How to Download and Install R, RStudio, Anaconda on Mac/Windows

▷ ×

R is a programming language. To use R, we need to install an **Integrated Development Environment** (IDE). **Rstudio** is the Best IDE available as it is user-friendly, open-source and is part of the Anaconda platform.

(/images/r_programming/032818_0958_HowtoDownlo1.png)

In this tutorial, we will learn

- Install Anaconda
  - Mac User
  - Widows User
- Install R
  - Mac User
  - Windows User
- Install Rstudio
  - Mac User
  - Windows User

- Run Rstudio
- Test
- Install package
- Open a library
- Run R code

Install Anaconda

What is Anaconda?

Anaconda free open source is distributing both Python and R programming language. Anaconda is widely used in the scientific community and data scientist to carry out Machine Learning project or data analysis.

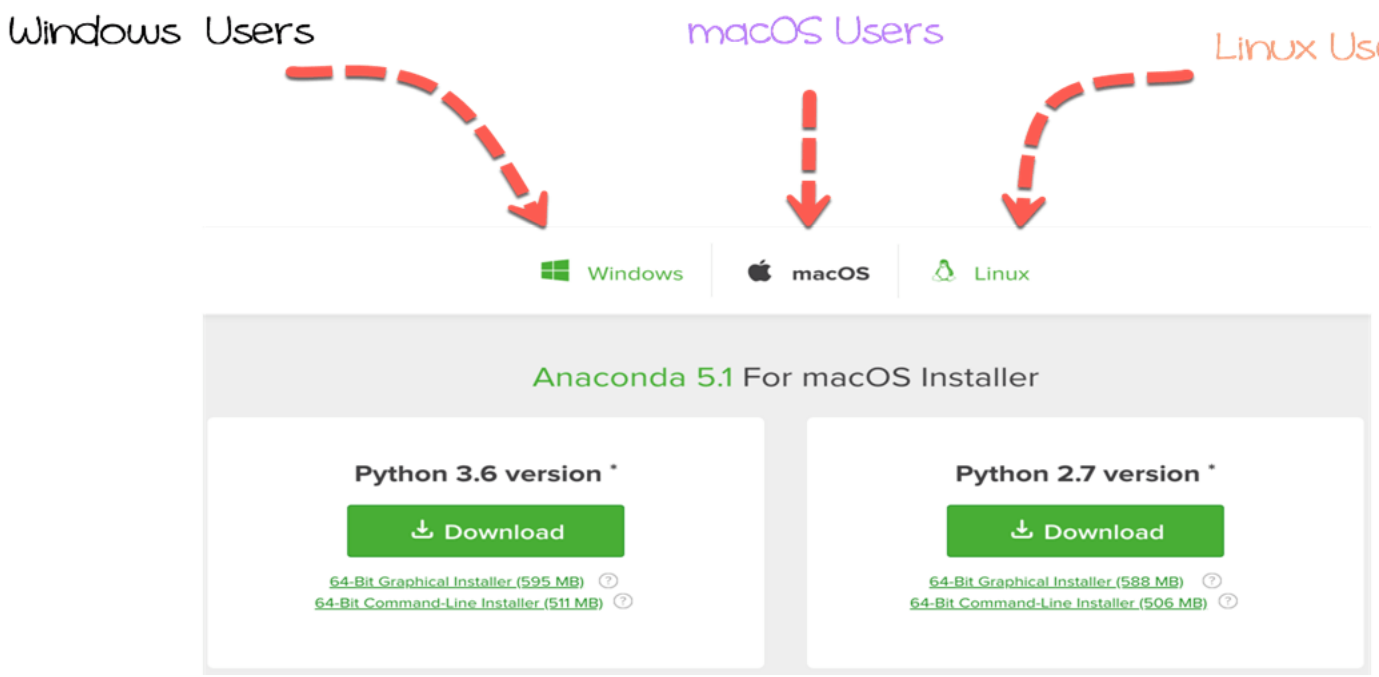
Why use Anaconda?

Anaconda will help you to manage all the libraries required for Python, or R. Anaconda will install all the required libraries and IDE into one single folder to simplify package management. Otherwise, you would need to install them separately.

Mac User

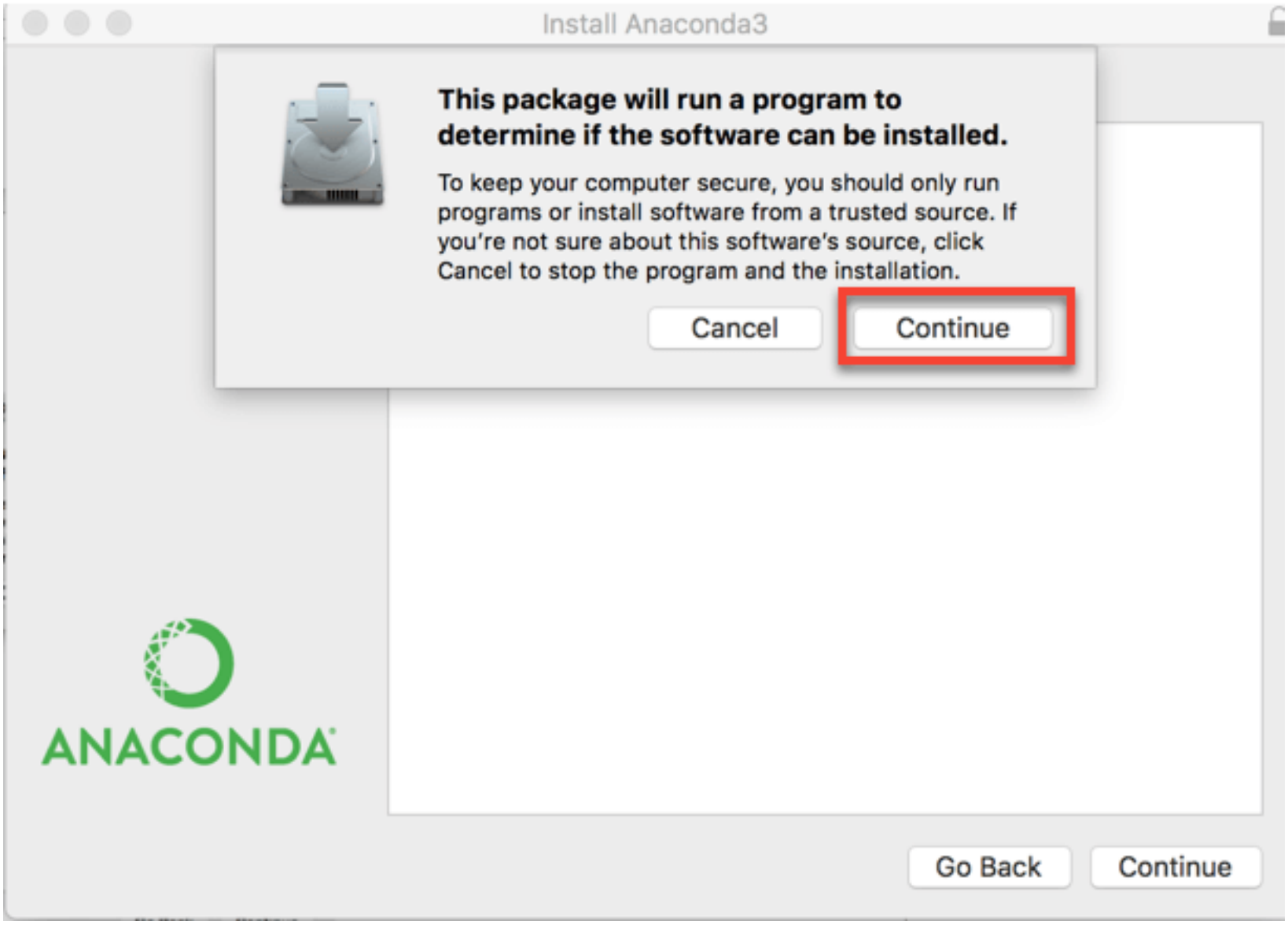
Step 1) Go to https://www.anaconda.com/download/ (https://www.anaconda.com/download/) and Download Anaconda for Python 3.6 for your OS.

By default, Chrome selects the downloading page of your system. In this tutorial, installation is done for Mac. If you run on Windows or Linux, download Anaconda 5.1 for Windows installer or Anaconda 5.1 for Linux installer.



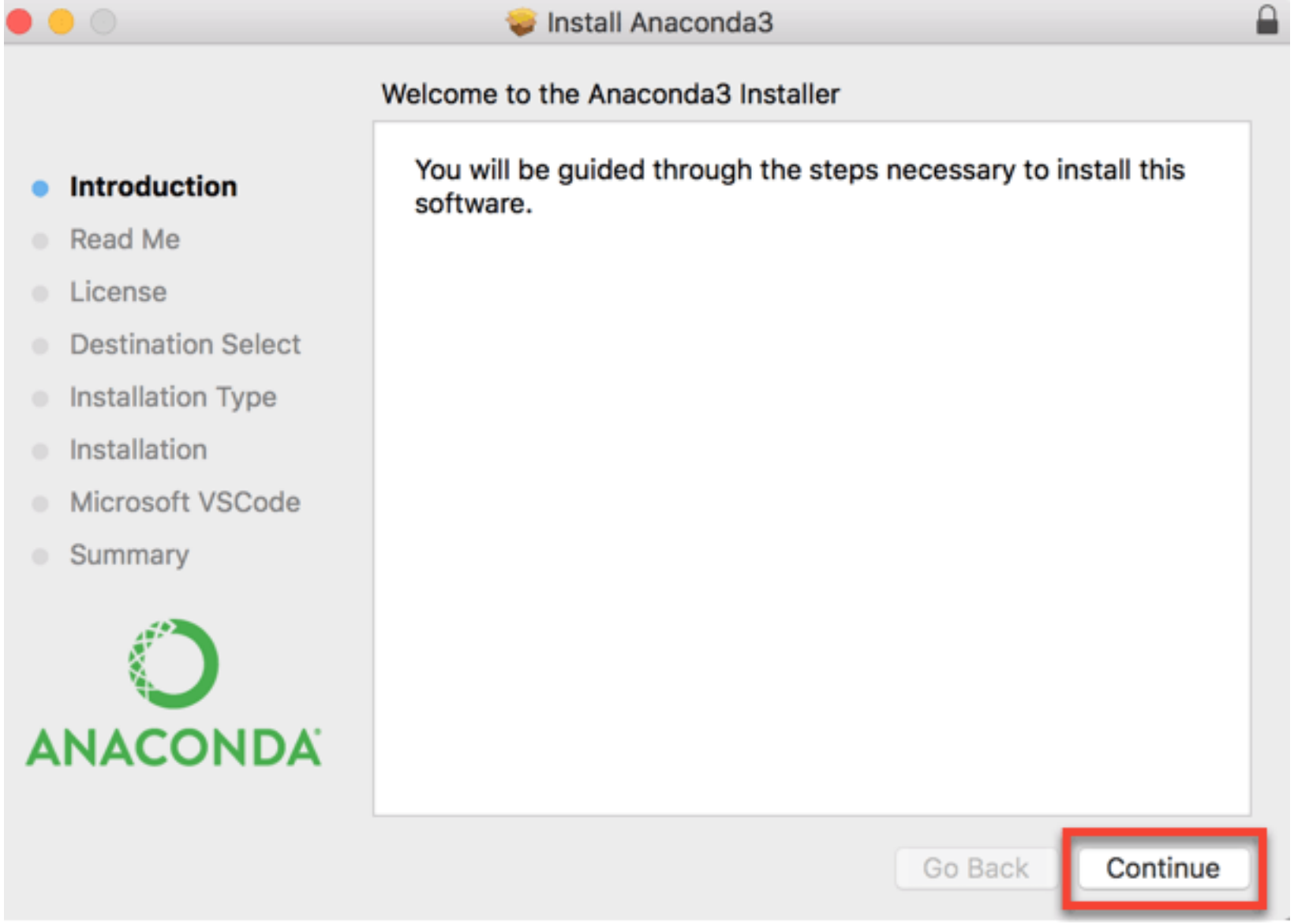
(/images/r_programming/032818_0958_HowtoDownlo2.png)

Step 2) You are now ready to install Anaconda. Double-click on the downloaded file to begin the installation. It is .dmg for mac and .exe for windows. You will be asked to confirm the installation. Click **Continue** button.



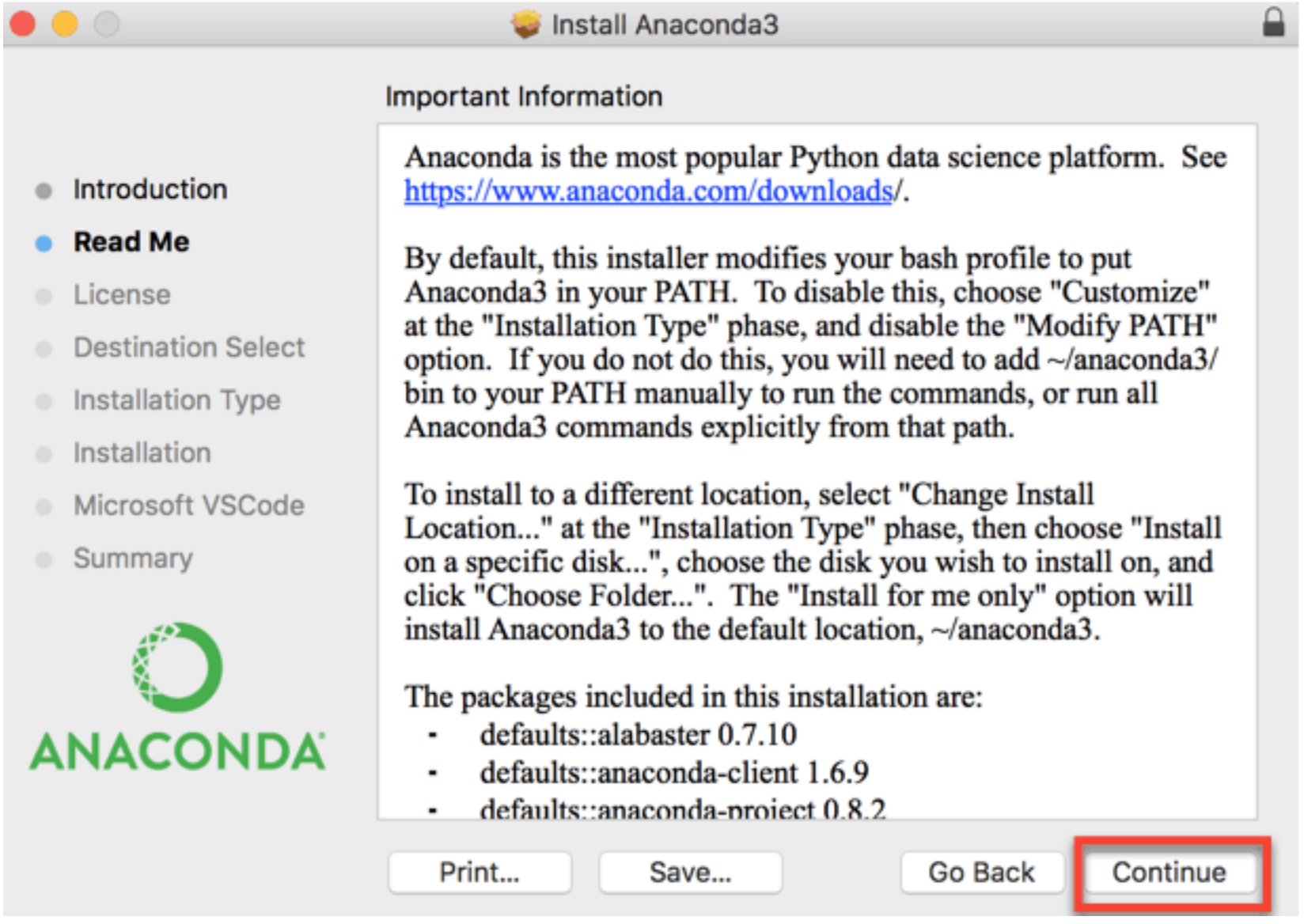
(/images/r_programming/032818_0958_HowtoDownlo3.png)

You are redirected to the **Anaconda3 Installer**.



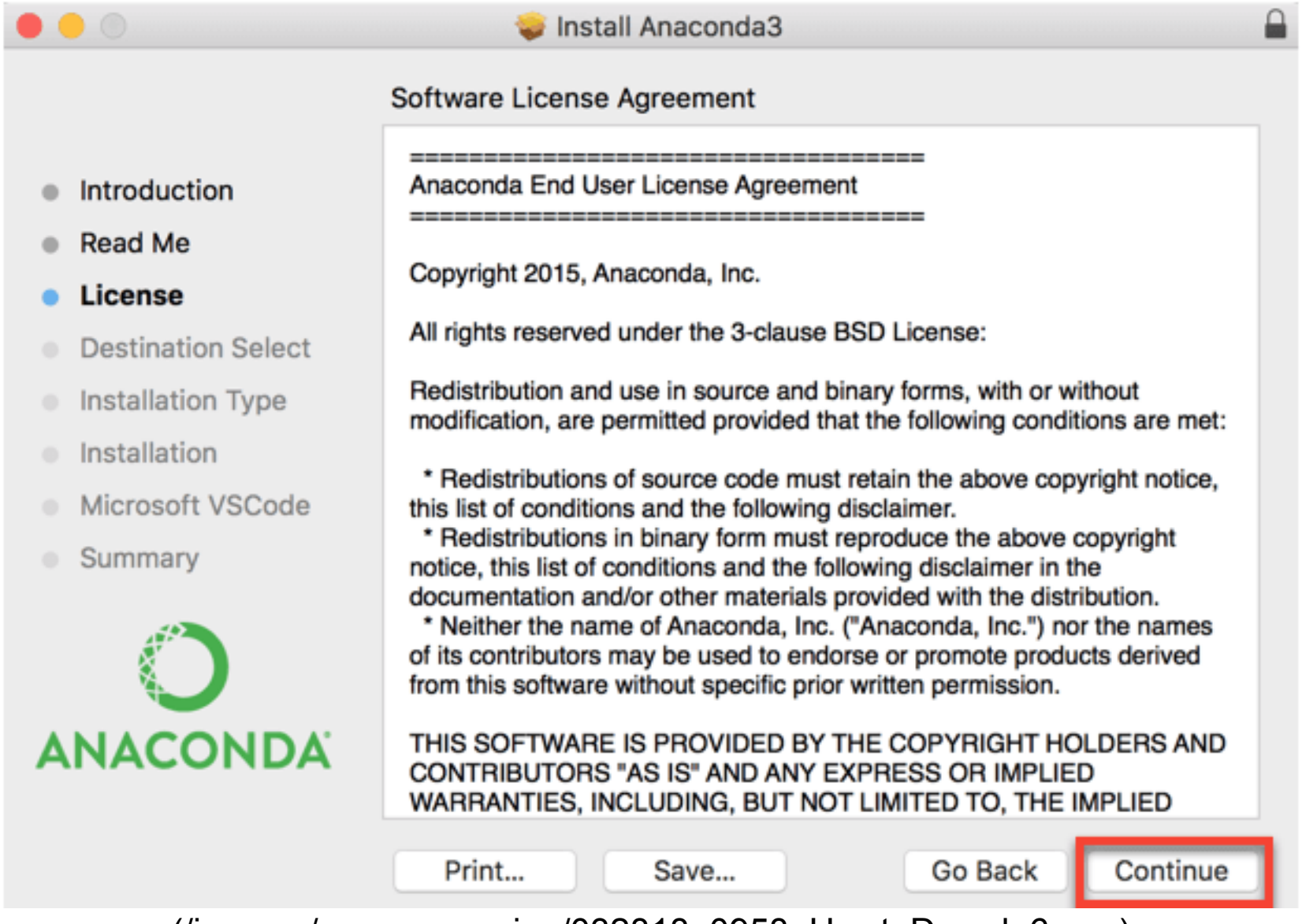
(/images/r_programming/032818_0958_HowtoDownlo4.png)

Step 3) Next window displays the **ReadMe**. After you are done reading the document, click **Continue**



(/images/r_programming/032818_0958_HowtoDownlo5.png)

Step 4) This window shows the Anaconda End User License Agreement. Click Continue to agree.



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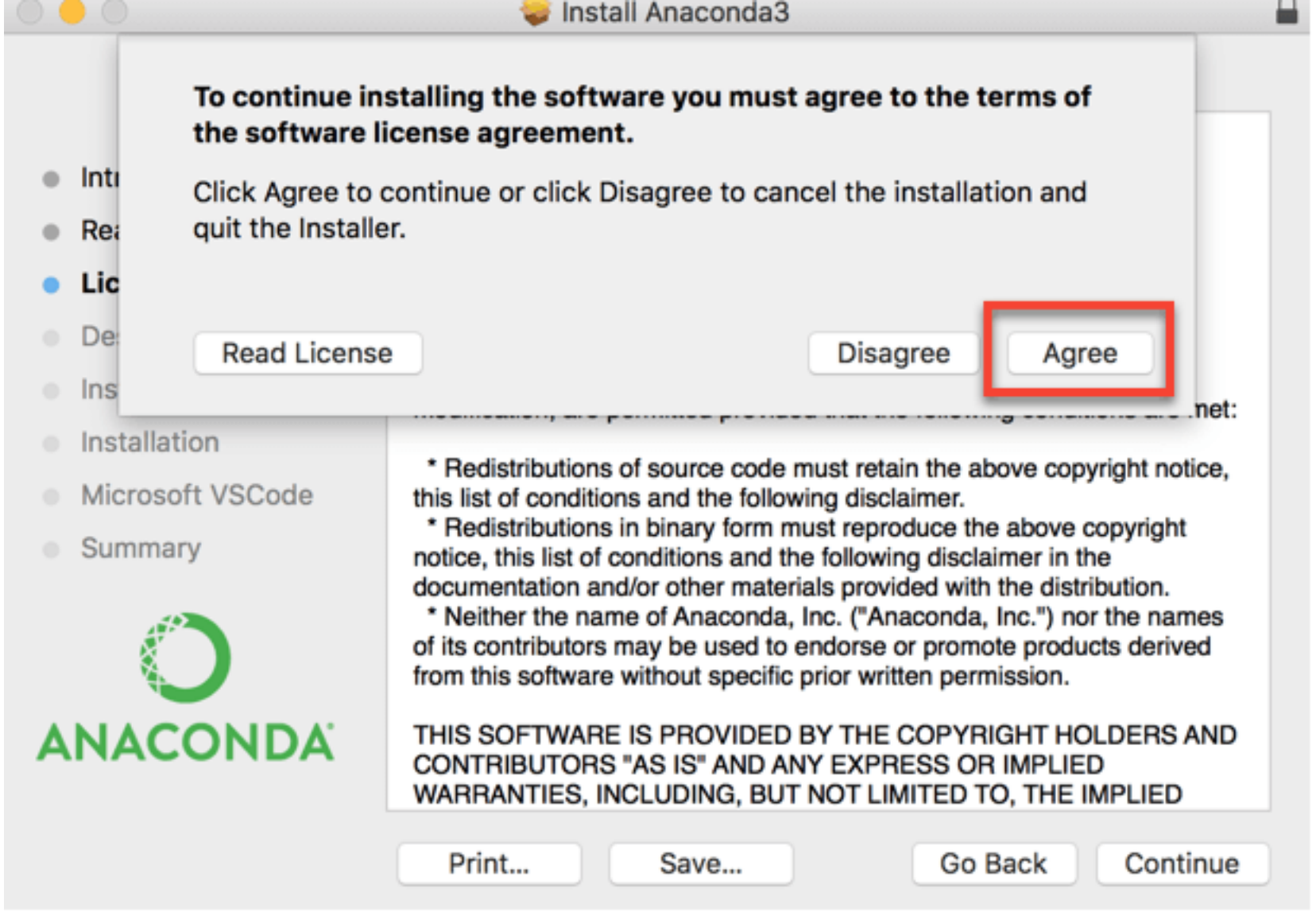
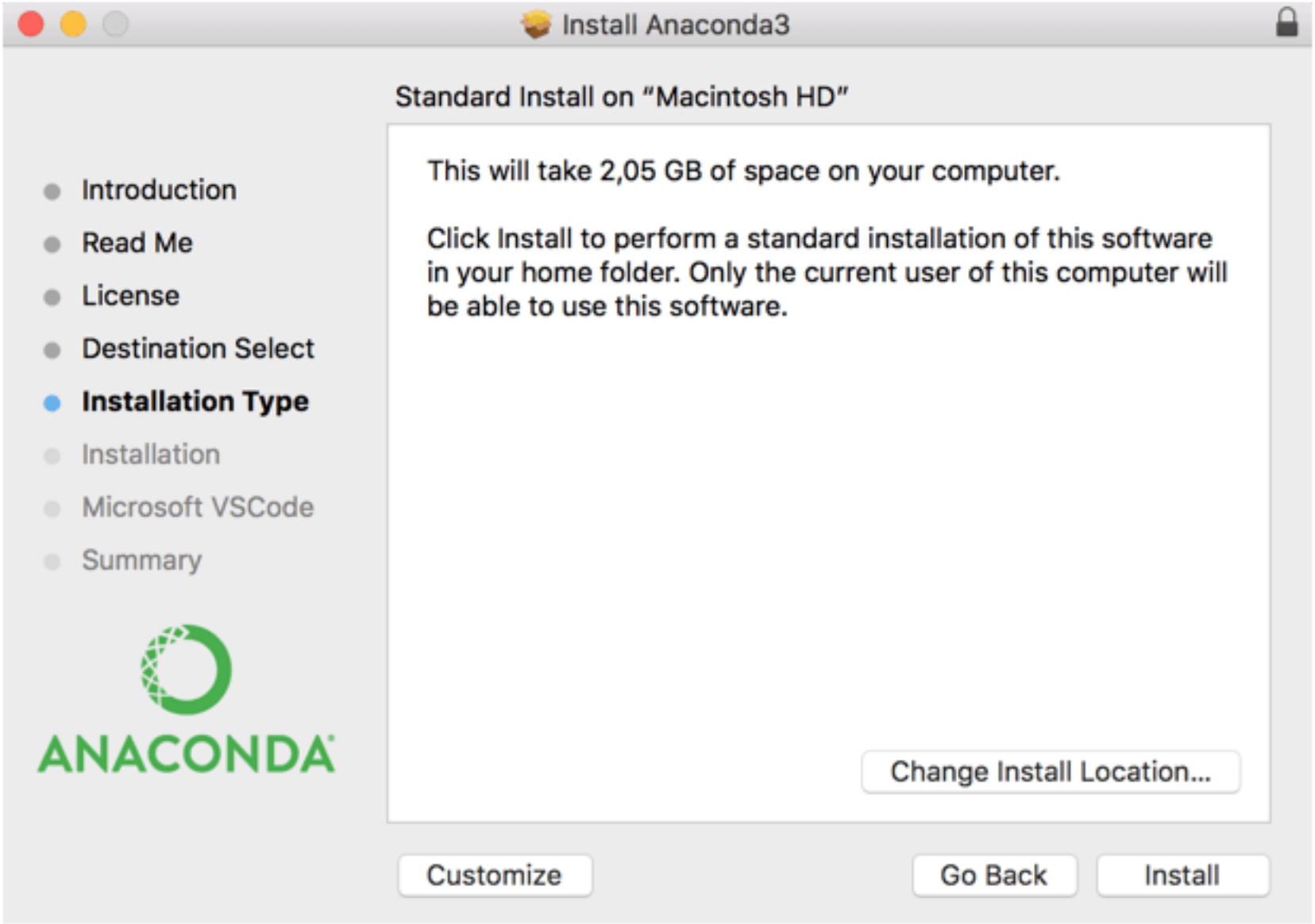
Step 5) You are prompted to agree, click **Agree** to go to the next step.



(/images/r_programming/032818_0958_HowtoDownlo7.png)

Step 6) Click **Change Install Location** to set the location of Anaconda. By default, Anaconda is installed in the user environment: **Users/YOURNAME/**.



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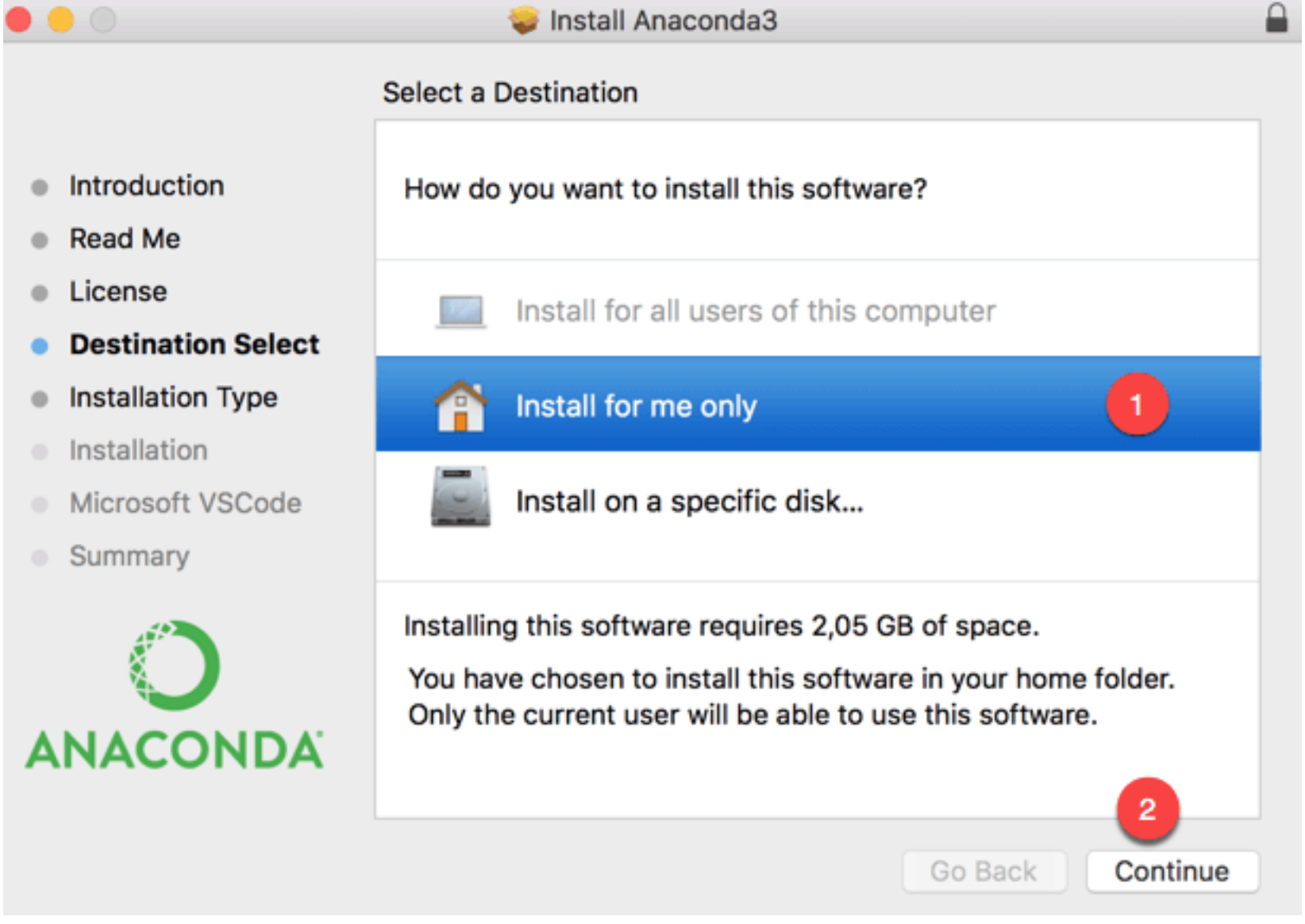
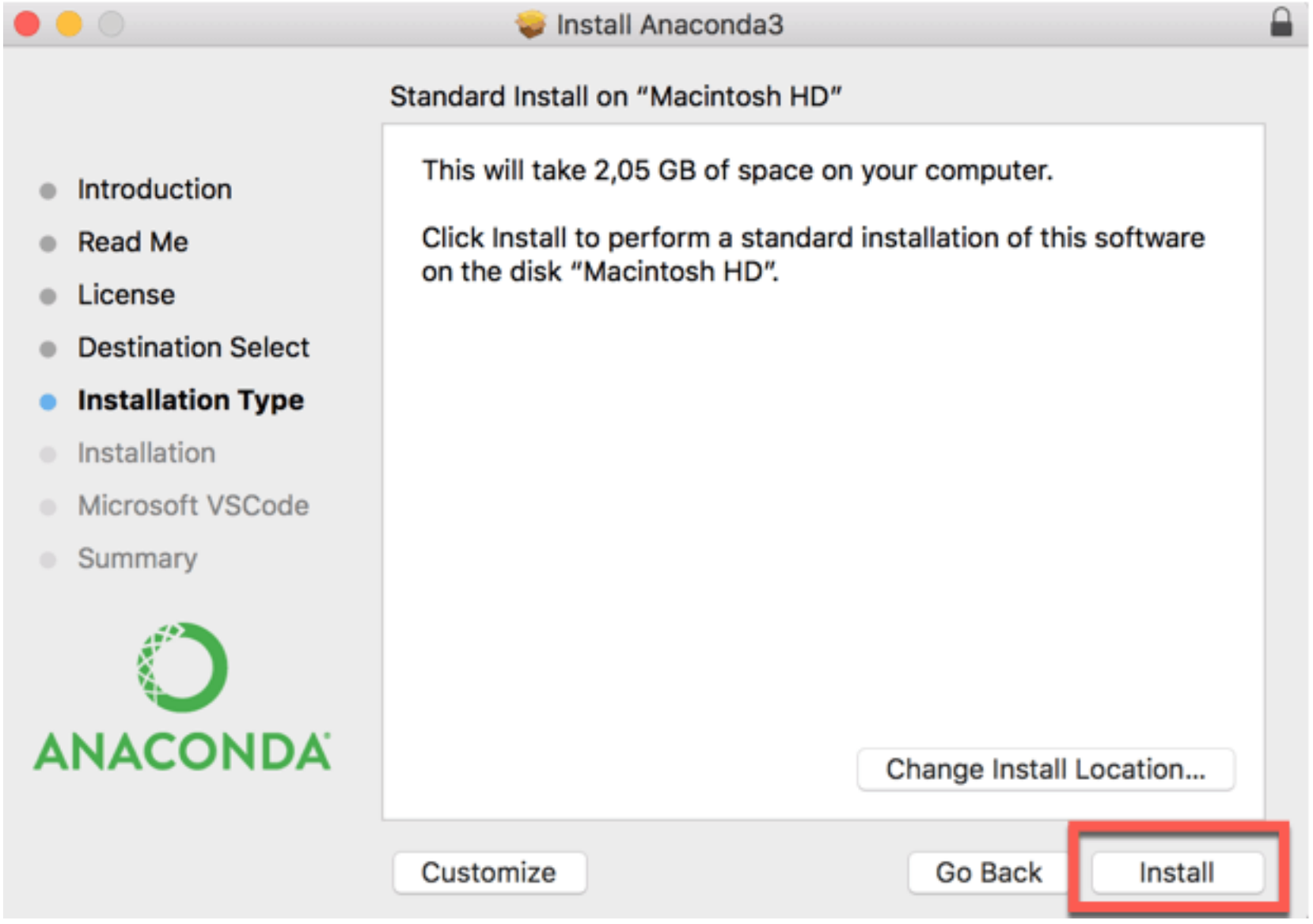
Select the destination by clicking on **Install for me only**. It means Anaconda will be accessible only to this user.



(/images/r_programming/032818_0958_HowtoDownlo9.png)

Step 7) You can install Anaconda now. Click **Install** to proceed. Anaconda takes around 2.5 GB on your hard drive.



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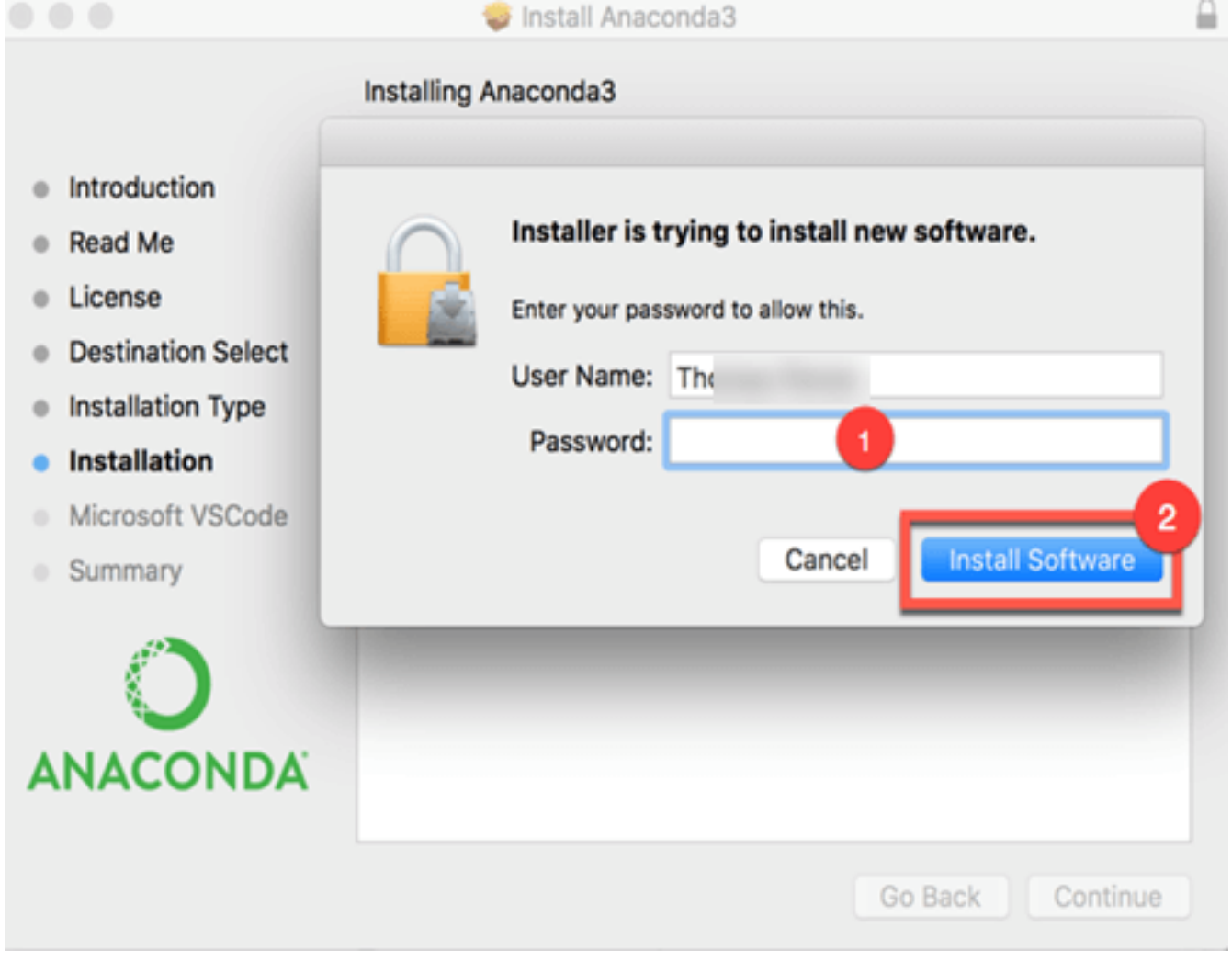
A message box is prompt. You need to confirm by typing your password. Hit **Install Software**



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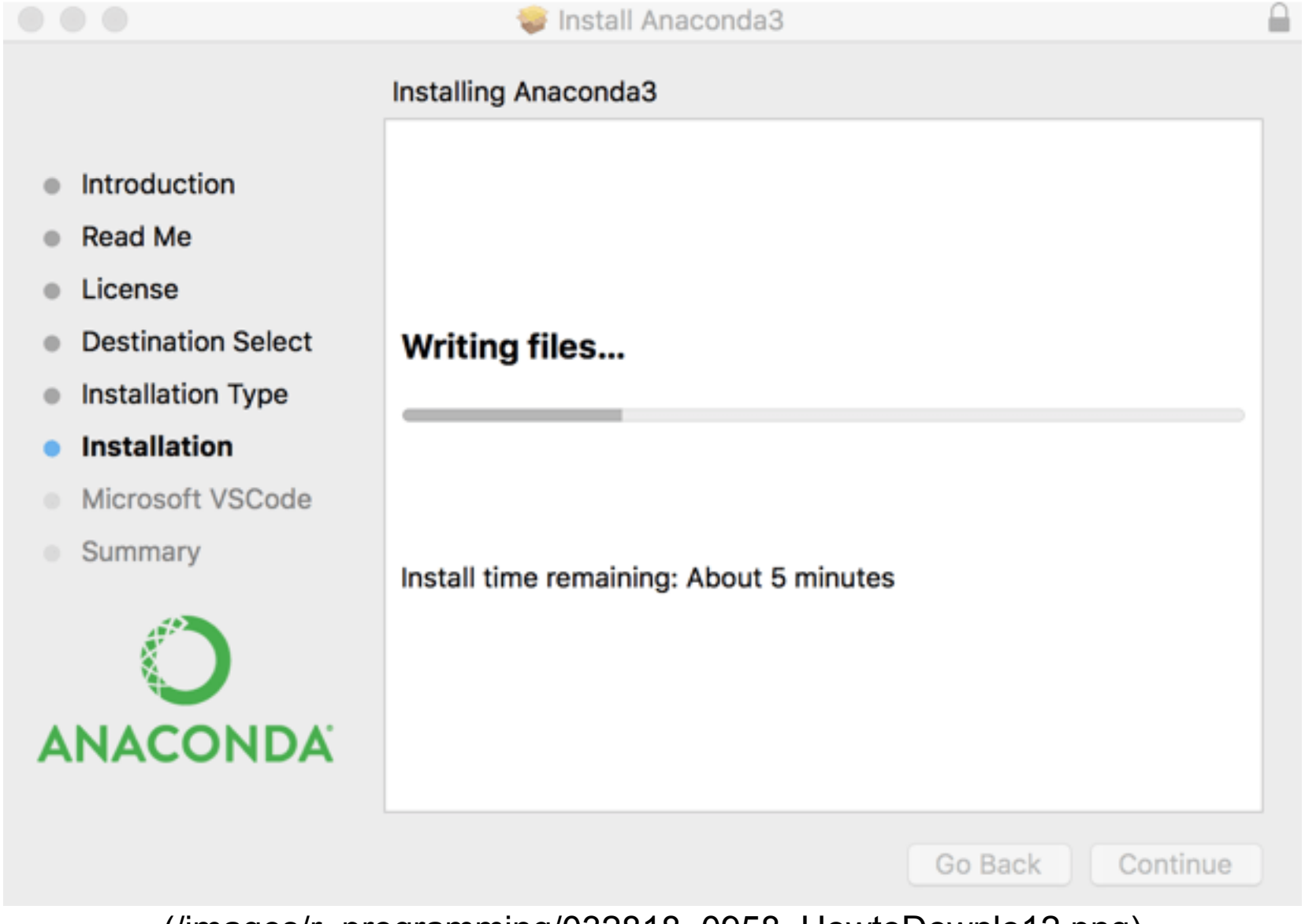
The installation may take sometimes. It depends on your machine.



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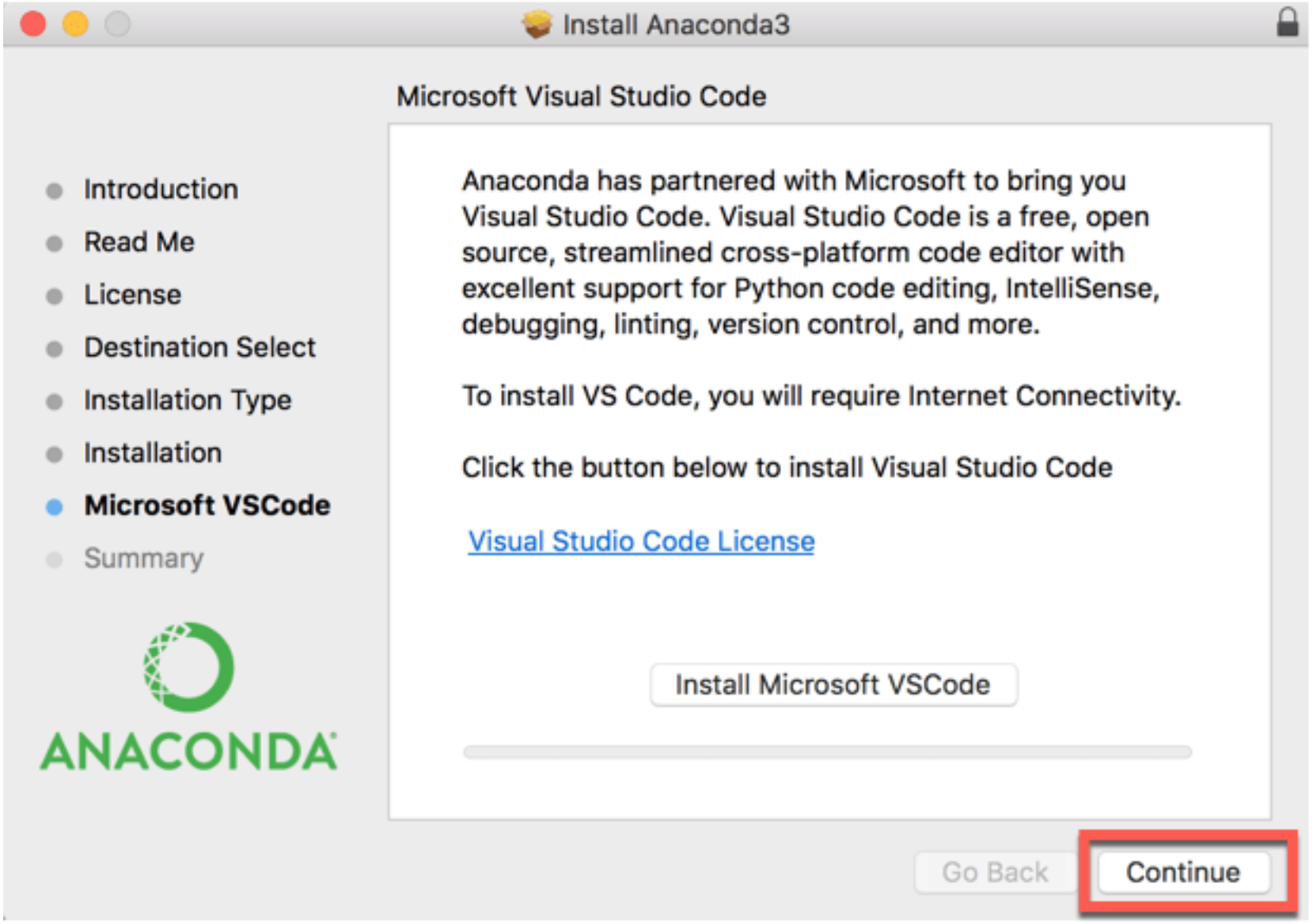
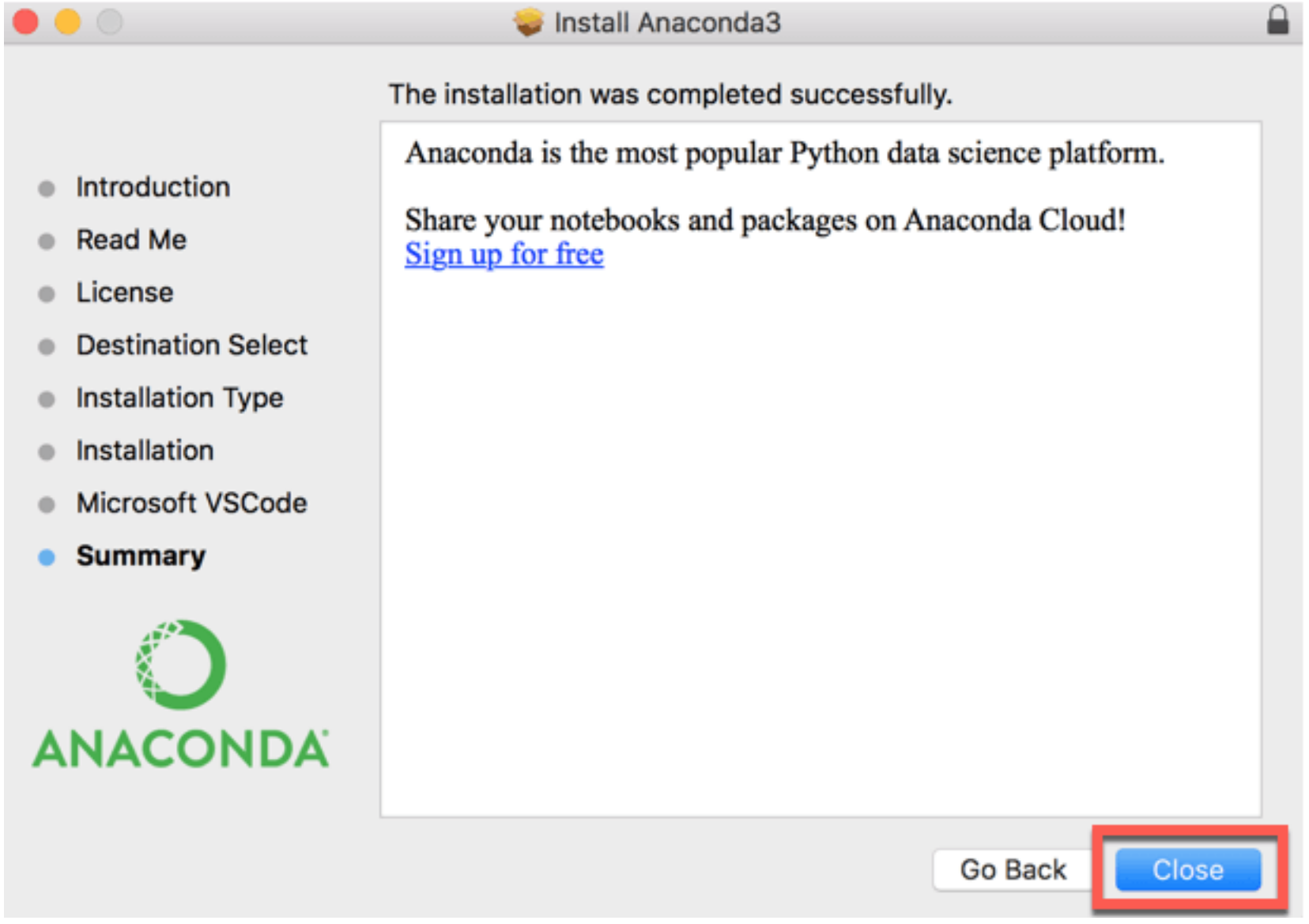
Step 8) Anaconda asks you if you want to install Microsoft VSCode. You can ignore it and hit Continue



(/images/r_programming/032818_0958_HowtoDownlo13.png)

Step 9) The installation is completed. You can close the window.



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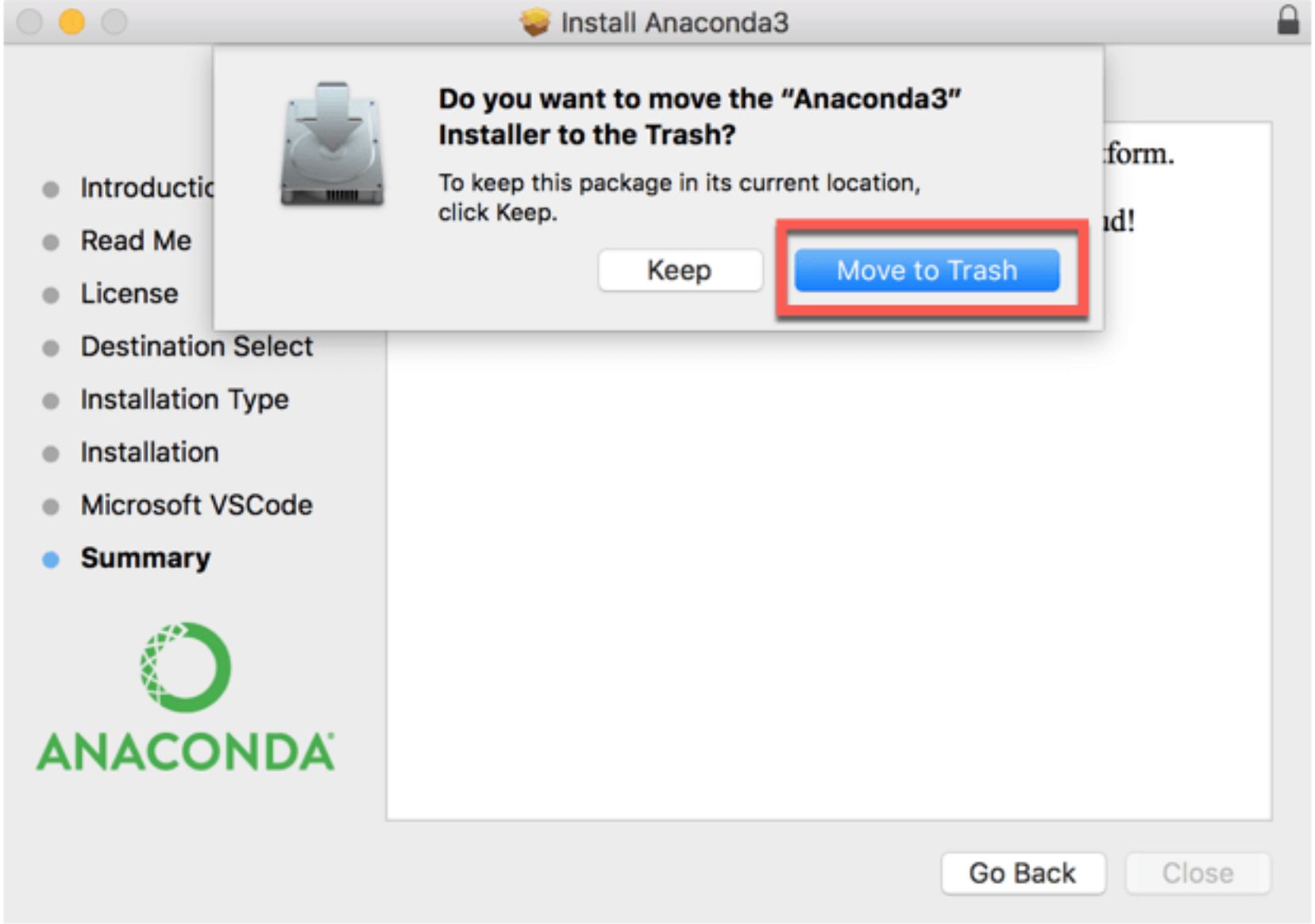
You are asked if you want to move "Anaconda3" installer to the Trash. Click **Move to Trash**



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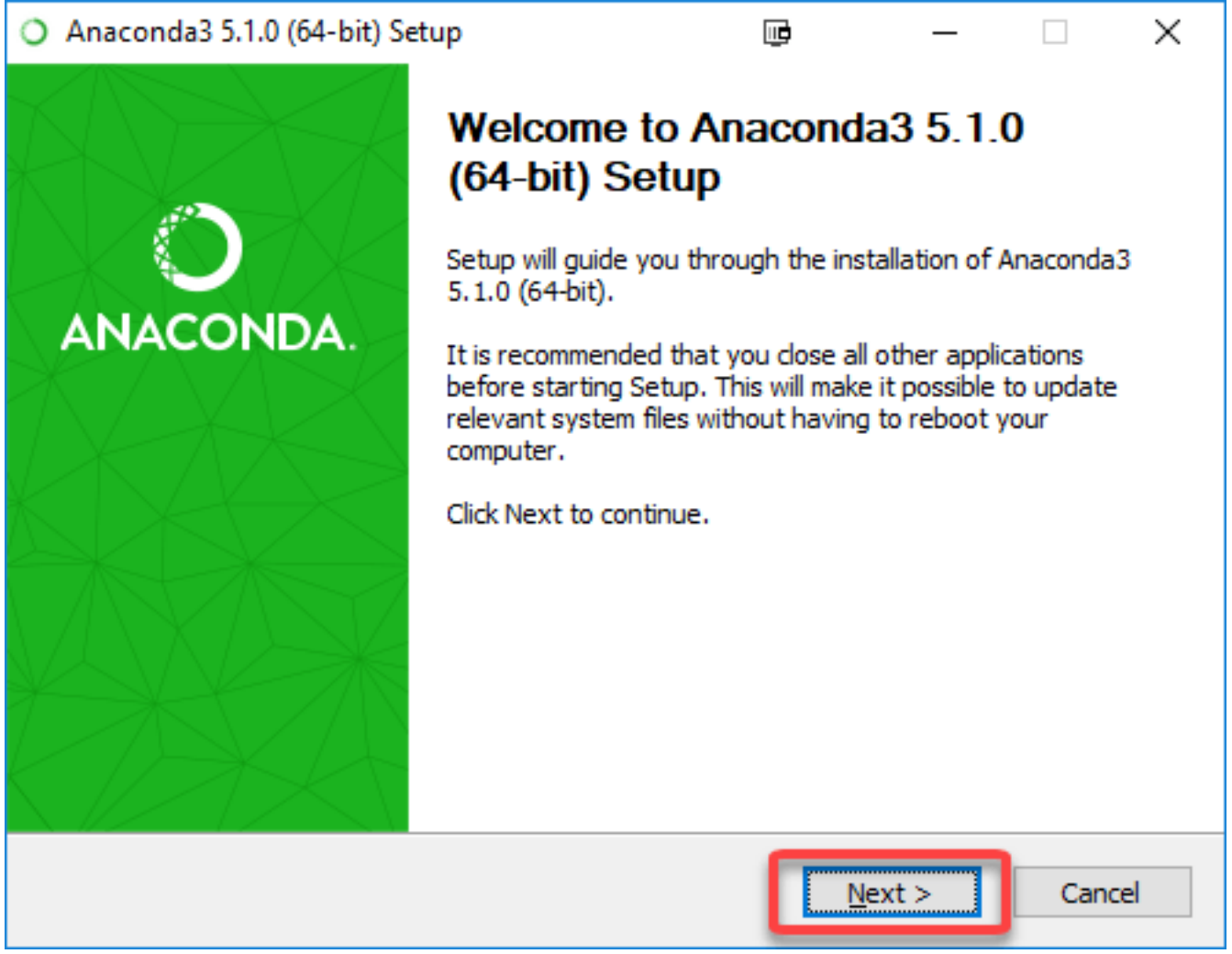
You are done with the installation of Anaconda on a macOS system

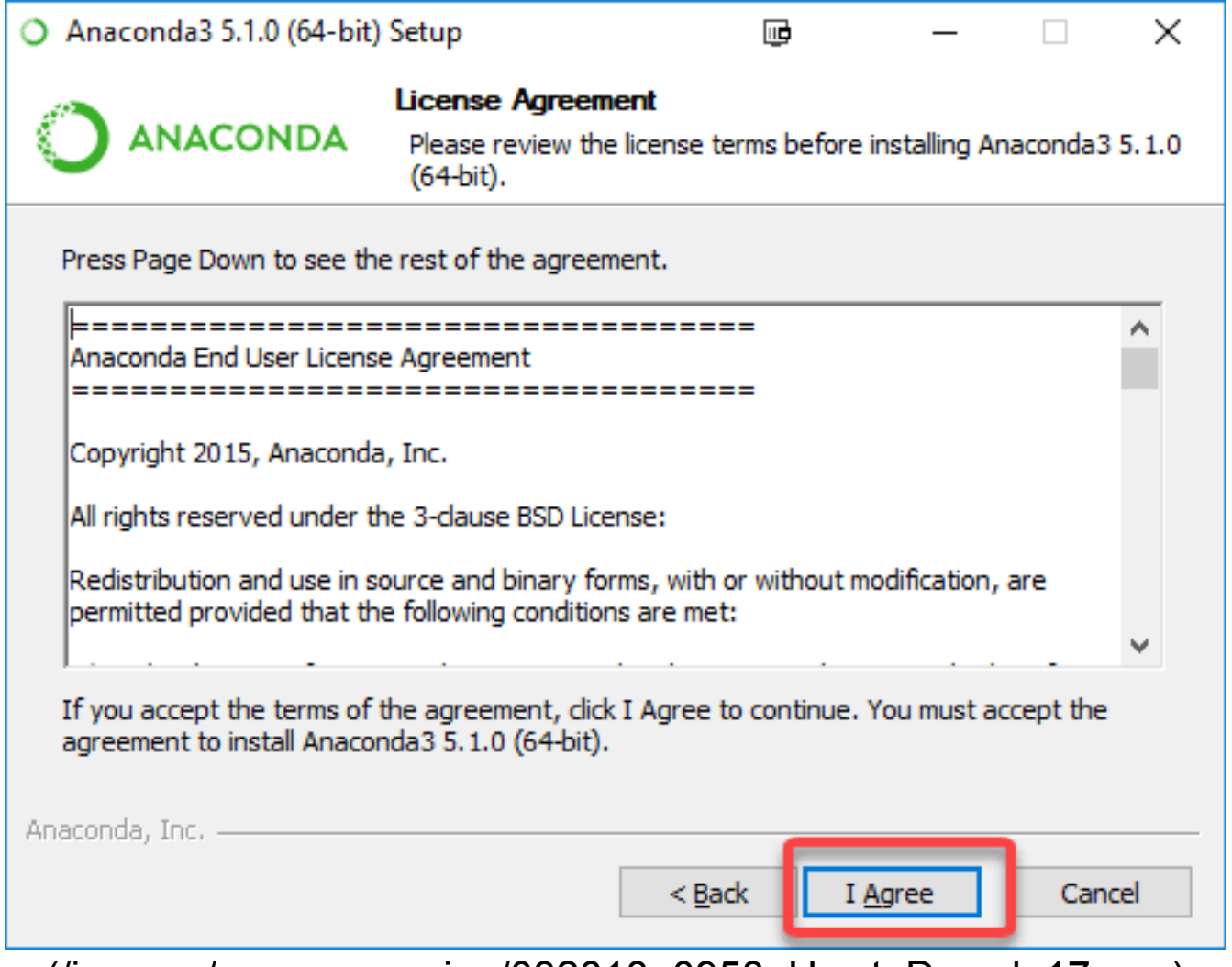
Windows User

Step 1) Open the downloaded exe and click Next



(/images/r_programming/032818_0958_HowtoDownlo16.png)

Step 2) Accept the License Agreement



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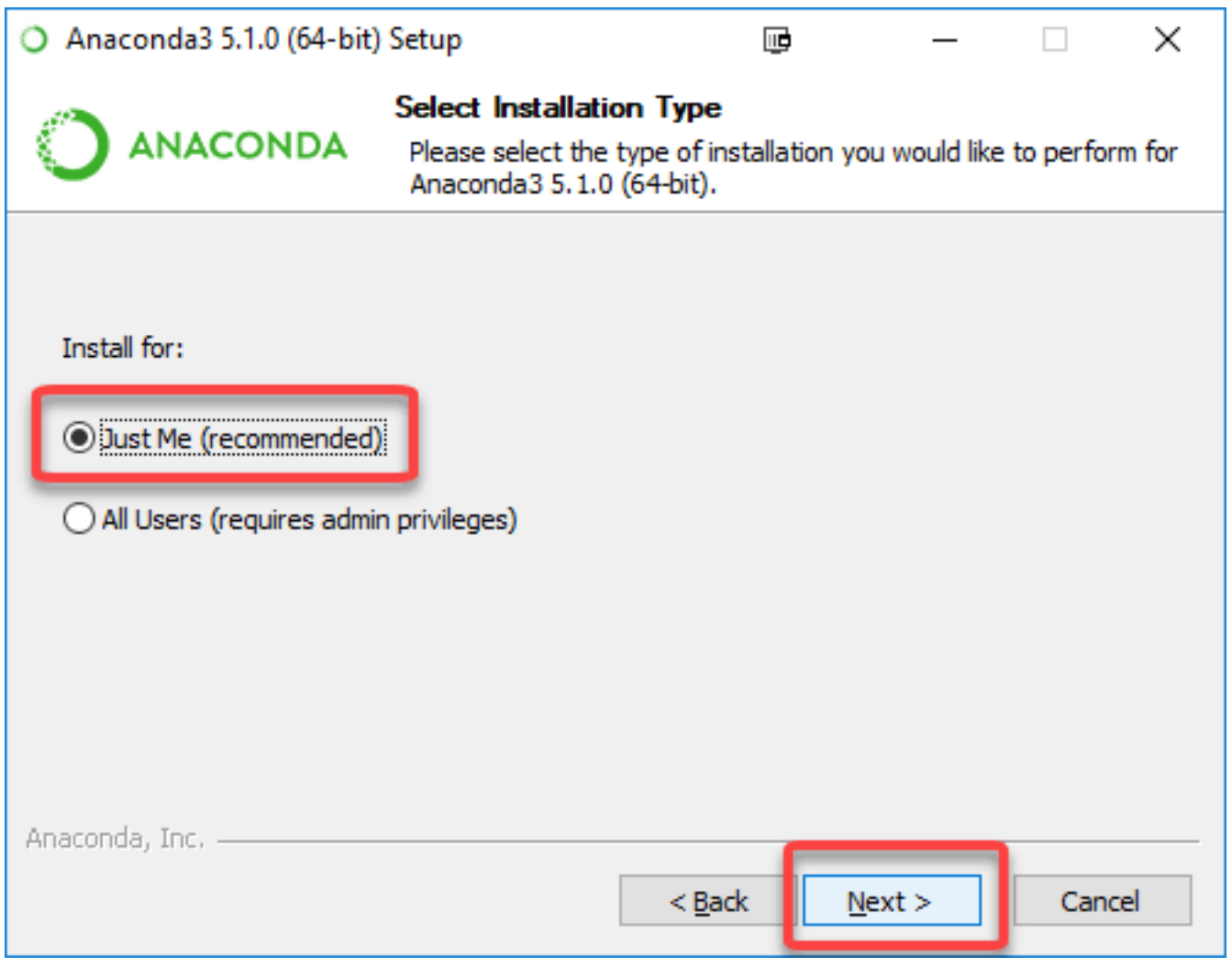
Step 3) Select Just Me and click Next



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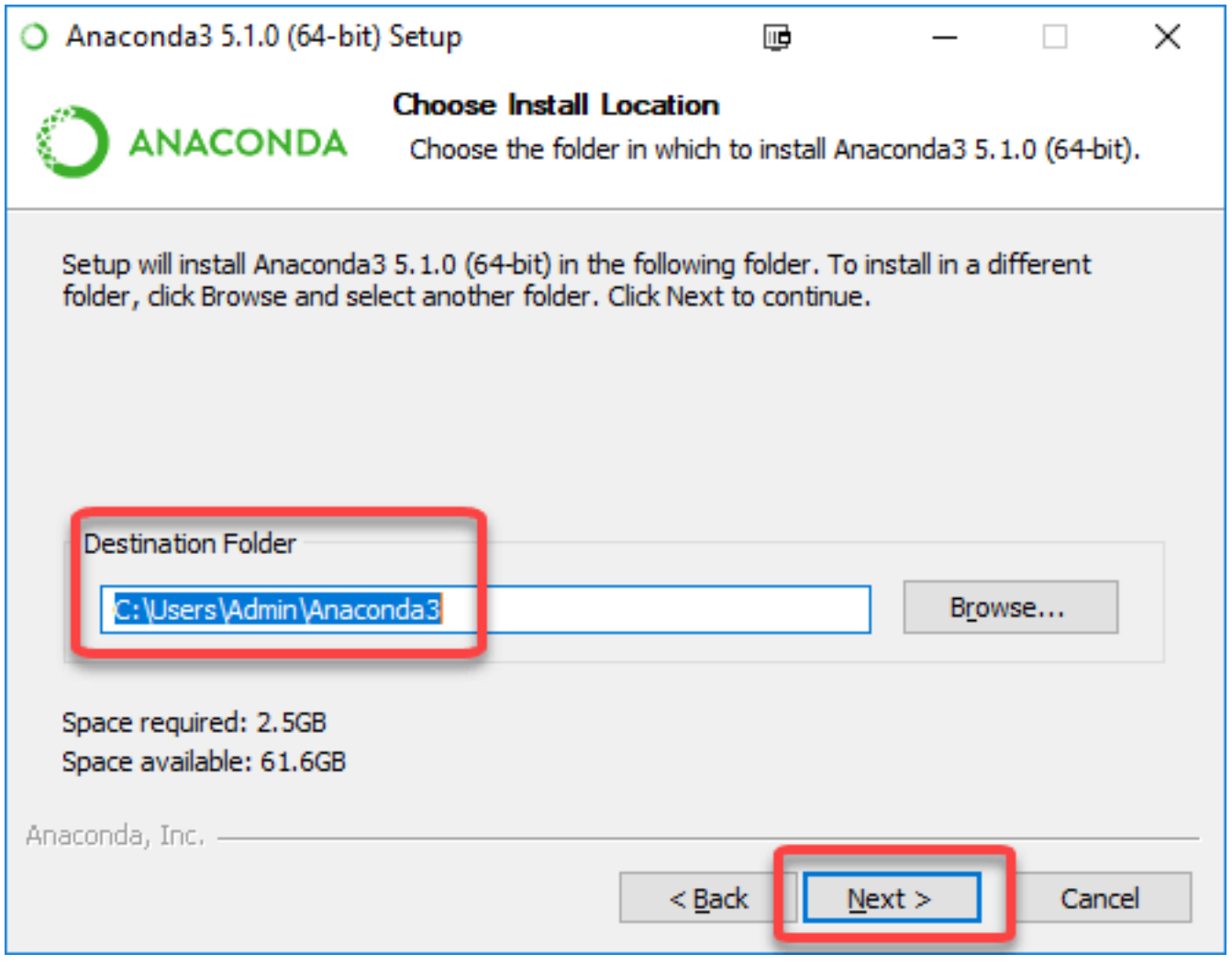
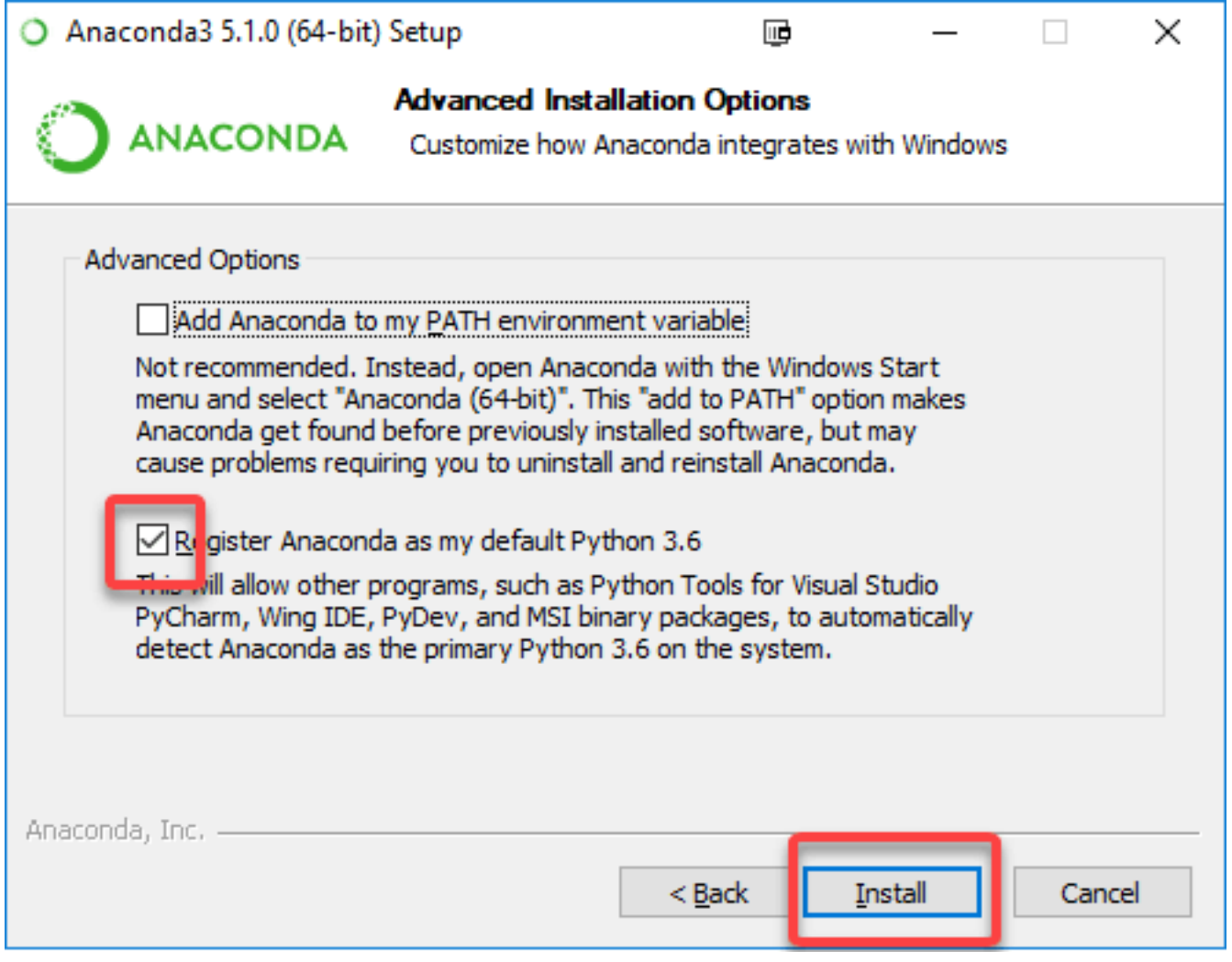
Step 4) Select Destination Folder and Click Next



(/images/r_programming/032818_0958_HowtoDownlo19.png)

Step 5) Click Install in next Screen



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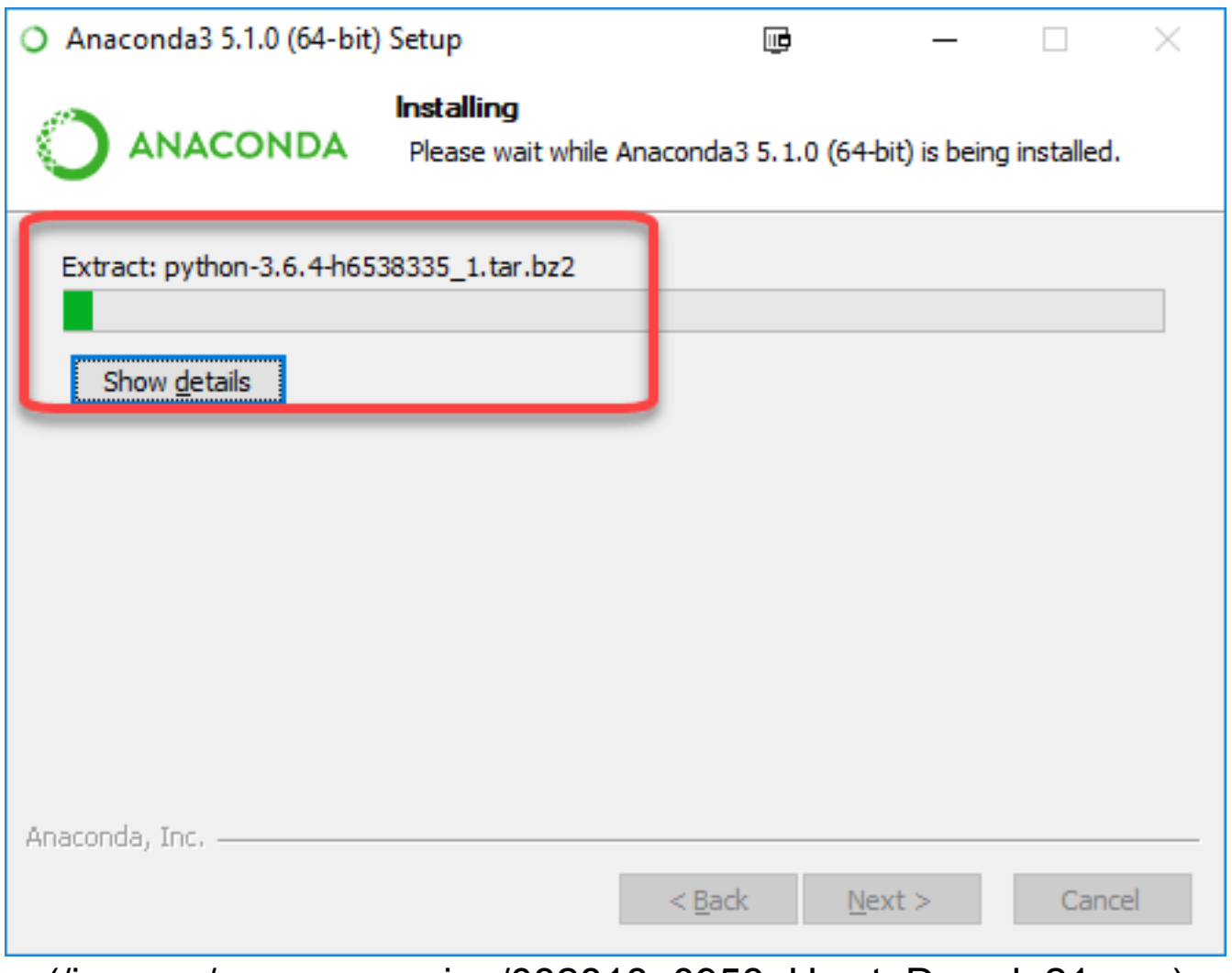
Step 6) Installation will begin



(/images/r_programming/032818_0958_HowtoDownlo21.png)

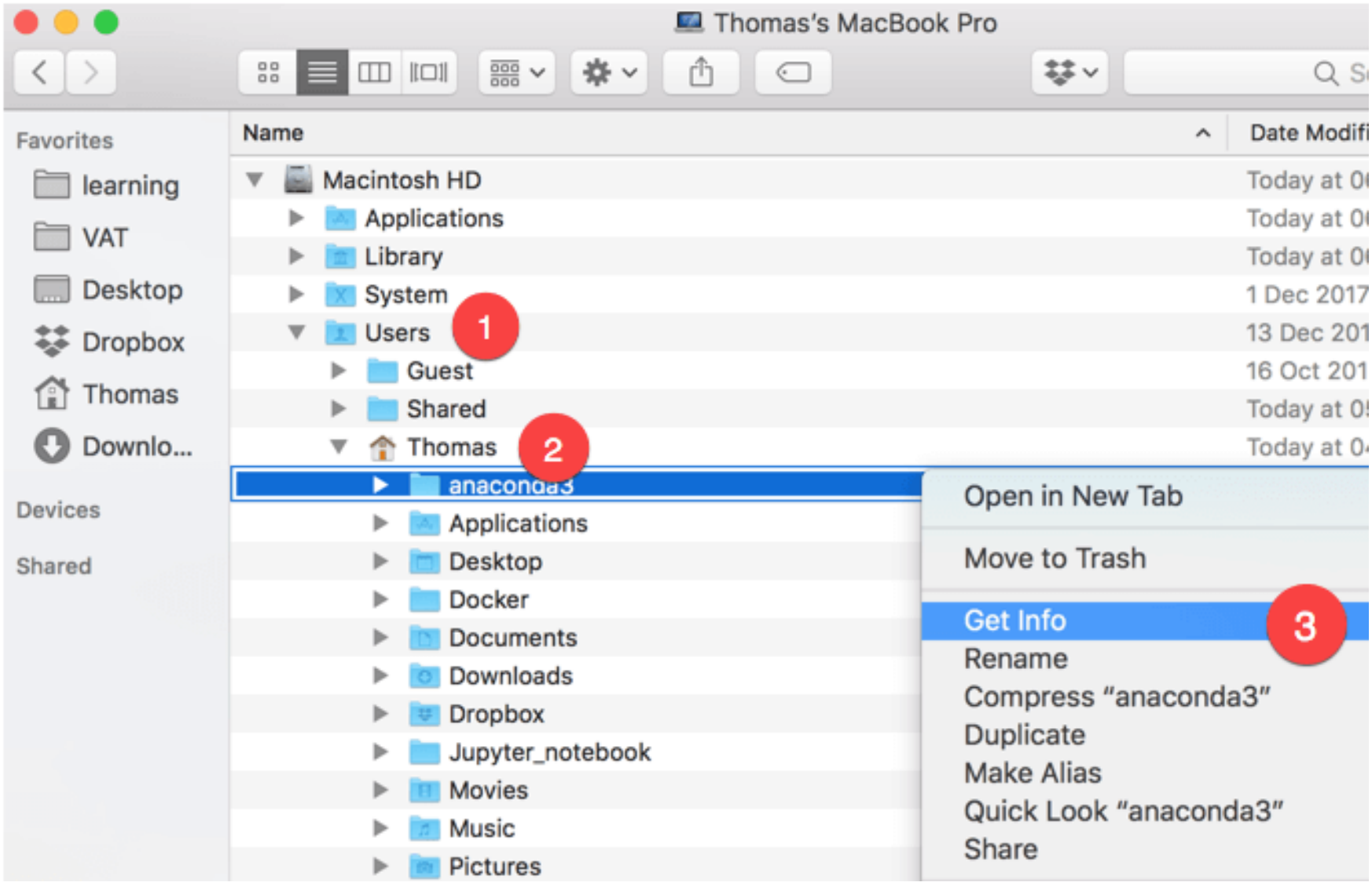
Once done, Anaconda will be installed.

Install R

Mac users

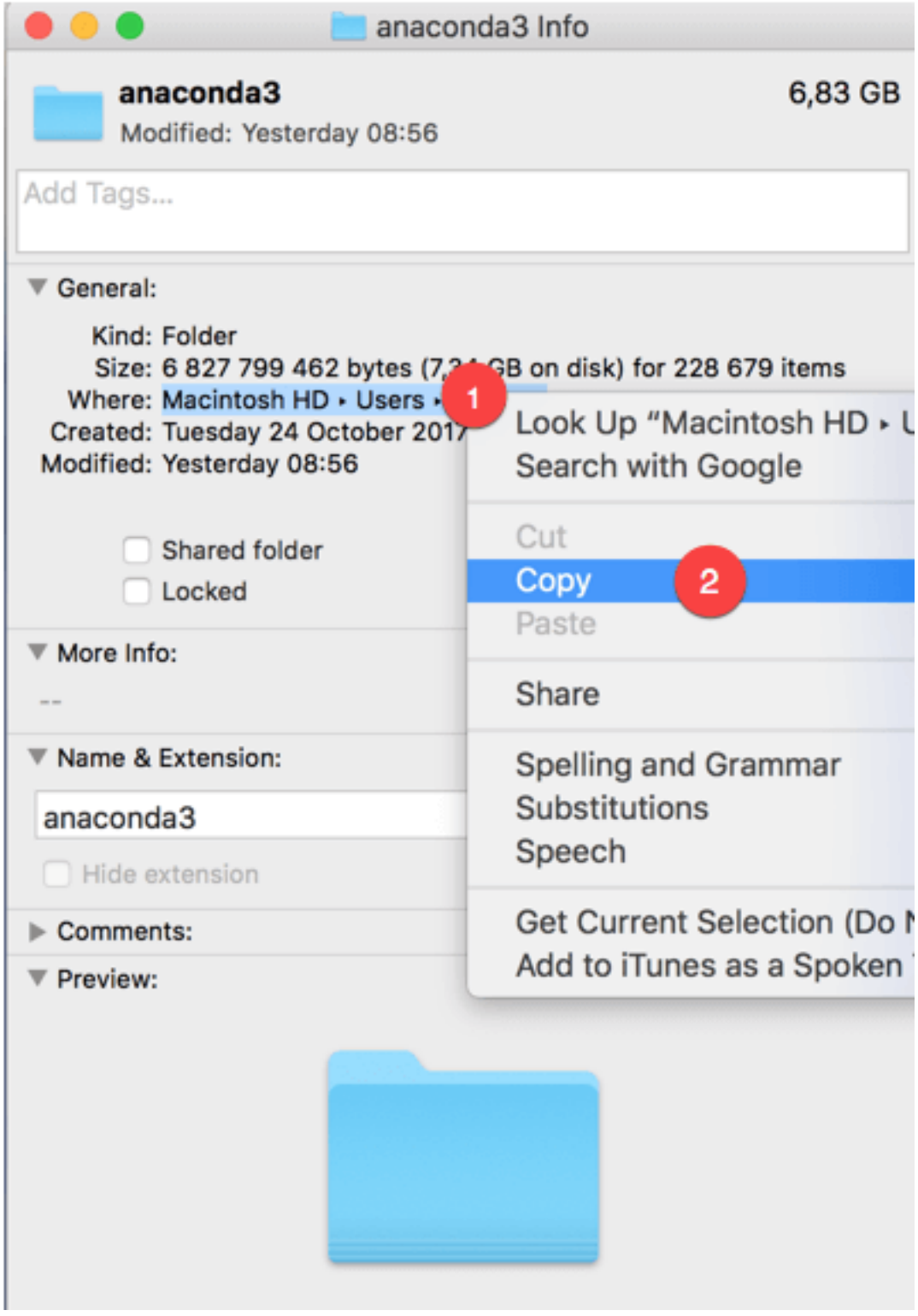
Step 1) Anaconda uses the **terminal** to install libraries. The terminal is a quick way to install libraries. We need to be sure to point the installation toward the right path. In our case, we set the location of Anaconda to the **Users/USERNAME/**. We can confirm this by checking **anaconda3** folder.

Open **Computer** and select **Users**, **USERNAME** and **anaconda3**. It confirms that we installed Anaconda on the right path. Now, let's see how macOS write the path. Right-click, and then **Get Info**



(/images/r_programming/032818_0958_HowtoDownlo22.png)

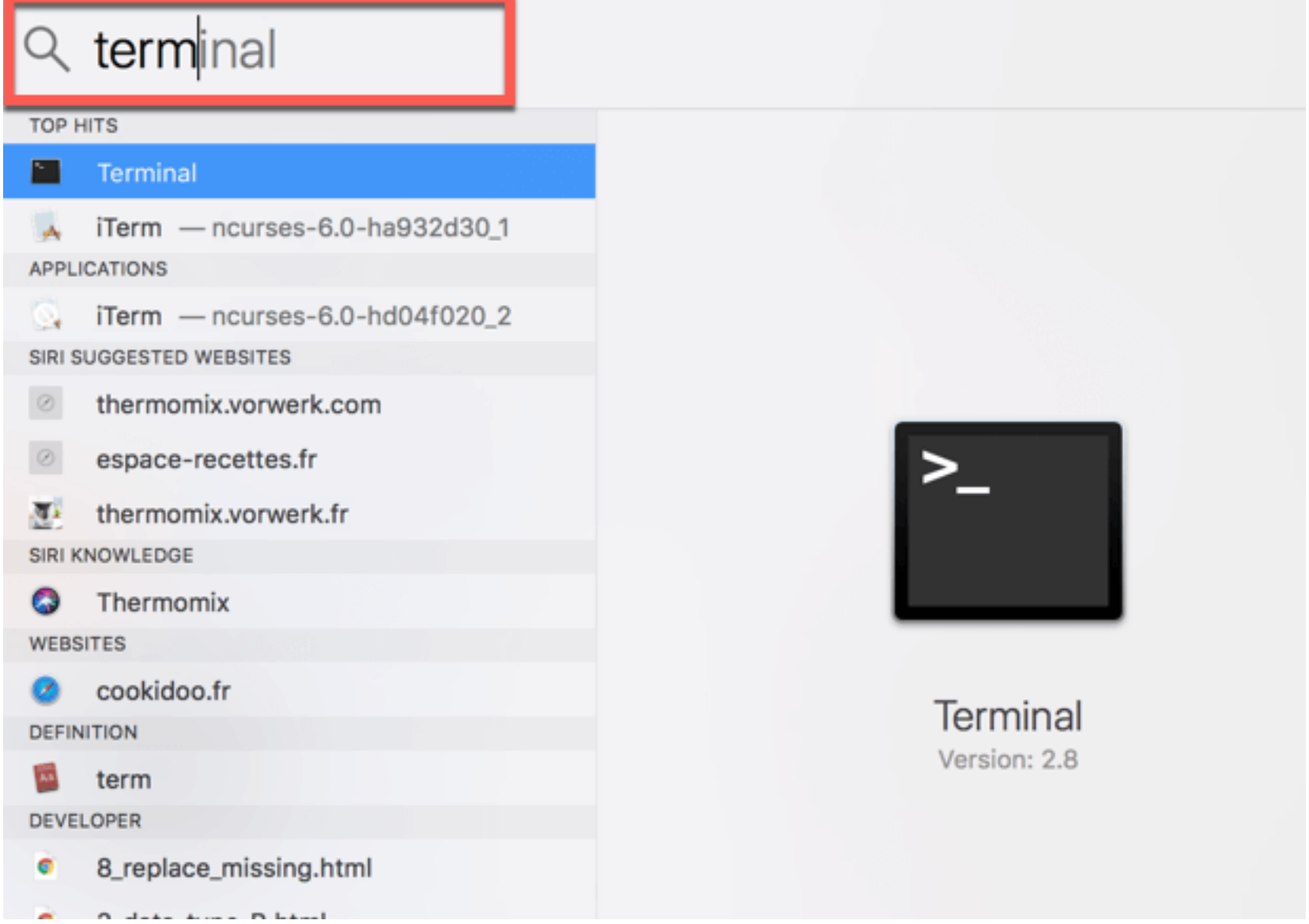
Select the path **Where** and click **Copy**



(/images/r_programming/032818_0958_HowtoDownlo23.png)

Step 2) For Mac user:

- The shortest way is to use the **Spotlight Search** and write **terminal**.

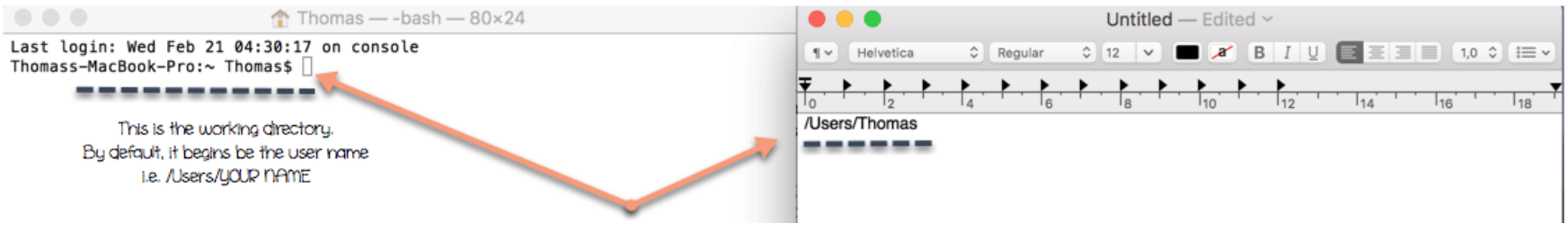


(/images/r_programming/032818_0958_HowtoDownlo24.png)

The terminal sets the default working directory to **Users/USERNAME**. As you can see in the figure below, the path of **anaconda3** and the working directory are identical. In macOS, the latest folder is shown before the **$**. For me, it is **Thomas**. The terminal will install all the libraries in this working directory.

Dell Precision Tower 3000 Series... **$749** ~~$1,184.65~~
Dell Precision 5520 Business Laptop... **$1,399** ~~$2,008.57~~
Dell Precision 3630 Tower (Intel)... **$649** ~~$929~~
Dell Precisio 7920 Tower)... **$5,069** ~~$7,245~~
Dell

If the path on the text editor does not match the working directory, you can change it by writing cd PATH in the terminal. **PATH** is the path you pasted in the text editor. Don't forget to wrap the PATH with **"PATH"**. This action will change the working directory to **PATH**.

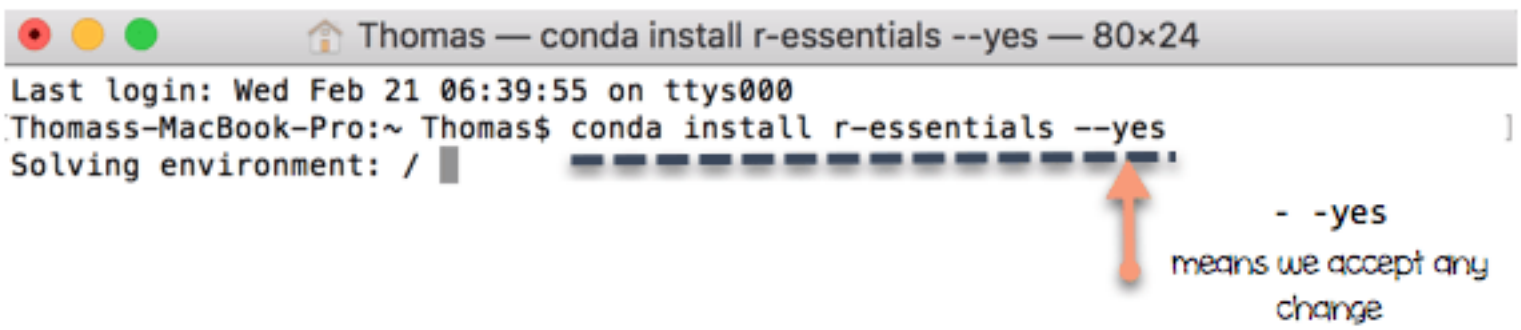


(/images/r_programming/032818_0958_HowtoDownlo25.png)

Step 4) We are ready to install R. I recommend you to install all packages and dependencies with the conda command in the terminal.

```
## In the terminalconda install r-essentials --yes
```

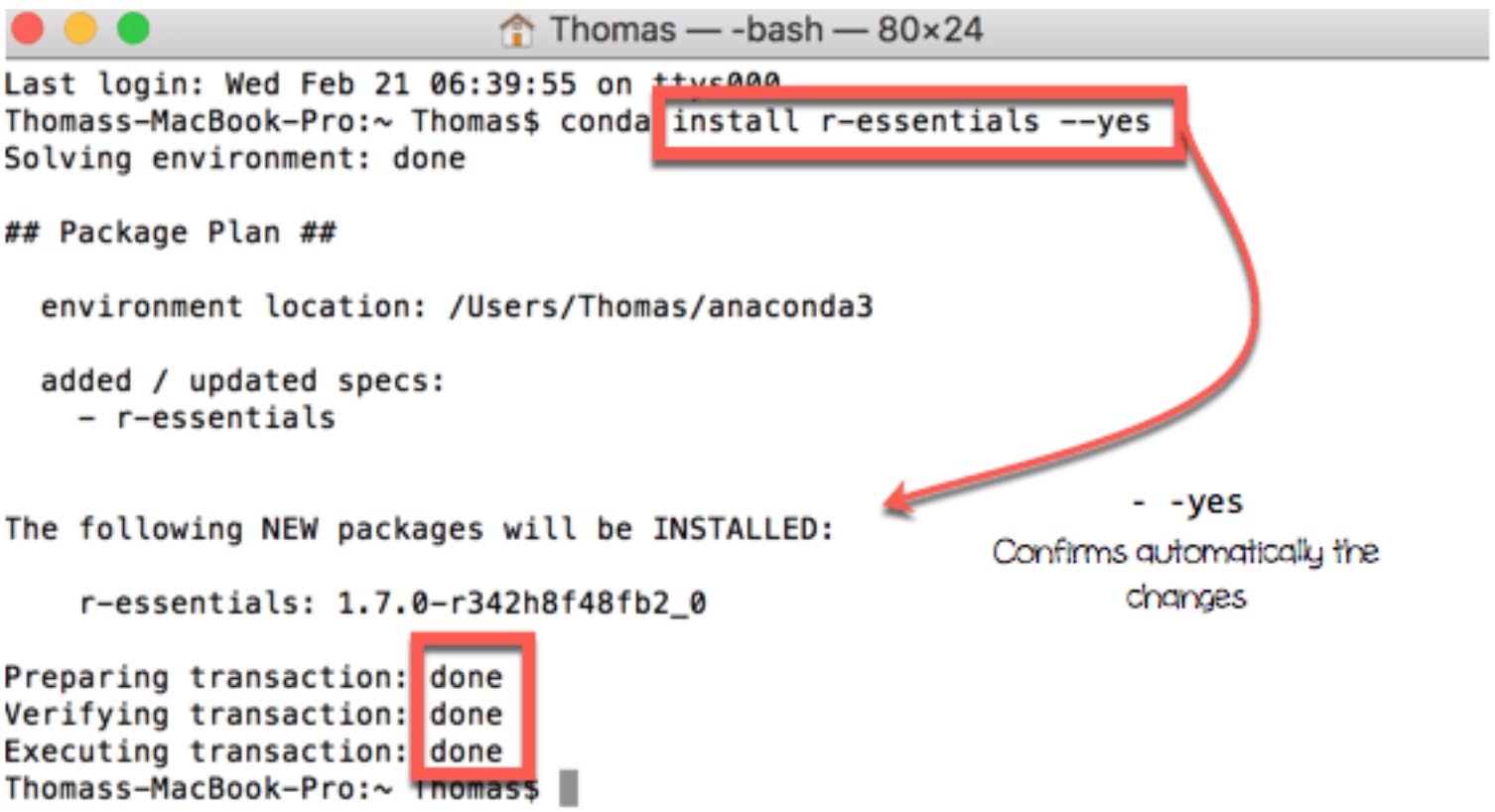
r-essentials means conda will install **R** and all the necessary libraries used by data scientist.



(/images/r_programming/032818_0958_HowtoDownlo26.png)

Conda is downloading the libraries

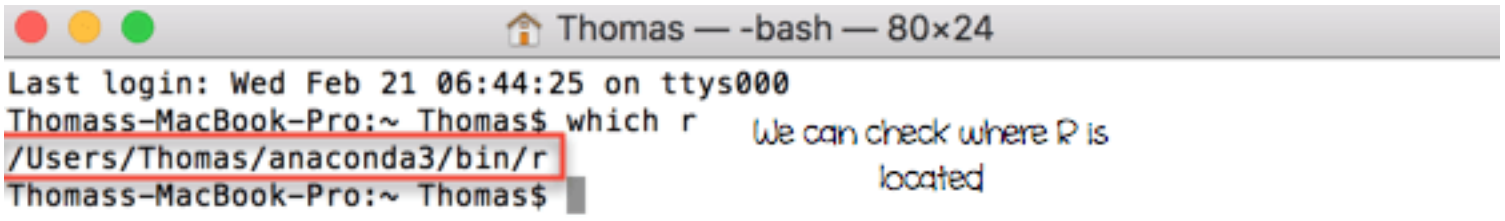
It takes some time to upload all the libraries. Be patient...you are all set.



(/images/r_programming/032818_0958_HowtoDownlo27.png)

In the terminal, you should see Executing transaction: done. If so, you have successfully installed **R**.

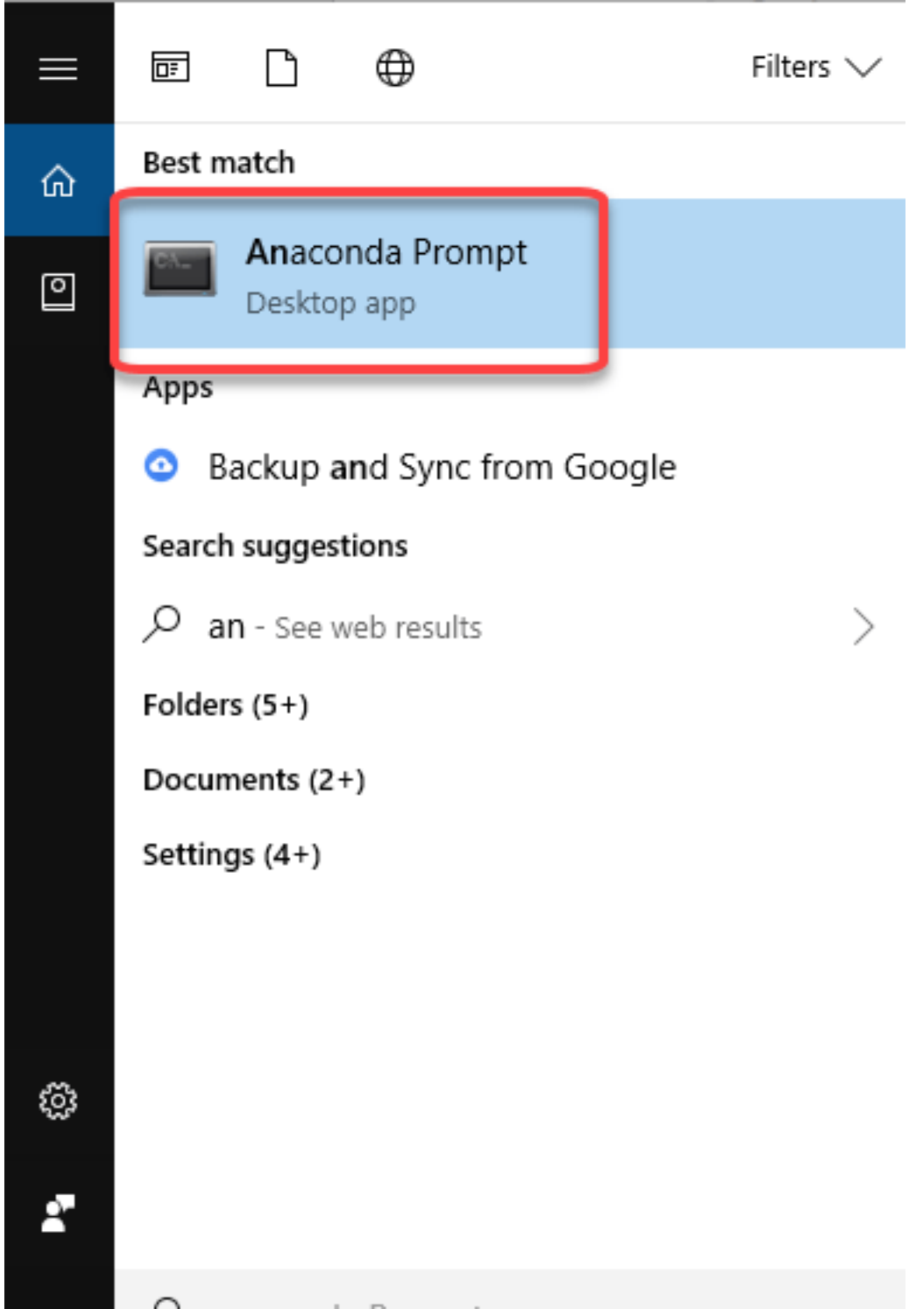
You can check where R is located.



(/images/r_programming/032818_0958_HowtoDownlo28.png)

Windows User

Step 1) Open the Anaconda command prompt



(/images/r_programming/032818_0958_HowtoDownlo29.png)

Step 2) In the command prompt

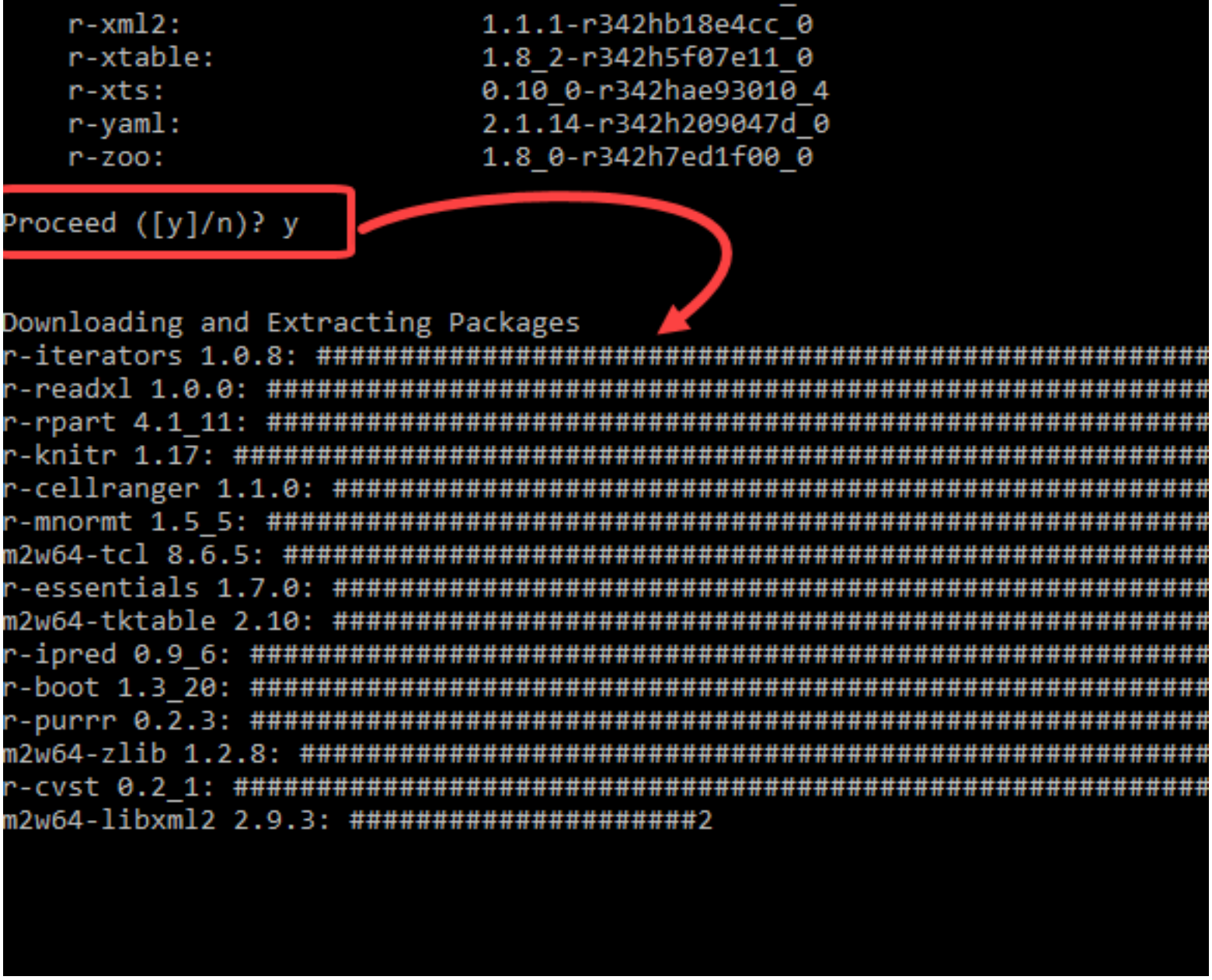
1. Enter the R install command
2. Environment will be determined
3. List of packages to be installed will be listed

Anaconda Prompt - conda install r-essentials

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

## Package Plan ##

  environment location: C:\Users\Admin\Anaconda3

  added / updated specs:
    - r-essentials


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    r-iterators-1.0.8          |   r342hfe8643f_4         320 KB
    r-readxl-1.0.0             |   r342hfc97dd6_0         824 KB
    r-rpart-4.1_11             |   r342h4e779ed_0         927 KB
    r-knitr-1.17               |   r342h2aeaf5c_0         950 KB
    r-cellranger-1.1.0         |   r342hfe96f31_0          87 KB
    r-mnormt-1.5_5             |   r342h5769c91_0          80 KB
    m2w64-tcl-8.6.5            |                3         3.9 MB
    r-essentials-1.7.0         |   r342hac5c45a_0           7 KB
    m2w64-tktable-2.10         |                5         112 KB
    r-ipred-0.9_6              |   r342h8b93065_0         316 KB
    r-boot-1.3_20              |   r342h834dc84_0         691 KB
    r-purrr-0.2.3              |   r342h7fe2810_0         253 KB
    m2w64-zlib-1.2.8           |               10         197 KB
    r-cvst-0.2_1               |   r342h586ffb9_0          66 KB
    m2w64-libxml2-2.9.3        |                4         2.1 MB
    r-rcpproll-0.2.2           |   r342h4c765f1_0         120 KB
    r-rcpp-0.12.13             |   r342h3e881fa_0         3.2 MB
```

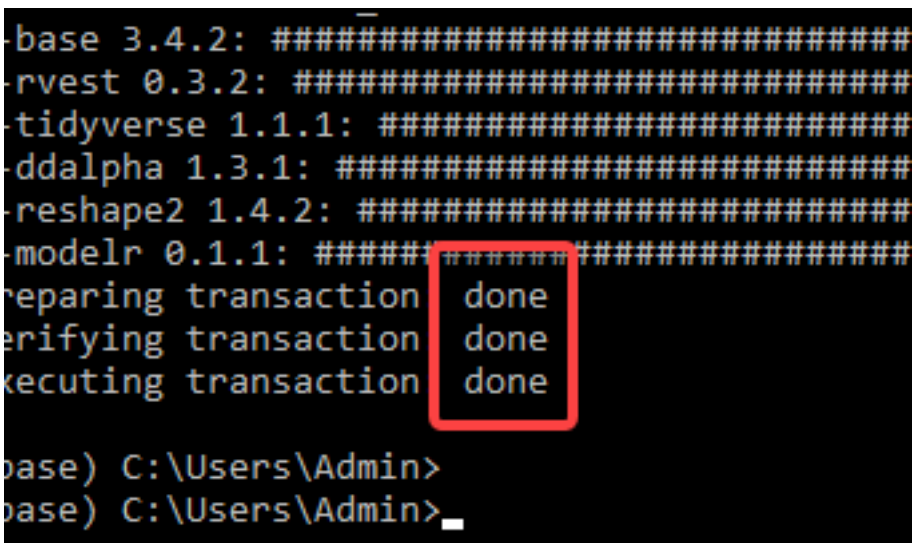
(/images/r_programming/032818_0958_HowtoDownlo30.png)

Step 3) Enter y and hit the return key to start installation



(/images/r_programming/032818_0958_HowtoDownlo31.png)

Step 4) Installation will take time, and you will get done message.



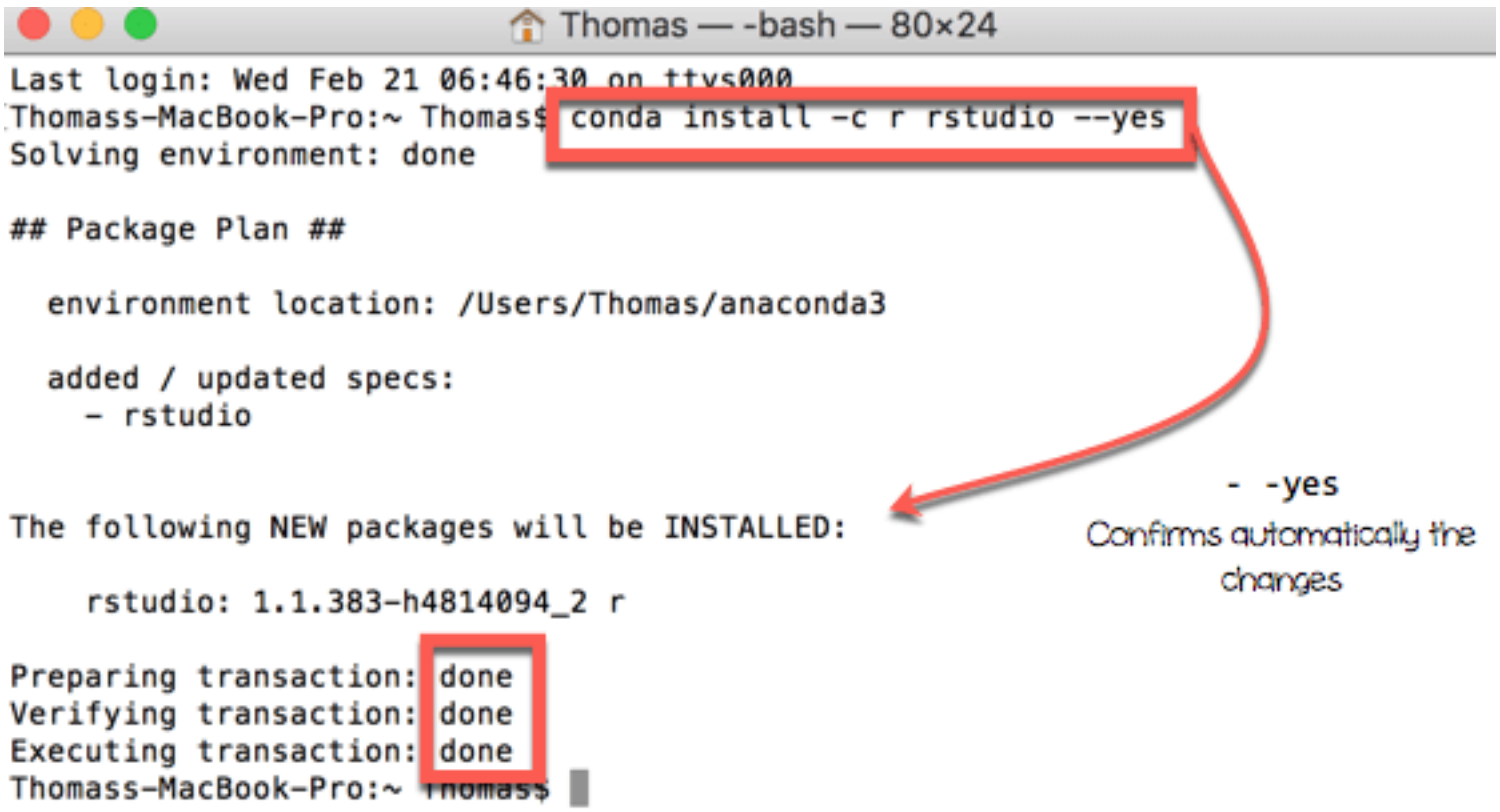
(/images/r_programming/032818_0958_HowtoDownlo32.png)

Install Rstudio

Mac User

In the terminal, write the following code:

```
## In the terminalconda install -c r rstudio --yes
```



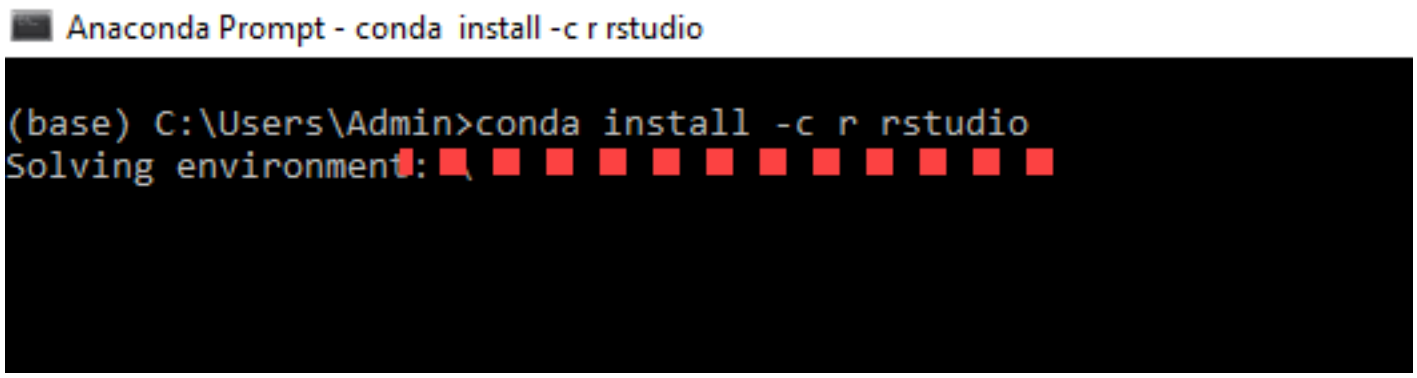
(/images/r_programming/032818_0958_HowtoDownlo33.png)

In the terminal, you should see Executing transaction: done. If so, you have successfully installed **Rstudio**.

You are all set now, congratulation!

Windows User

Step 1) Enter command to install R Studio in the Anaconda prompt



(/images/r_programming/032818_0958_HowtoDownlo34.png)

Step 2) You will be shown a list of packages that will be installed. Enter y

```
    r-yaml:                    2.1.14-r342h209047d_0
    r-zoo:                     1.8_0-r342h7ed1f00_0

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

(/images/r_programming/032818_0958_HowtoDownlo35.png)

Step 3) R Studio will be installed

```
r-rsconnect 0.8.5: ##################################################################################
r-rcurl 1.95_4.8: ###################################################################################
m2w64-p11-kit 0.23.2: ###############################################################################
font-ttf-dejavu-sans-mono 2.37: #####################################################################
font-ttf-source-code-pro 2.030: #####################################################################
Preparing transaction: done
Verifying transaction: done
Executing transaction: | DEBUG menuinst_win32:__init__(199): Menu: name: 'RStudio Desktop ${PLATFORM}', pr
DEBUG menuinst_win32:create(323): Shortcut cmd is C:\Users\Admin\Anaconda3\python.exe, args are ['C:\\User
Library\\bin\\rstudio.exe']
done

(base) C:\Users\Admin>
```

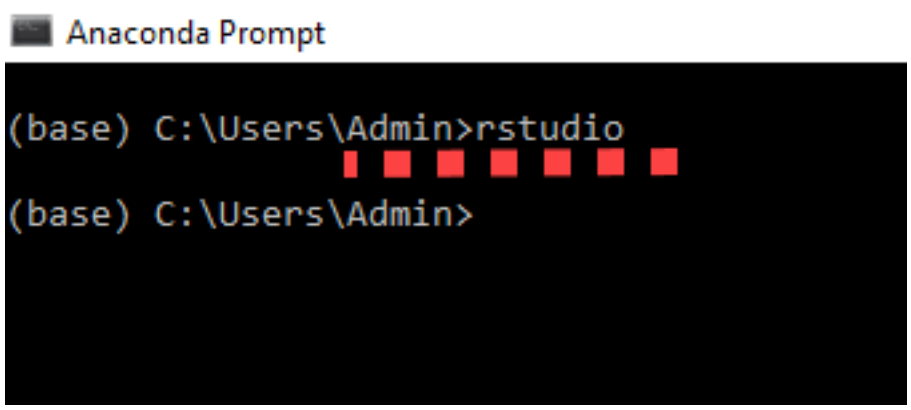
(/images/r_programming/032818_0958_HowtoDownlo36.png)

Warning

Avoid as much as you can to install a library using pip for Python, and R. Conda libraries gather a lot of packages, you don't need to install libraries outside of conda environment.

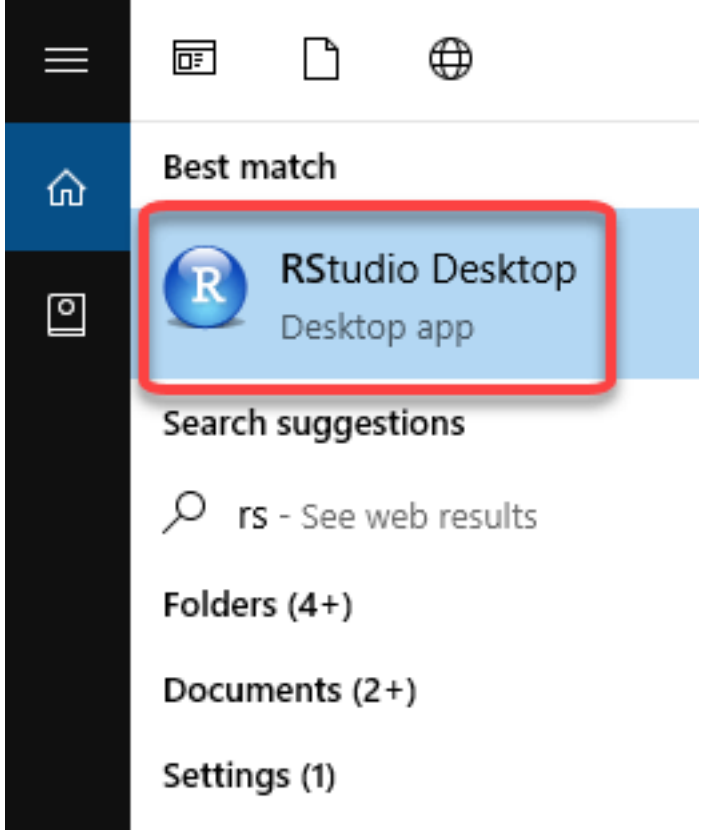
Run Rstudio

Directly run the command line from the terminal to open Rstudio. You open the terminal and write rstudio. You can also use Desktop Shortcut



(/images/r_programming/032818_0958_HowtoDownlo37.png)

Or



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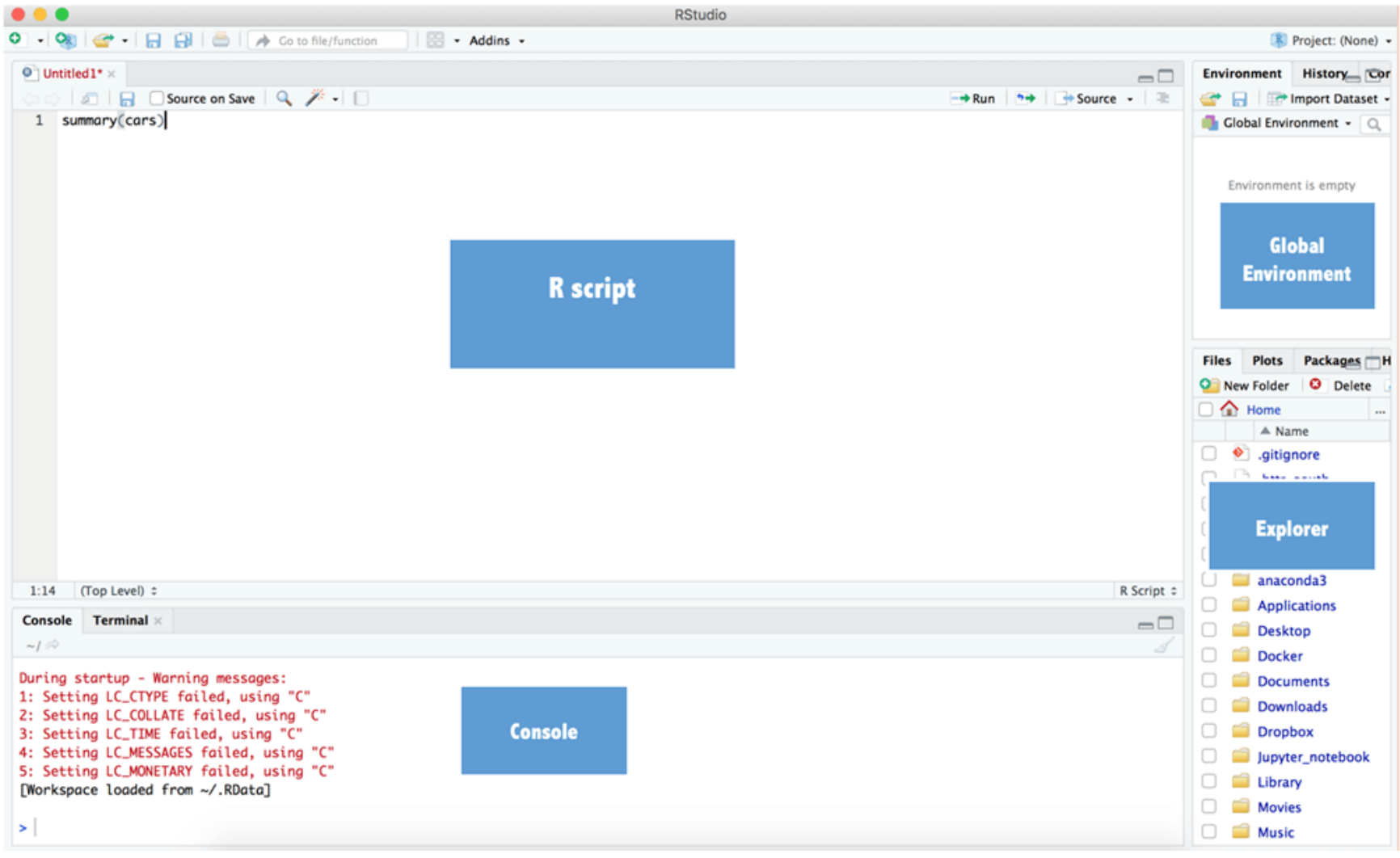
A new window will be opened with **Rstudio**.



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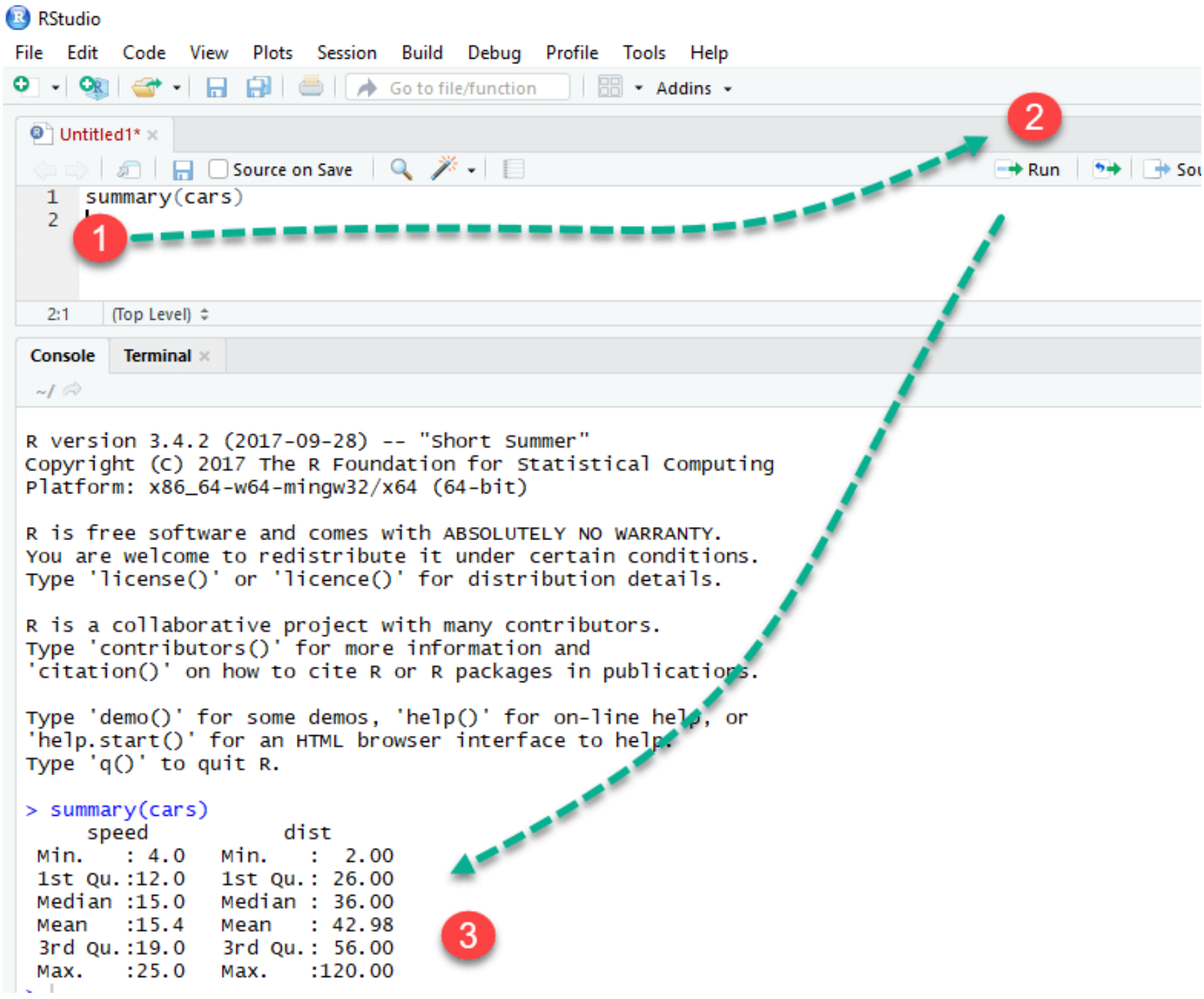
Test

Open Rstudio from the terminal and open a script. Write the following command:

1. ## In Rstudio **summary**(cars)
2. Click Run
3. Check Output



(/images/r_programming/032818_0958_HowtoDownlo40.png)

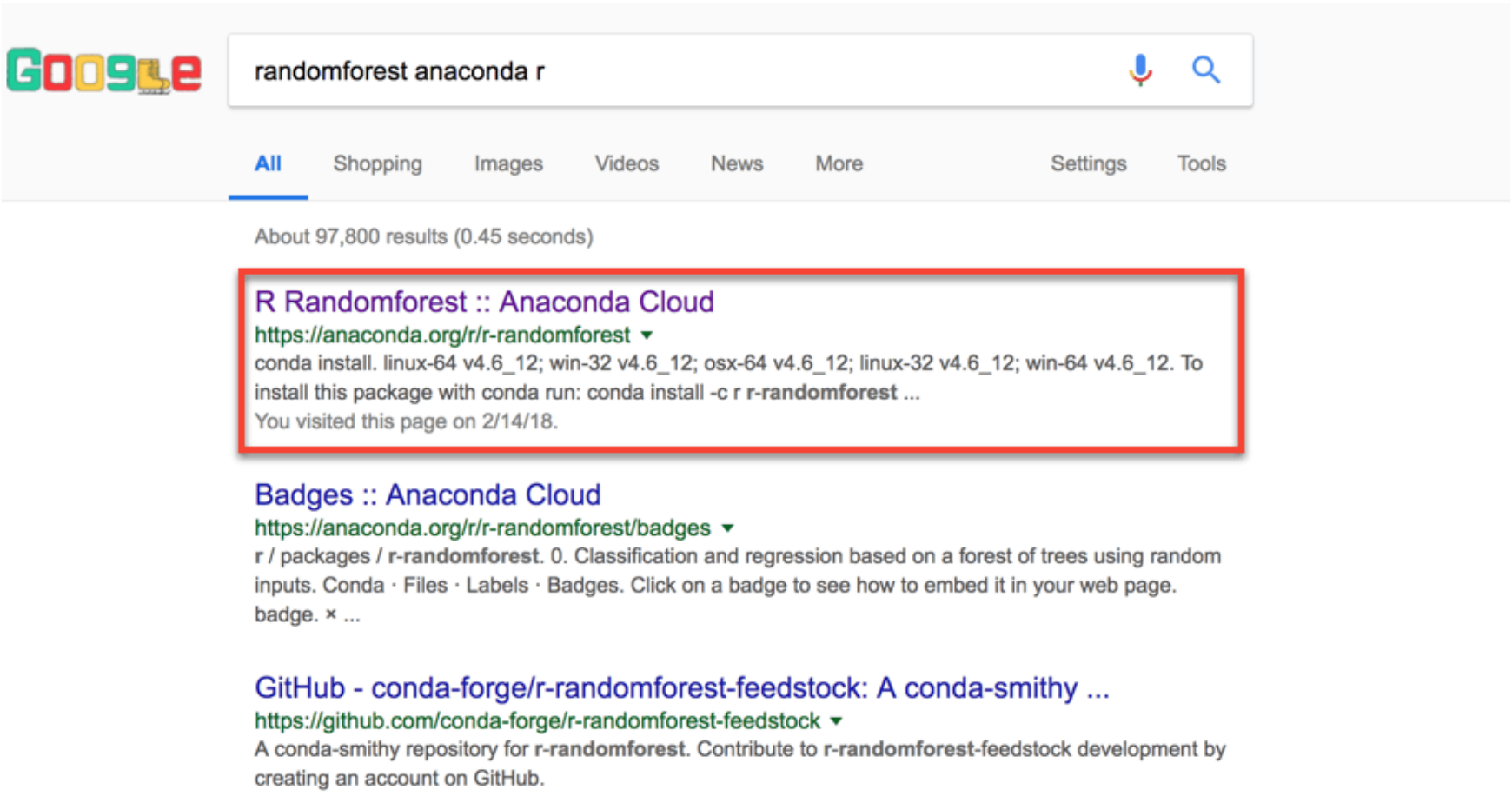
If you can see the summary statistics, it works. You can close Rstudio without saving the files.

Install package

Install package with anaconda is trivial. You go to your favorite browser, type the name of the library followed by **anaconda r**.

(/images/r_programming/032818_0958_HowtoDownlo41.png)

You choose the link that points to anaconda. You copy and paste the library into the terminal.



(/images/r_programming/032818_0958_HowtoDownlo42.png)

For instance, we need to install randomForest for the tutorial on random forest; we go **https://anaconda.org/r/r-randomforest** (https://anaconda.org/r/r-randomforest)**.**

r / packages / r-randomforest 4.6_12

0

Classification and regression based on a forest of trees using random inputs.

Conda | Files | Labels | Badges

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148226 total downloads

Installers

conda install

linux-64 v4.6_12
win-32 v4.6_12
osx-64 v4.6_12
linux-32 v4.6_12
win-64 v4.6_12

To install this package with conda run:

```
conda install -c r r-randomforest
```

(/images/r_programming/032818_0958_HowtoDownlo43.png)

Run conda install -c r r-randomforest --yes from the terminal.

```
Thomass-MacBook-Pro:~ Thomas$ conda install -c r r-randomforest --yes
Solving environment: done

## Package Plan ##

  environment location: /Users/Thomas/anaconda3

  added / updated specs:
    - r-randomforest


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    r-randomforest-4.6_12      |   r342h0f92a3f_4         154 KB  r

The following packages will be UPDATED:

    r-randomforest: 4.6_12-r342h0f92a3f_4 --> 4.6_12-r342h0f92a3f_4 r


Downloading and Extracting Packages
r-randomforest 4.6_12: ################################################ | 100%
Preparing transaction: done
Verifying transaction: done
Executing transaction: done
Thomass-MacBook-Pro:~
```

(/images/r_programming/032818_0958_HowtoDownlo44.png)

The installation is completed.

Note that Thorough this tutorial, you won't need to install many libraries as the most used libraries came with the r-essential conda library. It includes ggplot for the graph and caret for the machine learning project.

Open a library

To run the R function randomForest(), we need to open the library containing the function. In the Rstudio script, we can write library(randomForest)

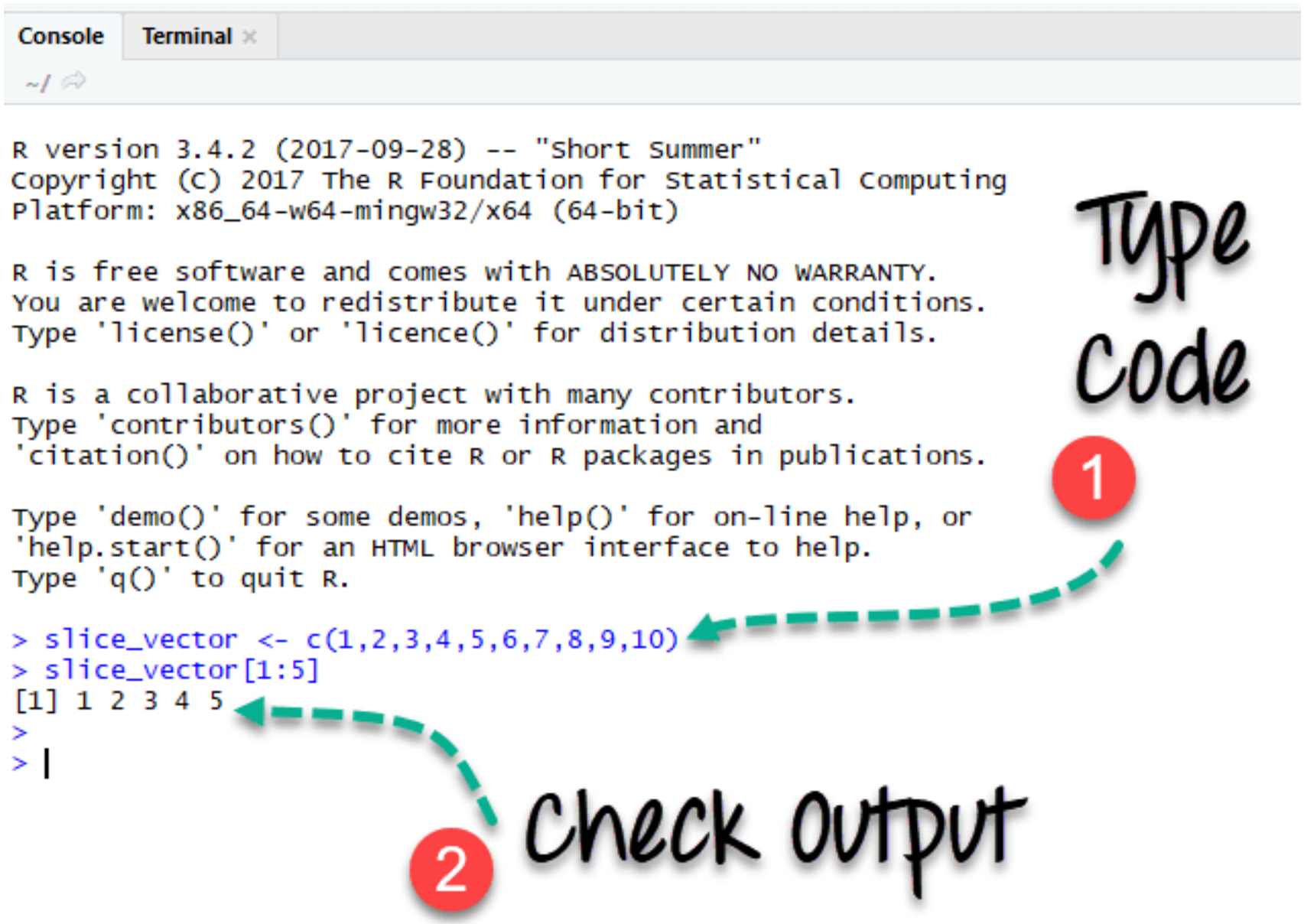
```
## In Rstudiolibrary(randomForest)
## randomForest 4.6-12
## Type rfNews() to see new features/changes/bug fixes.
```

Warning: Avoid as much as possible to open unnecessary packages. You might ended up creating conflicts between libraries.

Run R code

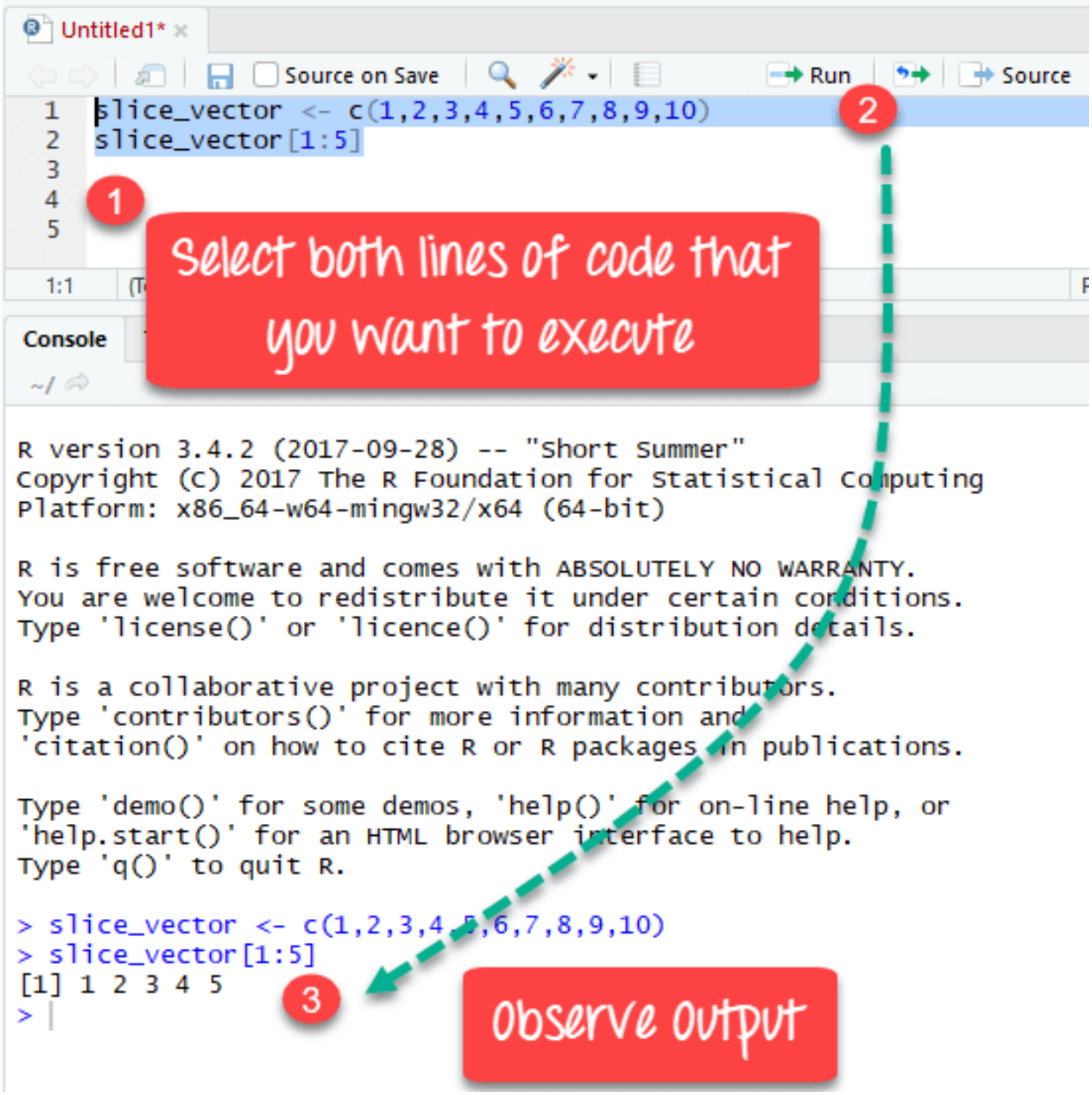
We have two ways to run codes in R

1. We can run the codes inside the Console. Our data will be stored in the Global Environment but no history is recorded. We won't be able to replicate the results once R is closed. We need to write the codes all over again. This method is not recommended if we want to replicate our save our codes



(/images/r_programming/032818_0958_HowtoDownlo45.png)

2. Write the code in the script. We can write as many lines of codes as we want. To run the code, we simple select the rows we want to return. Finally, click on run. We can see the output in the Console. We can save our script and open it later. Our results won't we lost.



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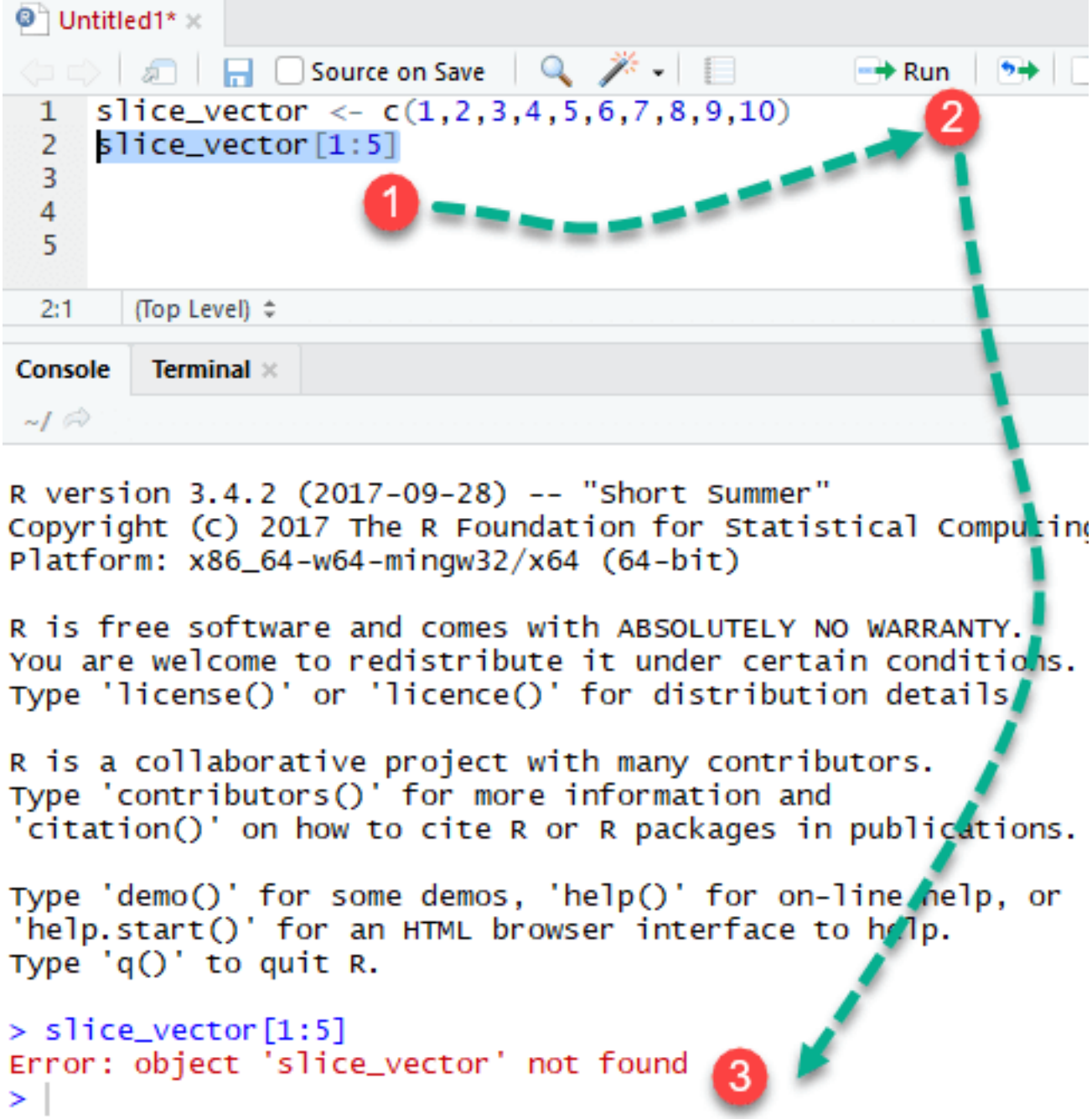
Warning: In we point the cursor at the second row (i.e., slice_vector[1:5]), the Console displays an error. That's, we didn't run the line number 1.



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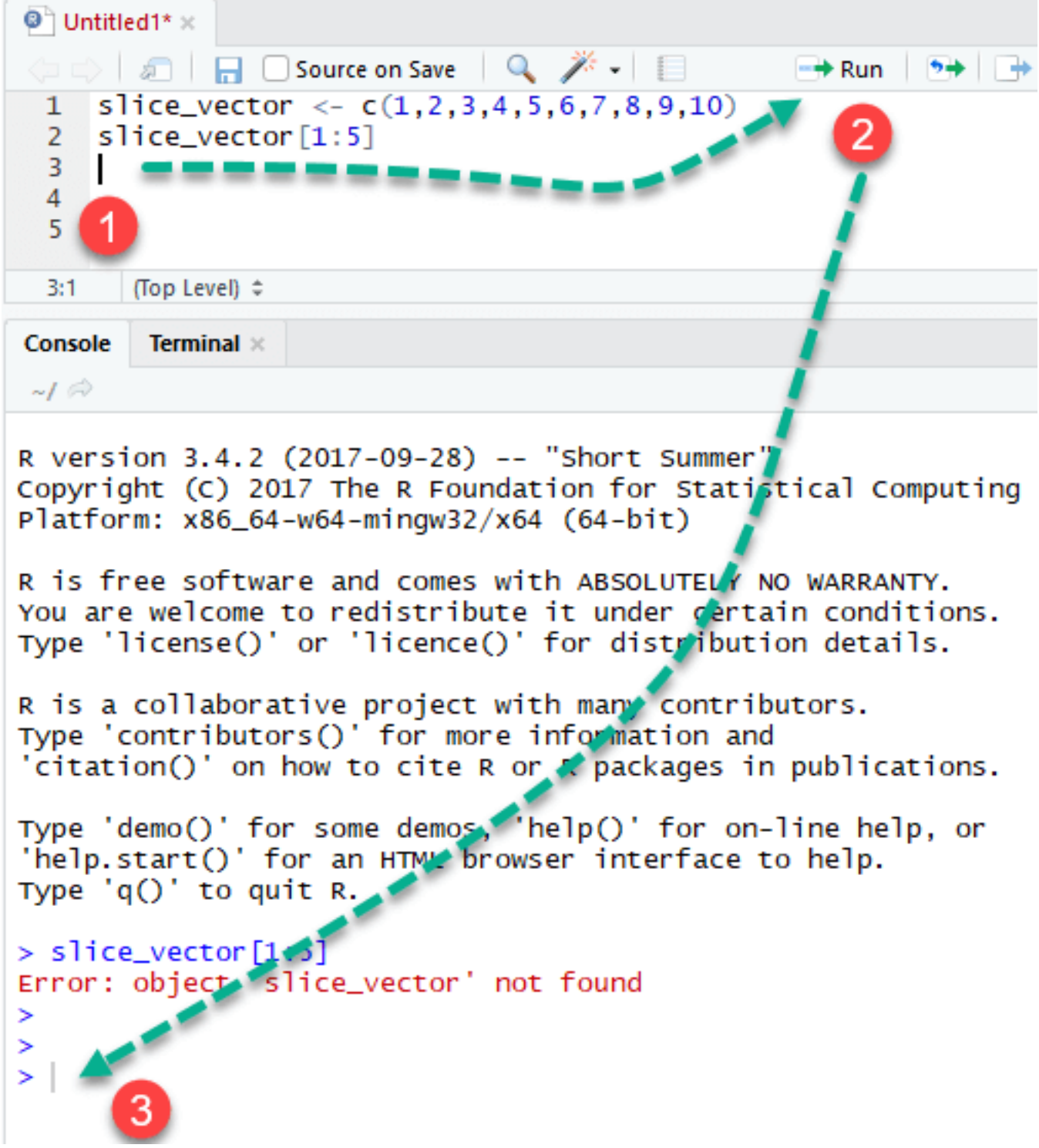
Similarly, if we point the cursor to an empty row and click on run, R return an empty output.



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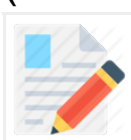

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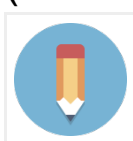

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10) Merge Data Frames in R (/r-merge-data-frames.html)

11) Functions R Programming (/r-functions-programming.html)

12) IF, ELSE, ELIF Statement in R (/r-if-else-elif-statement.html)

13) For Loop in R (/r-for-loop.html)

14) While Loop in R (/r-while-loop.html)

15) apply(), sapply(), tapply() in R (/r-apply-sapply-tapply.html)

16) Import Data into R (/r-import-data.html)

17) Replace Missing Values in R (/r-replace-missing-values.html)

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