

Installing R and RStudio

R is free and runs on a variety of different platform including windows, Unix, and MacOS. This is great for incorporating statistical routines not yet available in other programs like excel. R also has state-of-the-art graphic capabilities.

Here are some video tutorials to reference about installing R and RStudio

- Mac - <https://www.youtube.com/watch?v=orjLGFmx6l4>
- Windows - <https://www.youtube.com/watch?v=9-RrkJQQYqY>

Downloading R

1. Click on the link or type it into your search bar <https://www.r-project.org/>.
2. Click download R.
3. Scroll down to any of the USA options and select the location closest to your current location.
4. Select the link "Download R" for your current operating system. The next steps will be dependent on which operating system you are currently using.

Windows –

1. Click on 'base'.
2. Click on Download R 4.01 for Windows or the latest version.
3. Open the file by clicking on the folder in the bottom left corner of your browser.
4. Click Yes.
5. Follow the prompts through the installer.
6. All Set with R, now we need to download R-Studio.

Mac –

1. Click on R for Mac
2. To the left of latest release, click on the latest release hyperlink. In this case it is R-4.0.1.pkg
3. Open the file by clicking on the folder in the bottom left corner of your browser.
4. Click Yes.
5. Follow the prompts through the installer.
6. All Set with R, now we need to download R-Studio.

Downloading R-Studio

1. Visit the R-Studio website <https://rstudio.com/>.
2. Click on download.
3. Click on the free version of RStudio
4. Select the download link for RStudio that matches your operating system.

5. Open the file by clicking on the folder in the bottom left corner of your browser.
6. Click Yes.
7. Follow the prompts through the installer.
8. All Set with RStudio.

Setting the current working directory can be a very important first step in working with data sets in R. You have to tell the computer where to look. In the bottom right corner of R Studio, you can tell RStudio where to look for all those data.

1. Create a new folder by clicking “New folder” at the top left of the bottom right box of RStudio
2. Name the folder and press enter.
3. Click on the folder that you created
4. Click on “More” next to “Rename”
5. Click “Set as working directory”

This will now be the place that RStudio looks for information when working with CSV files etc. You can change the working directory to anywhere on your computer where your data are stored, just navigate to that folder and follow the steps to change the current working directory.

In the console type the following –

```
> data(mtcars)
> head(mtcars, n=10)
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258.0	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360.0	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225.0	105	2.76	3.460	20.22	1	0	3	1
Duster 360	14.3	8	360.0	245	3.21	3.570	15.84	0	0	3	4
Merc 240D	24.4	4	146.7	62	3.69	3.190	20.00	1	0	4	2
Merc 230	22.8	4	140.8	95	3.92	3.150	22.90	1	0	4	2
Merc 280	19.2	6	167.6	123	3.92	3.440	18.30	1	0	4	4

We just looked at the first 10 columns of the dataset mtcars by calling head(dataset, n=10). Change n= to look at more of the dataset. Lets change n=15, or 20. Try it on your own!

We can also look at the last 10 columns by using tail(mtcars, n=10). We can change n here as well to inspect any number of columns.

```
> tail(mtcars, n=15)
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Fiat 128	32.4	4	78.7	66	4.08	2.200	19.47	1	1	4	1

Honda Civic	30.4	4	75.7	52	4.93	1.615	18.52	1	1	4	2
Toyota Corolla	33.9	4	71.1	65	4.22	1.835	19.90	1	1	4	1
Toyota Corona	21.5	4	120.1	97	3.70	2.465	20.01	1	0	3	1
Dodge Challenger	15.5	8	318.0	150	2.76	3.520	16.87	0	0	3	2
AMC Javelin	15.2	8	304.0	150	3.15	3.435	17.30	0	0	3	2
Camaro Z28	13.3	8	350.0	245	3.73	3.840	15.41	0	0	3	4
Pontiac Firebird	19.2	8	400.0	175	3.08	3.845	17.05	0	0	3	2
Fiat X1-9	27.3	4	79.0	66	4.08	1.935	18.90	1	1	4	1
Porsche 914-2	26.0	4	120.3	91	4.43	2.140	16.70	0	1	5	2
Lotus Europa	30.4	4	95.1	113	3.77	1.513	16.90	1	1	5	2
Ford Pantera L	15.8	8	351.0	264	4.22	3.170	14.50	0	1	5	4
Ferrari Dino	19.7	6	145.0	175	3.62	2.770	15.50	0	1	5	6
Maserati Bora	15.0	8	301.0	335	3.54	3.570	14.60	0	1	5	8
Volvo 142E	21.4	4	121.0	109	4.11	2.780	18.60	1	1	4	2