There are 11 columns: datetime, city, state, country, shape, duration (seconds), duration (hours/min), comments, date posted, latitude, longitude

	datetime	city	state	country	shape	duration (seconds)	duration (hours/min)	comments	date posted	latitude	longitude
2	10/10/49 20:30	san marcos	tx	us	cylinder	2700	45 minutes	This event took place in early fall around 1949-50. It occurred after a Boy Scout	4/27/04	29.8830556	-97.9411111
3	10/10/49 21:00	lackland afb	tx		light	7200	1-2 hrs	1949 Lackland AFB&#44 TX. Lights racing across the sky & making 90 deg	12/16/05	29.38421	-98.581082
4	10/10/55 17:00	chester (uk/england)		gb	circle	20	20 seconds	Green/Orange circular disc over Chester&#44 England	1/21/08	53.2	-2.916667
5	10/10/56 21:00	edna	tx	us	circle	20	1/2 hour	My older brother and twin sister were leaving the only Edna theater at about 9	1/17/04	28.9783333	-96.6458333
6	10/10/60 20:00	kaneohe	hi	us	light	900	15 minutes	AS a Marine 1st Lt. flying an FJ4B fighter/attack aircraft on a solo night exercis	1/22/04	21.4180556	-157.8036111
7	10/10/61 19:00	bristol	tn	us	sphere	300	5 minutes	My father is now 89 my brother 52 the girl with us now 51 myself 49 and the o	4/27/07	36.595	-82.1888889
8	10/10/65 21:00	penarth (uk/wales)		gb	circle	180	about 3 mins	penarth uk circle 3mins stayed 30ft above me for 3 mins slowly moved of anc	2/14/06	51.434722	-3.18
9	10/10/65 23:45	norwalk	ct	us	disk	1200	20 minutes	A bright orange color changing to reddish color disk/saucer was observed hover	10/2/99	41.1175	-73.4083333
10	10/10/66 20:00	pell city	al	us	disk	180	3 minutes	Strobe Lighted disk shape object observed close&#44 at low speeds&#44 and lc	3/19/09	33.5861111	-86.2861111
11	10/10/66 21:00	live oak	fl	us	disk	120	several minutes	Saucer zaps energy from powerline as my pregnant mother receives mental sig	5/11/05	30.2947222	-82.9841667

Submission

Open the Jupyter Notebook directly in Coursera (which you will find in the item soon after this reading). The Coursera lab includes the ufo-sightings.csv file. To complete the assignment, complete the provided Jupyter Notebook file, following the detailed instructions in each cell. Test your submission before submitting by following the instructions on the assignment page in Coursera. When you're happy with your solutions, click the 'Submit Assignment' button in the top right.

Evaluation

Each question is worth 1 point except for Q8 - 3 points:

- 1 pt - storing the ufo shapes in "sightings_shapes"
- 1 pt - storing the count of each shape in "count"
- 1 pt - storing the top 3 shapes in "top3shapes"