

Instructions for Creating an Analysis Environment with Anaconda

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Development Directory

Here, we are going to define the root directory of our analysis environment.

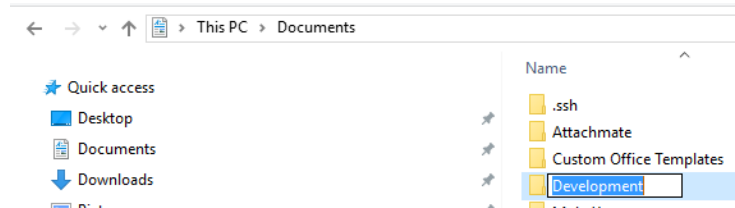


Figure 1: The Root Directory of our Analysis Environment is set to Development

Installation of Miniconda

This section describes steps for installing the Anaconda package manager (Miniconda) for 64-bit Windows 10 laptops and Desktops.

Download Miniconda for 64-bit Windows

Open the Executable

Miniconda

	 Windows	 Mac OS X	 Linux
Python 3.7	64-bit (exe installer) 32-bit (exe installer)	64-bit (bash installer) 64-bit (.pkg installer)	64-bit (bash installer) 32-bit (bash installer)
Python 2.7	64-bit (exe installer) 32-bit (exe installer)	64-bit (bash installer) 64-bit (.pkg installer)	64-bit (bash installer) 32-bit (bash installer)

Figure 2: Click on the python3.7 64-bit Windows (exe-installer).

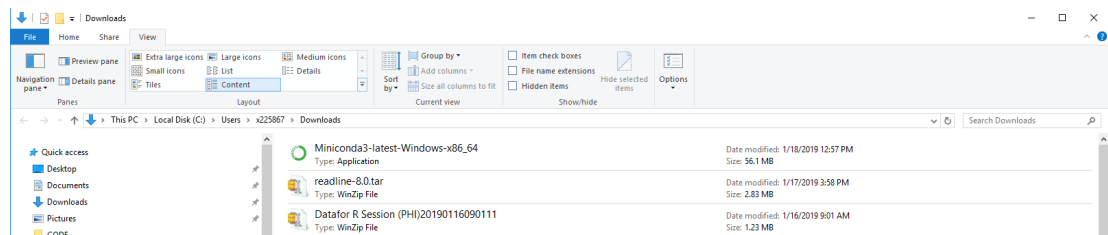


Figure 3: Double click on the file downloaded

Installation Process



Figure 4: Baby Steps

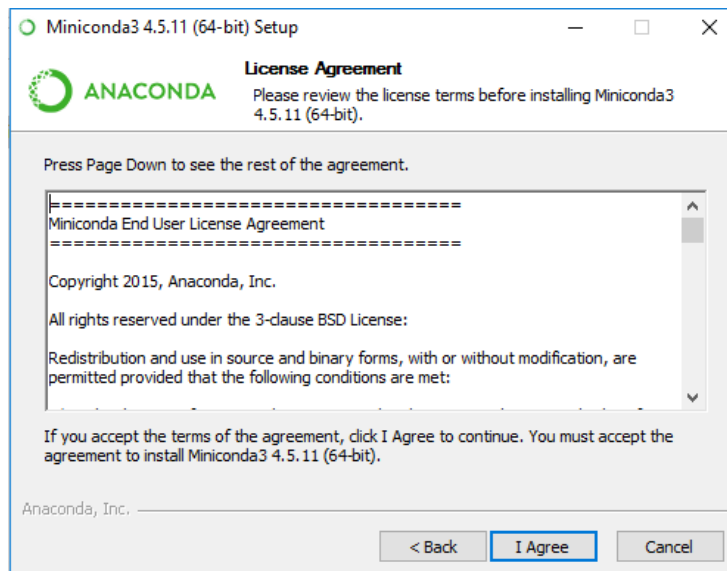


Figure 5: BSD licenses are a family of permissive free software licenses, imposing minimal restrictions on the use and redistribution of covered software.

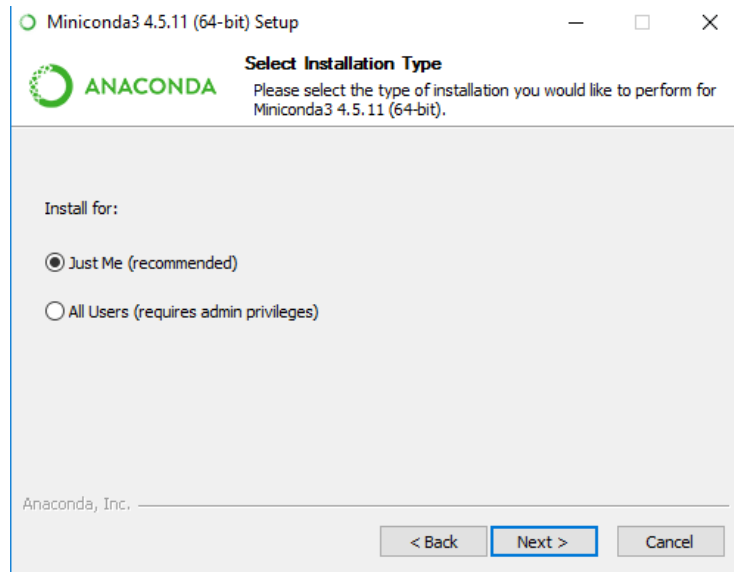


Figure 6: Select the first option (Just Me)

Select Installation Directory

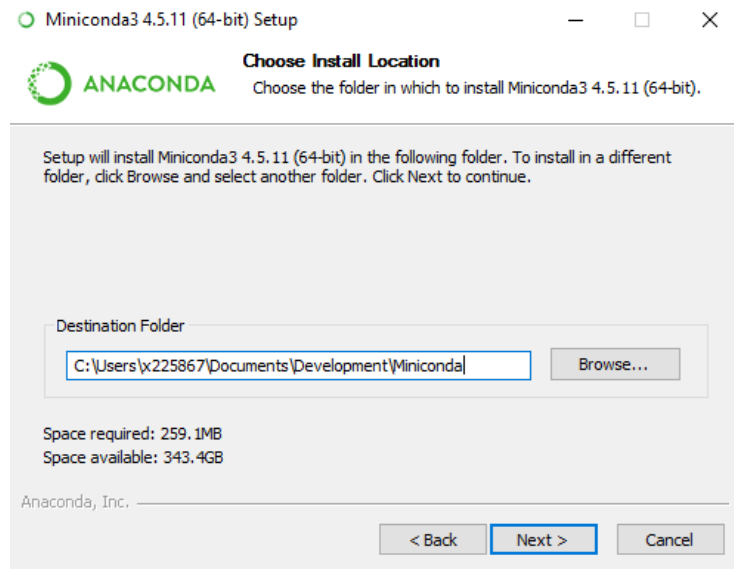


Figure 7: You must install to a new folder in the Development directory

Advanced Options

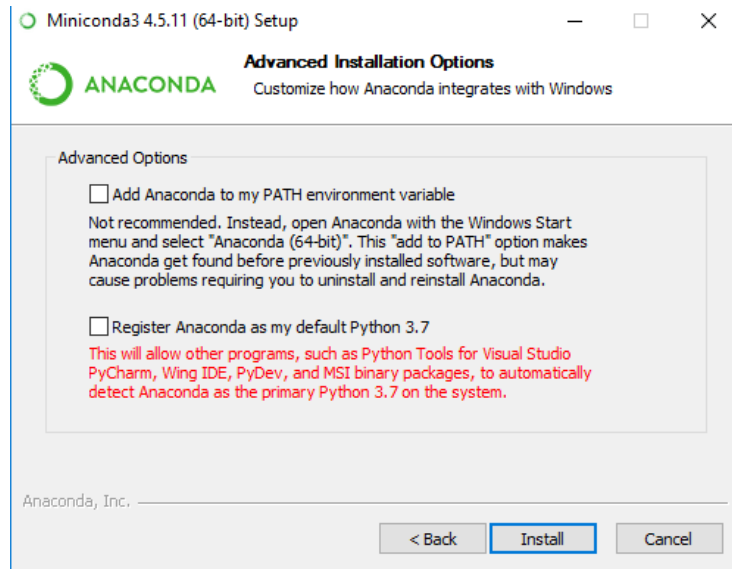


Figure 8: isolate_install

N.B. Unselect "Register Anaconda in my default Python 3.7". You will not be able to select this unless you have administrative privileges.

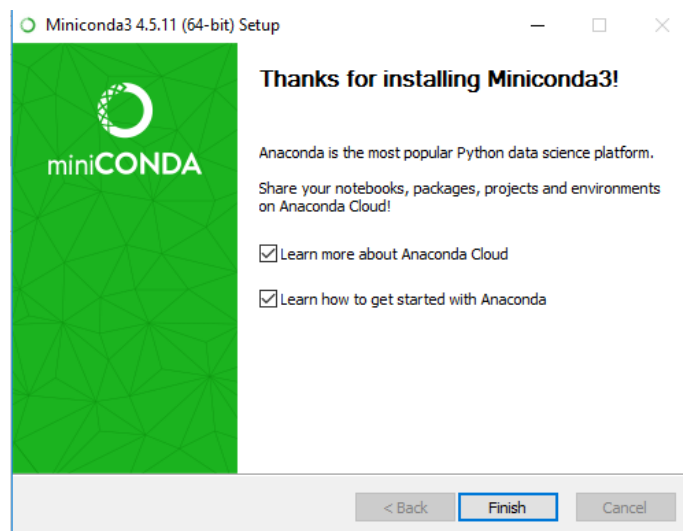


Figure 9: Finish

Installation of Jupyter

This section involves installation and configuration of jupyter.

Anaconda Prompt

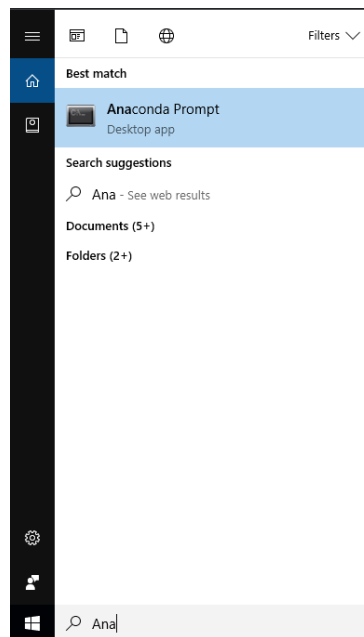


Figure 10: Press Windows hotkey and open Anaconda

Submit the following command at the prompt

```
conda install jupyter
```

Create a Jupyter Notebook Configuration File

```
(base) C:\Users\x225867>jupyter notebook --generate-config
Overwrite C:\Users\x225867\.jupyter\jupyter_notebook_config.py with default config? [y/N]y
Writing default config to: C:\Users\x225867\.jupyter\jupyter_notebook_config.py
```

Figure 11: “jupyter notebook –generate-config” generates a configuration file

Find .jupyter in File Explorer

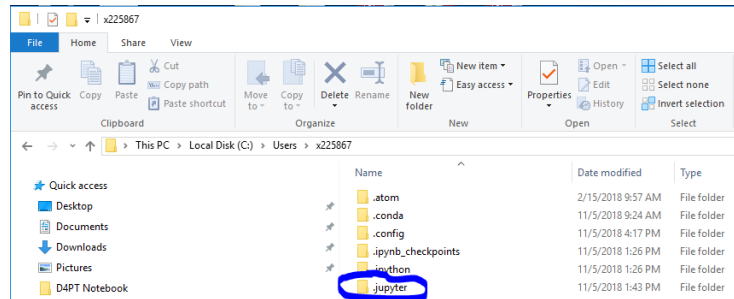


Figure 12: Open .jupyter folder (eg C:/Users/x225867/.jupyter)

NB Because the folder “.jupyter” has a dot preceding its name, it is a “hidden file”. To view hidden files modify your view settings in file explorer.

Edit Configuration File

The goal is to modify the directory where the notebook opens.

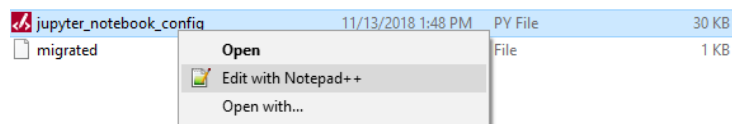


Figure 13: Edit jupyter_notebook_config with notepad++

Set notebook_dir to Development directory (line 262 in my file)
`c.NotebookApp.notebook_dir='C:/Users/x225867/Documents/Development/'`

In order for jupyter to see the new directory, We need to remove the “#” symbol before `c.NotebookApp.notebook_dir`.


```

## Gets or sets the maximum amount of memory, in bytes, that is allocated for
# use by the buffer manager.
#c.NotebookApp.max_buffer_size = 536870912

## Dict of Python modules to load as notebook server extensions. Entry values can
# be used to enable and disable the loading of the extensions. The extensions
# will be loaded in alphabetical order.
#c.NotebookApp.nbserver_extensions = {}

## The directory to use for notebooks and kernels.
#c.NotebookApp.notebook_dir = ''
#c.NotebookApp.notebook_dir = 'C:/Users/<nuid>/Documents/Development/'

## Whether to open in a browser after starting. The specific browser used is
# platform dependent and determined by the python standard library 'webbrowser'
# module, unless it is overridden using the --browser (NotebookApp.browser)
# configuration option.
#c.NotebookApp.open_browser = True

```

Figure 14: Configure Jupyter to open in your analysis environment.

Master Markdown

R, Rstudio and IRkernel

This section brings our environment together; Rstudio is a useful IDE for working with R, and Jupyter allows us to communicate reproducible results in Python or R.

Start Anaconda Prompt

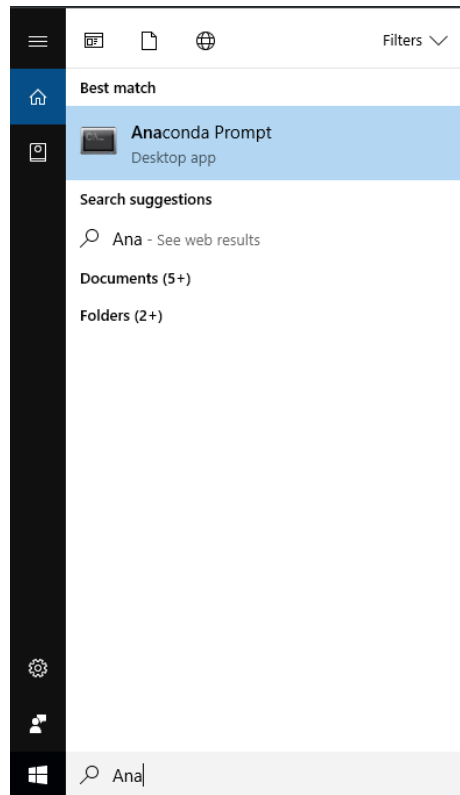


Figure 15: Start Anaconda Prompt

Install Base R

```
(base) C:\Users\x225867>conda install r-base
Solving environment: done

## Package Plan ##

  environment location: C:\Users\x225867\Documents\Development\Miniconda

added / updated specs:
- r-base

The following packages will be downloaded:
```

package	build	
m2w64-libtiff-4.0.6	2	1.2 MB
m2w64-xz-5.2.2	2	395 KB
m2w64-speexdsp-1.2rc3	3	514 KB
_r-mutex-1.0.0	anacondar_1	3 KB
m2w64-bwidget-1.9.10	2	153 KB
m2w64-openblas-0.2.19	1	14.0 MB
m2w64-speex-1.2rc2	3	593 KB
m2w64-libogg-1.3.2	3	205 KB
m2w64-mpfr-3.1.4	4	293 KB
m2w64-libxml2-2.9.3	4	2.1 MB
m2w64-fftw-3.3.4	6	5.4 MB
m2w64-gettext-0.19.7	2	4.2 MB
m2w64-libpng-1.6.21	2	399 KB
m2w64-libiconv-1.14	6	1.5 MB
m2w64-bzip2-1.0.6	6	100 KB
m2w64-flac-1.3.1	3	872 KB
m2w64-tktable-2.10	5	112 KB
r-base-3.5.1	hac0af64_1	56.4 MB
m2w64-pcre-8.38	2	1.2 MB
m2w64-zlib-1.2.8	10	197 KB
m2w64-expat-2.1.1	2	160 KB
m2w64-wineditline-2.101	5	46 KB
m2w64-libvorbis-1.3.5	2	480 KB
m2w64-lbsndfile-1.0.26	2	549 KB
m2w64-tcl-8.6.5	3	3.9 MB
m2w64-libjpeg-turbo-1.4.2	3	656 KB
m2w64-gsl-2.1	2	2.4 MB
m2w64-tk-8.6.5	3	2.2 MB
Total:		100.1 MB

```

The following NEW packages will be INSTALLED:

_r-mutex:            1.0.0-anacondar_1
m2w64-bwidget:       1.9.10-2
m2w64-bzip2:          1.0.6-6
m2w64-expat:          2.1.1-2
m2w64-fftw:           3.3.4-6
m2w64-flac:           1.3.1-3
m2w64-gettext:        0.19.7-2
m2w64-gsl:            2.1-2
m2w64-libiconv:       1.14-6
m2w64-libjpeg-turbo:  1.4.2-3
m2w64-libogg:         1.3.2-3
m2w64-libpng:         1.6.21-2
m2w64-lbsndfile:      1.0.26-2
m2w64-libtiff:        4.0.6-2
m2w64-libvorbis:      1.3.5-2
m2w64-libxml2:        2.9.3-4
m2w64-mpfr:           3.1.4-4
m2w64-openblas:       0.2.19-1
m2w64-pcre:           8.38-2
m2w64-speex:          1.2rc2-3
m2w64-speexdsp:       1.2rc3-3
m2w64-tcl:            8.6.5-3
m2w64-tk:             8.6.5-3
m2w64-tktable:        2.10-5
m2w64-wineditline:    2.101-5
m2w64-xz:             5.2.2-2
m2w64-zlib:           1.2.8-10
r-base:               3.5.1-hac0af64_1

Proceed ([y]/n)? y

```

Figure 16: conda install r-base

Install RStudio

A ton of packages get installed, so expect a wait.

```
(base) C:\Users\x225867>conda install -c r rstudio
Solving environment: done

## Package Plan ##

environment location: C:\Users\x225867\Documents\Development\Miniconda

added / updated specs:
- rstudio

The following packages will be downloaded:
```

package	build	size	platform
r-rcpp-0.12.18	r351hf348343_0	3.4 MB	r
r-htmltools-0.3.6	r351hf348343_0	193 KB	r
m2w64-libtre-git-122.c2f5d13	5	89 KB	
r-withr-2.1.2	r351hf348343_0	173 KB	r
r-config-0.3	r351h6f4ce42_0	30 KB	r
r-shiny-1.1.0	r351h6f4ce42_0	3.4 MB	r
r-pkgconfig-2.0.1	r351hf348343_0	25 KB	r
r-rappdirs-0.3.1	r351h6f4ce42_0	102 KB	r
r-prettyunits-1.0.2	r351h6f4ce42_0	37 KB	r
font-ttf-inconsolata-2.001	hcb22688_0	95 KB	
m2-helmol-libs-1.5.3	10	758 KB	
r-readxl-1.1.0	r351h6f4ce42_0	849 KB	r
m2-libdb-5.3.28	3	1.3 MB	
r-httr-1.3.1	r351hf348343_0	465 KB	r
r-fansi-0.2.3	r351hf348343_0	149 KB	r
r-readr-1.1.1	r351hf348343_0	651 KB	r
r-rcurl-1.95.4.11	r351h6f4ce42_0	902 KB	r
m2w64-libmetalink-0.1.3	2	65 KB	
r-backports-1.1.2	r351hf348343_0	56 KB	r
m2w64-curl-7.48.0	2	1.1 MB	
r-crayon-1.3.4	r351hf348343_0	756 KB	r
r-later-0.7.3	r351h6f4ce42_0	92 KB	r
r-blindr-0.1.1	r351hf348343_0	22 KB	r
m2-ncurses-6.0.20160220	2	1.4 MB	
m2-bash-4.3.042	5	3.5 MB	
m2-msys2-runtime-2.5.0.17080.65c939c	3	3.0 MB	
m2w64-nghttp2-1.9.2	2	192 KB	
r-mime-0.5	r351hf348343_0	46 KB	r
r-assertthat-0.2.0	r351hf348343_0	61 KB	r
r-tibble-1.4.2	r351hf348343_0	241 KB	r
r-sparklyr-0.8.4	r351h6f4ce42_0	2.6 MB	r
r-stringi-1.2.4	r351hf348343_0	11.3 MB	r
r-curl-3.2	r351hf348343_0	1.7 MB	r
m2w64-libsystre-1.0.1	3	13 KB	
r-utf8-1.1.4	r351hf348343_0	163 KB	r
r-tidyselct-0.2.4	r351hf348343_0	132 KB	r
r-dplyr-0.7.6	r351hf348343_0	1.8 MB	r
r-rprojroot-1.3.2	r351hf348343_0	86 KB	r
r-rsconnect-0.8.0	r351h6f4ce42_0	517 KB	r
r-cellranger-1.1.0	r351h6f4ce42_0	114 KB	r
freetype-2.9.1	ha9979f8_1	470 KB	
r-dplyr-1.2.2	r351h6f4ce42_0	550 KB	r
font-ttf-dejavu-sans-mono-2.37	h6964260_0	386 KB	
r-openssl-1.0.2	r351hf348343_0	2.3 MB	r
r-rematch-1.0.1	r351h6f4ce42_0	19 KB	r
r-tinytex-0.6	r351hf348343_0	87 KB	r
m2-zlib-1.2.8	4	51 KB	
m2w64-libtasn1-4.7	2	219 KB	
r-jsonlite-1.5	r351hf348343_0	1.1 MB	r
r-httpuv-1.4.5	r351h6f4ce42_0	449 KB	r
r-bit64-0.9.7	r351h6f4ce42_0	514 KB	r
r-plyr-1.8.4	r351hf348343_0	846 KB	r
r-rlang-0.2.1	r351hf348343_0	835 KB	r
font-ttf-ubuntu-0.83	h8b1ccd4_0	1.8 MB	
m2-gcc-libs-5.3.0	4	1021 KB	
r-profvis-0.3.5	r351h6f4ce42_0	173 KB	r
r-bitops-1.0.6	r351h6f4ce42_4	35 KB	r
r-bh-1.66.0.1	r351hf348343_0	10.2 MB	r
r-codbc-1.1.5	r351_0	438 KB	r
r-purrr-0.2.5	r351hf348343_0	303 KB	r
m2-libedit-3.1	20150326	100 KB	
r-clipr-1.0.0	r351hf348343_0	330 KB	r
r-blob-1.1.1	r351h6f4ce42_0	29 KB	r
r-base64enc-0.1.3	r351hf348343_4	39 KB	r
m2-libsdlite-3.10.0.0	2	462 KB	
r-rml2-1.2.0	r351hf348343_0	1.6 MB	r
r-lazyeval-0.2.1	r351hf348343_0	162 KB	r
r-forcats-0.3.0	r351h6f4ce42_0	221 KB	r
r-reshape2-1.4.3	r351hf348343_0	137 KB	r
m2w64-gnutls-3.4.11	2	2.3 MB	
r-pillar-1.3.0	r351hf348343_0	165 KB	r

Figure 17: conda install -c r rstudio

Install IRkernel

```
(base) C:\Users\x225867>conda install -c r r-irkernel
Solving environment: done

## Package Plan ##

  environment location: C:\Users\x225867\Documents\Development\Miniconda

added / updated specs:
- r-irkernel

The following packages will be downloaded:
```

package	build	
m2w64-libsodium-1.0.10	2	360 KB
r-pbdzmq-0.3_3	r351h6f4ce42_0	565 KB r
r-repr-0.15.0	r351h6f4ce42_0	111 KB r
r-irdisplay-0.5.0	r351h6f4ce42_0	37 KB r
r-uuid-0.1_2	r351h6f4ce42_4	25 KB r
r-irkernel-0.8.12	r351_0	196 KB r
m2w64-zeromq-4.1.4	2	1.8 MB
Total:		3.0 MB

```
The following NEW packages will be INSTALLED:

m2w64-libsodium: 1.0.10-2
m2w64-zeromq: 4.1.4-2
r-irdisplay: 0.5.0-r351h6f4ce42_0 r
r-irkernel: 0.8.12-r351_0 r
r-pbdzmq: 0.3_3-r351h6f4ce42_0 r
r-repr: 0.15.0-r351h6f4ce42_0 r
r-uuid: 0.1_2-r351h6f4ce42_4 r

Proceed ([y]/n)? y
```

Figure 18: conda install -c r r-irkernel