

## Common Confusion 8

### 'load' vs. 'csvread' vs. 'readmatrix'

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The 'load', 'csvread', and 'readmatrix' functions are all used to load data into MATLAB, but they must be used in the proper context. They will not work unless you use them with the correct data input type.

The 'load' function is the one we will most commonly use in this class. This function is used to load variables from a file into the MATLAB workspace. Typically, the file type used with the 'load' function is '.mat', but there are others we do not use in this class. The 'load' function is used by specifying the file that will be loaded into the workspace. For example, if you had a file called 'waterDepth.mat' containing the data you wanted to use, you could load this data into the workspace by writing:

```
'load('waterDepth.mat')
```

When using the 'load' function, you can also specify which variables from the file you want to load in if you do not want to load all of them in. We do not typically do this in this class, but it can be useful in some instances. If you had the same file 'waterDepth.mat', and wanted to only load in the variable, 'caddoLakeDepth', then you would write:

```
'load('waterDepth.mat', '-mat', 'caddoLakeDepth')
```

The '-mat' is part of the syntax to tell MATLAB you are only loading in certain variables. You can load in multiple variables without loading in all the variables.

The 'csvread' function is used to read in comma-separated value files. Typically, the file type used with the 'csvread' function is '.csv', but there are others we do not use in this class. The 'csvread' function is used by specifying the file that will be loaded into the workspace. For example, if you had a file called 'waterDepth.csv' containing the data you wanted to use, you could load this data into the workspace by writing:

```
'csvread('waterDepth.mat')
```

You can also read in data from only certain rows and columns using the 'csvread' function, but we do not do this in this class. More information about this can be found in the MATLAB Help Center.

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As of the R2019A Version of MATLAB, it is recommended you do *not* use the 'csvread' function. Instead, the recommended function for reading in comma-seperated value files is 'readmatrix'. Despite this, it is likely that 'csvread' will work for our purposes in this course for the foreseeable future.

The 'readmatrix' function works exactly the same as the 'csvread' function, but is slightly more versatile and contains small tweaks that are not super important for this course. If you need help understanding how to use the 'readmatrix' function, read the above section about the 'csvread' function or check out the MATLAB Help Center.

For this course, use the 'load' function when you need to load in variables to your workspace that have a file extension type of '.mat'. If you need to load in a comma-seperated value file, typically containing a '.csv' extension type, then you can use either the 'csvread' or 'readmatrix' function. Ideally, you would use the 'readmatrix' function since MathWorks does recommend it, but you will likely be fine if you decide to use the 'csvread' function.