Quiz 2: Organizing Your Data

LATEST SUBMISSION GRADE

100%

1. To complete this quiz you need to import two files: **1 / 1 point**

   - The flights data for January 2015, "flightsJAN.csv" using the importFlightsData function
   - The "airports.csv" containing the airport data

   To import these files, use the code below. The option "TextType" in the READTABLE function forces textual data in the file to be read in as the string data type. The AIRPORT variable is then converted to a categorical variable, which is necessary for join operations used later.

```
flights = importFlightsData("flightsJan.csv");
airports = readtable("airports.csv", "TextType", "string");
airports.AIRPORT = categorical(airports.AIRPORT);
```

   The table of airports has the variable "DISPLAY_AIRPORT_CITY_NAME_FULL". This is a list of strings containing the name of the city and the state/territory for each airport. For instance, LAX is in "Los Angeles, CA", and Ponce Airport is in "Ponce, Puerto Rico". Use this variable to generate an array of just the state/territory for each airport. For example: PA, TX, NM, SD...

   How many unique states/territories are there in the list of airports?

   55

   ✓ **Correct**

   Correct: There are the 50 states, plus the District of Columbia (DC) and the 4 territories of Puerto Rico, Guam, American Samoa, and the Virgin Islands.

2. Add the array of states/territories for each airport to your existing table of airports as a new variable. **1 / 1 point**

   Then sort the updated airport table using two criteria (in ascending order):

   1. by the new state/territory variable
   2. by the 3-letter code in the "AIRPORT" variable (for states with multiple airports).

   What are the first 3 airports in your new sorted table?

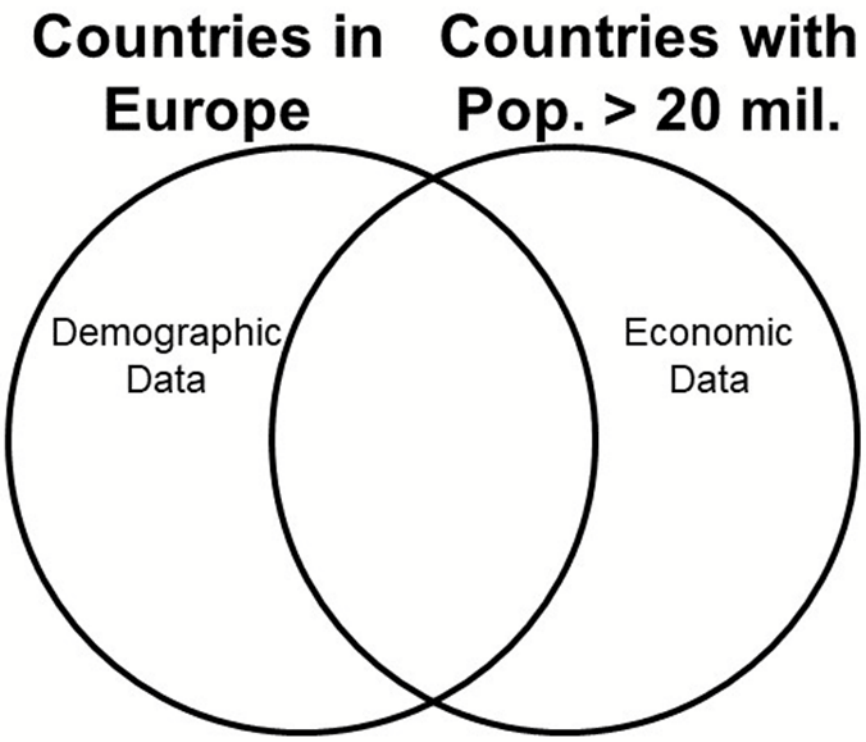
   - ○ ABR, ABI, ADK
   - ○ ABE, ABI, ABQ
   - ○ ADK, ADQ, ANC
   - ◉ ADK, ADQ, AKN
   - ○ AAD, AAP, ABA

   ✓ **Correct**

   Correct. These all happen to be in Alaska

3. Imagine you have two tables of data that you would like to combine using one of the joining operations in the Joining Tables Live Task. 1 / 1 point

On the left is a table containing demographic data for all countries in Europe, and on the right is a table containing economic data for all countries in the world with populations greater than 20 million.



Which Joining method would result in a table that contains both demographic and economic data for only European countries with populations greater than 20 million?

Hint: use the visuals in the Live Task and shown in the Joining Tables video to help you identify the correct joining method.

- ○ Join
- ○ Outer Join
- ○ Left Outer Join
- ○ Right Outer Join
- ◉ Inner Join

✓ **Correct**
Correct.

4. Use the JOIN function to merge the flights and airports tables using ORIGIN and AIRPORT as key variables respectively. What three states/territories have the least number of flights in January? 1 / 1 point

- ○ AK, AL, AR
- ○ American Samoa, Guam, Puerto Rico
- ○ TX, CA, FL
- ◉ American Samoa, DE, Guam
- ○ DE, WV, SD

✓ **Correct**
Correct. American Samoa only had a flight about once every three days.

5. The times reported in the flights table are the local times for the origin and destination airports. This means you can tell if a flight changes time zones by comparing the variable "SCHEDULED_ELAPSED_TIME" with the difference between the variables "SCHEDULED_ARRIVAL_TIME" and "SCHEDULED_DEPARTURE_TIME". If a flight traveled from one time zone to another, then the difference between the arrival and departure times IS different than the elapsed time. **1 / 1 point**

What percentage (from 0 to 100) of the flights from the January data change time zones?

Hint: The SCHEDULED_ELAPSED_TIME is a numeric variable. After subtracting two datetimes you will have a duration variable. One of them will need to be converted before comparing if the contents are equal.

48.41

✓ **Correct**

Correct, 48.4% of flights crossed a timezone in January.

6. Imagine that 3 new airports are going to open this year. You have the relevant information for these new airports stored in their own table seen below. **1 / 1 point**

`imaginaryAirports = 3×5 table`

	AIRPORT	DISPLAY_AIRPORT_NAME	DISPLAY_AIRPORT_CITY_NAME_FULL	LATITUDE	LONGITUDE
1	'FCP'	'Four Corners Internation…	'Teec Nos Pos, AZ'	36.9991	-109.0452
2	'DHI'	'Dharma Initiative Jetport'	'Lost Island, XX'	48.1516	-162.3424
3	'HBY'	'Hudson Bay Floating Air…	'Hudson Bay, CN'	59.7121	-85.2539

What is the correct method to combine this new table with your original table of airports?

- ○ Right Outer Join
- ◉ Vertical Concatenation
- ○ Horizontal Concatenation
- ○ Inner Join
- ○ Left Outer Join

✓ **Correct**

7. Assume you have imported the following table containing the time of all the total solar eclipses in the USA since 1970. **1 / 1 point**

`totalEclipses = 6×4 table`

	Year	Month	Day	Time
1	1970	3	7	"17:38:30"
2	1972	7	10	"19:46:38"
3	1979	2	26	"16:55:06"
4	1990	7	22	"03:03:07"
5	1991	7	11	"19:07:01"
6	2017	8	21	"18:26:40"

Which code would correctly convert this data into a list of datetimes? Select all that apply.

```
datetimeEclipses = datetime(totalEclipses.Year, totalEclipses.Month, totalEclipses.Day);
datetimeEclipses = datetimeEclipses + duration(totalEclipses.Time)

```

Correct

```
datetimeEclipses = datetime(totalEclipses.Day, totalEclipses.Month, totalEclipses.Year);
datetimeEclipses = datetimeEclipses + duration(totalEclipses.Time)

```

```
datetimeString = string(totalEclipses.Year) + "-" + string(totalEclipses.Month) + "-" + s
datetimeEclipses = datetime(datetimeString,"InputFormat","yyyy-MM-dd HH:mm:ss")

```

Correct

```
datetimeString = string(totalEclipses.Year) + "-" + string(totalEclipses.Month) + "-" + s
datetimeEclipses = datetime(datetimeString,"InputFormat","dd-MM-yyyy HH:mm:ss")

```