

생 초짜를 위한 R

정 태 훈

2014년 4월 15일

제3과. R 데이터 분석

(1) R 스타일 살짝 맛보기

- 여기서 쓸 데이터는 이렇습니다.
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 - 아무 처리도 하지 않은 경우: 4.17, 5.58, 5.18, 6.11, 4.5, 4.61, 5.17, 4.53, 5.33, 5.14
 - 첫번째 처리를 한 경우: 4.81, 4.17, 4.41, 3.59, 5.87, 3.83, 6.03, 4.89, 4.32, 4.69
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- 뭘 어떻게 해야 할까요? 난감하신가요? 뭐, 지금은 그러실 수도 있는데 앞으로 하나씩 단계단계 해결하면 또 그렇게 어려운 것도 아니란 걸 아시게 될 겁니다.

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- R은 항상 데이터를 먼저 넣어주고 그 데이터는 그대로 둔 채 거기에 함수를 적용해서 원하는 값을 얻도록 해야 합니다. 그러니까 앞에서 언급한 데이터를 R에 먼저 넣어주고 평균은 `mean()`, 중간값은 `median()`, 표준편차는 `sd()` 등의 함수를 그 데이터에 적용해 값을 구하는 겁니다.

- 데이터를 입력할 때는 R 콘솔에 바로 입력할 수도 있고 파일에 데이터를 저장한 다음 그 파일을 읽어들이는 수도 있습니다.

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 - `ctrl.avg <- mean(ctrl)`
 - `ctrl.med <- median(ctrl)`
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Console ~/

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>

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Environment

History

Import Dataset

Clear

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Global Environment

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원하는 값을 계산하려면

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여기에 바로 바로 나타납니다
RStudio라서 편리한 게 이런 거죠!

Files Plots Packages Help Viewer

- 하지만 RStudio를 절대 이렇게 쓰지 마십시오! RStudio를 쓰면서 R 콘솔 화면에 바로 손을 대는 건 정말 배우지 못한 무식쟁이나 하는 짓이라고 보시면 됩니다. 배운 사람은 어디까지나 배운 사람답게 써야죠!

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- 그런데 그럼 어떻게 해야 하느냐?

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- 그런데 그럼 어떻게 해야 하느냐?
- 항상 스크립트 파일을 열어서 거기다 하고 싶은 내용을 쓰고 그걸 R에 옮겨서 결과를 얻어야 합니다! 스크립트의 내용을 R에 옮기는 일은 RStudio가 편리하게 해 줍니다. 그래서 사용자는 자신이 하고 싶은 일에만 집중할 수 있습니다.

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- 이렇게 하면 물론 해야 할 작업에만 집중할 수 있다는 것도 있지만 무엇보다 자신이 한 작업에 대한 온전한 기록이 남는다는 부분이 중요합니다. 그래서 언제든지 다시 돌아가 무슨 작업을 했는지 확인할 수 있고 따라서 오류를 확인하거나 혹은 분석의 재현성을 높일 수가 있습니다.

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- 이렇게 말은 했지만 사실 자신의 과거 작업 파일을 들여다 보면서 다시 되짚어 파악하기란 생각 만큼 쉽지 않습니다. 그래서 작업 파일 만드는 경험이 필요하고 무엇보다 작업 파일 중간 중간 많은 내용을 스스로 남기는 습관을 들여야 합니다.

그럼 도대체 어떻게 하라는 거냐 ..?
바로 이렇게 하시면 됩니다.

Go to file/function

Console ~/ ↶

여기를 클릭 합니다.

```
R (6) -- "Good Sport"  
Foundation for Statistical Computing  
Platform: x86_64-apple-darwin10.8.0 (64-bit)
```

```
R is free software and comes with ABSOLUTELY NO WARRANTY.  
You are welcome to redistribute it under certain conditions.  
Type 'license()' or 'licence()' for distribution details.
```

```
Natural language support but running in an English locale
```

```
R is a collaborative project with many contributors.  
Type 'contributors()' for more information and  
'citation()' on how to cite R or R packages in publications.
```

```
Type 'demo()' for some demos, 'help()' for on-line help, or  
'help.start()' for an HTML browser interface to help.  
Type 'q()' to quit R.
```

```
During startup - Warning messages:
```

```
1: Setting LC_CTYPE failed, using "C"  
2: Setting LC_COLLATE failed, using "C"  
3: Setting LC_TIME failed, using "C"  
4: Setting LC_MESSAGES failed, using "C"  
5: Setting LC_PAPER failed, using "C"  
> |
```

Environment History

Import Dataset ▾ Clear ↶

List ▾

Global Environment ▾



Environment is empty

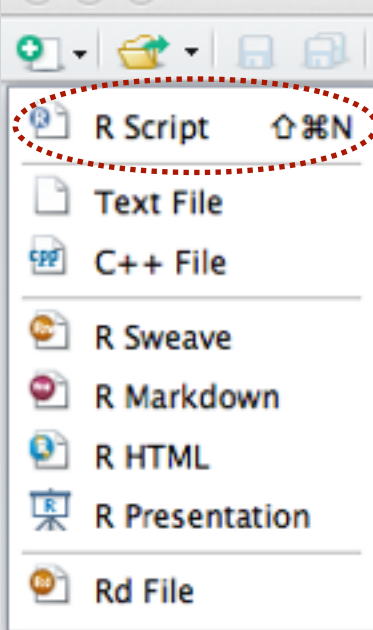
Files Plots Packages Help Viewer

New Folder Delete Rename More ▾

Home

| | ▲ Name | Size | Modified |
|--------------------------|------------------------|--------|----------------------|
| <input type="checkbox"/> | .Rhistory | 2.6 KB | Apr 8, 2014, 4:54 PM |
| <input type="checkbox"/> | Annex | | |
| <input type="checkbox"/> | Applications | | |
| <input type="checkbox"/> | Bin | | |
| <input type="checkbox"/> | CytoscapeConfiguration | | |
| <input type="checkbox"/> | Data | | |
| <input type="checkbox"/> | Data2 | | |
| <input type="checkbox"/> | Desktop | | |
| <input type="checkbox"/> | Documents | | |
| <input type="checkbox"/> | doo | | |
| <input type="checkbox"/> | Downloads | | |
| <input type="checkbox"/> | Dropbox | | |
| <input type="checkbox"/> | ess | | |
| <input type="checkbox"/> | genemania_plugin | | |
| <input type="checkbox"/> | GenMAPP-CS-Data | | |
| <input type="checkbox"/> | gsea_home | | |

이런 작은 창이 뜨면
바로 여기를 클릭 합니다.

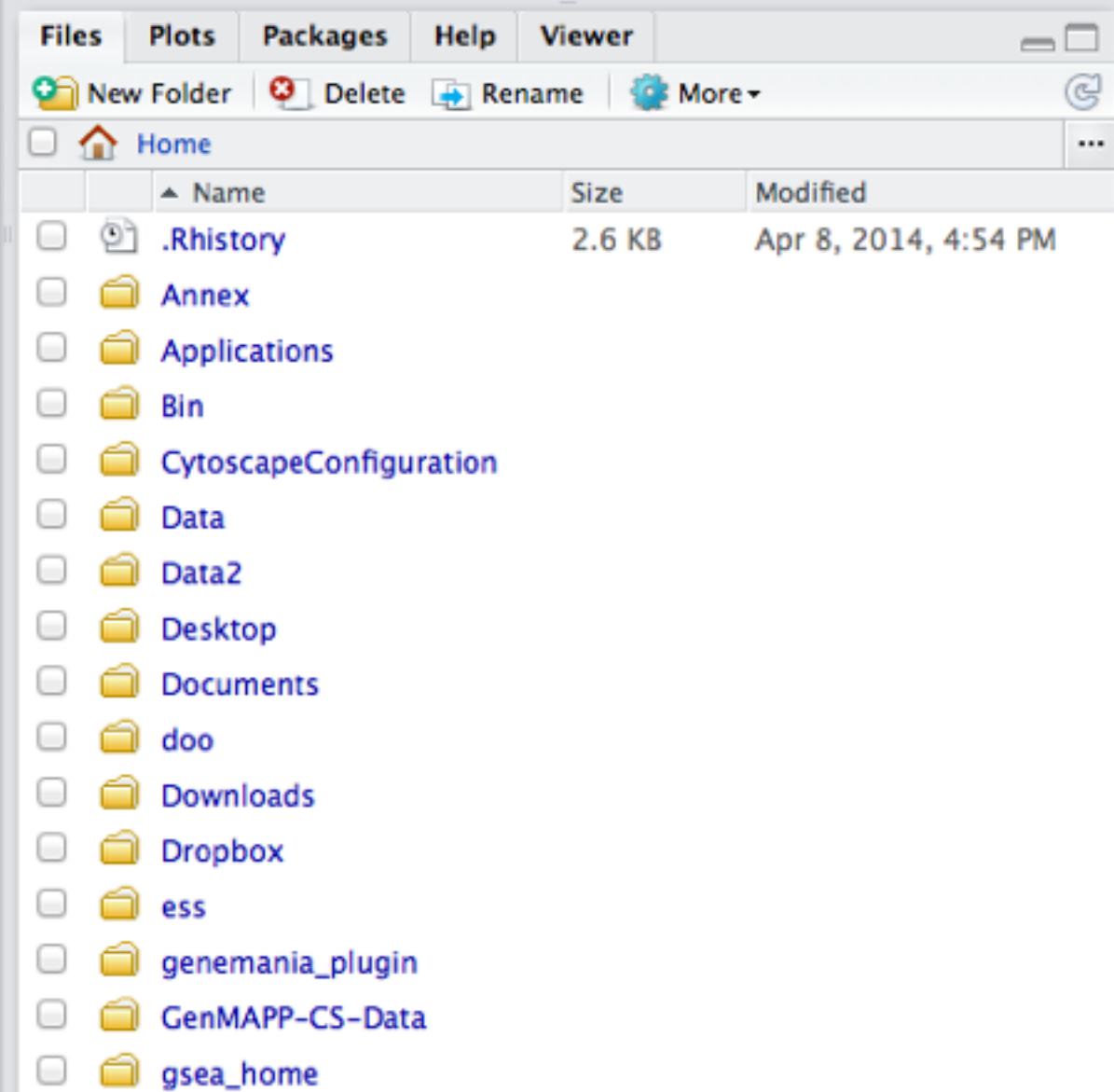
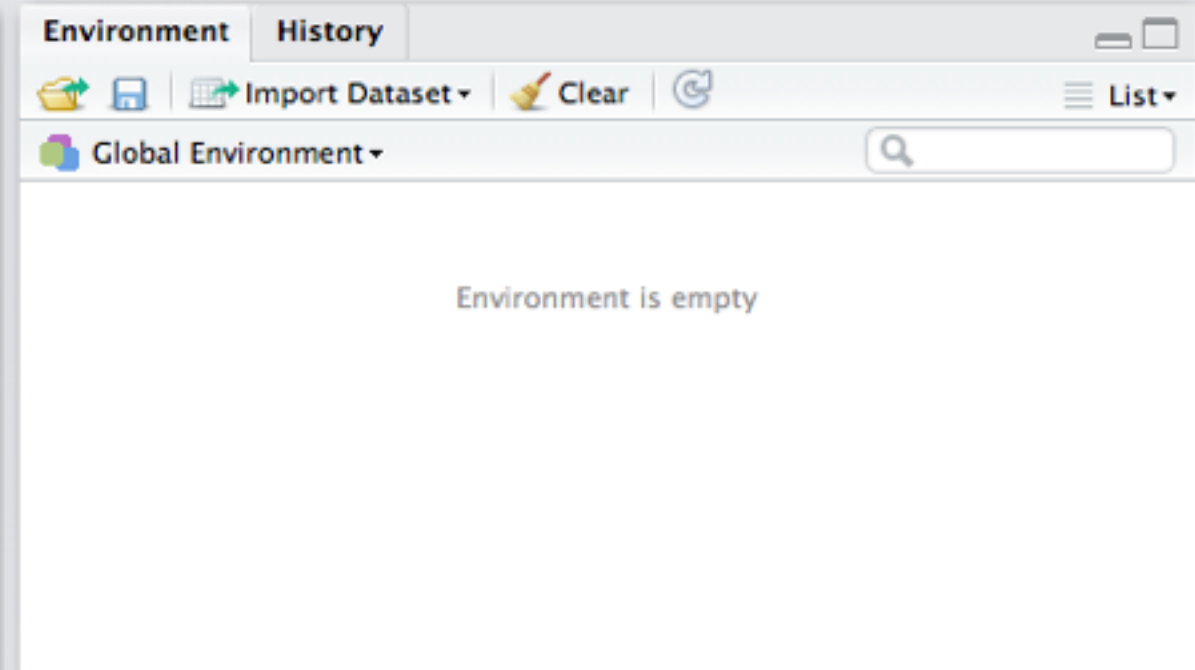


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```



RStudio

Go to file/function

Project: (None)

Untitled1 x

Source on Save

Run

Source

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

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>

짜잔! 바로 이런 빈 파일이 생깁니다.
← 이제 여기에 하고 싶은 작업을 써 넣는 겁니다!
예를 들어 앞에서 했던 작업들은 ...

Go to file/function

Project: (None)

Untitled1*

Source on Save

Run

Source

1 (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10

2

1:56 (Top Level)

R Script

Console ~/

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Environment History

Import Dataset

Clear

List

Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

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RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

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이렇게 입력하고

```
(4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10
```


RStudio

Go to file/function

Project: (None)

Untitled1* x

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Environment History

Import Dataset

Clear

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Environment is empty

Files Plots Packages Help Viewer

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>

여기를 클릭하거나 아니면
“컨트롤 키”와 “리턴 키”를
함께 누르면 됩니다!
(맥에서는 “커맨드 키”와 “리턴 키”)

Go to file/function

Project: (None)

Untitled1*

Source on Save

Run

Source

1 (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10

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2:1

(Top Level)

R Script

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> (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10

[1] 5.032

> |

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

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Viewer

New Folder

Delete

Rename

More

Home

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| <input type="checkbox"/> | genemania_plugin | | |
| <input type="checkbox"/> | GenMAPP-CS-Data | | |
| <input type="checkbox"/> | gsea_home | | |

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

```
1 (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10
2 |
```

Environment

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[1] 5.032
> |
```

이렇게 계산되어 나옵니다!

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

```
1 (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10
2
3 (4.81+4.17+4.41+3.59+5.87+3.83+6.03+4.89+4.32+4.69) / 10
4 (6.31+5.12+5.54+5.5+5.37+5.29+4.92+6.15+5.8+5.26) / 10
5
```

Environment

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RStudio

Go to file/function

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Import Dataset Clear

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Untitled1* x

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Run Source

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5
```

이렇게 여러 줄의 내용을 입력하고
선택해서 하이라이트를 한 다음

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home

| | Name | Size | Modified |
|--------------------------|------------------------|--------|------------------------|
| <input type="checkbox"/> | .Rhistory | 2.7 KB | Apr 16, 2014, 12:00 PM |
| <input type="checkbox"/> | Annex | | |
| <input type="checkbox"/> | Applications | | |
| <input type="checkbox"/> | Bin | | |
| <input type="checkbox"/> | CytoscapeConfiguration | | |
| <input type="checkbox"/> | Data | | |
| <input type="checkbox"/> | Data2 | | |
| <input type="checkbox"/> | Desktop | | |
| <input type="checkbox"/> | Documents | | |
| <input type="checkbox"/> | doo | | |
| <input type="checkbox"/> | Downloads | | |
| <input type="checkbox"/> | Dropbox | | |
| <input type="checkbox"/> | ess | | |
| <input type="checkbox"/> | genemania_plugin | | |
| <input type="checkbox"/> | GenMAPP-CS-Data | | |
| <input type="checkbox"/> | gsea_home | | |

5:1 (Top Level) R Script

Console ~/

Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.

Type 'q()' to quit R.

During startup - Warning messages:

```
1: Setting LC_CTYPE failed, using "C"
2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
> (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10
[1] 5.032
>
```

Untitled1*

Source on Save Run Source

```
1 (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10
```

```
2
```

```
3 (4.81+4.17+4.41+3.59+5.87+3.8
```

```
4 (6.31+5.12+5.54+5.5+5.37+5.29
```

```
5
```

여기를 클릭 하거나
컨트롤 + 리턴
(혹은 커맨드 + 리턴)

5:1 (Top Level)

R Script

Console ~/ ↗

Type 'contributors()' for more information and
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Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

During startup - Warning messages:

1: Setting LC_CTYPE failed, using "C"

2: Setting LC_COLLATE failed, using "C"

3: Setting LC_TIME failed, using "C"

4: Setting LC_MESSAGES failed, using "C"

5: Setting LC_PAPER failed, using "C"

```
> (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10
```

```
[1] 5.032
```

```
>
```

Environment

History

Import Dataset Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder Delete Rename More

Home

| | Name | Size | Modified |
|--------------------------|------------------------|--------|------------------------|
| <input type="checkbox"/> | .Rhistory | 2.7 KB | Apr 16, 2014, 12:00 PM |
| <input type="checkbox"/> | Annex | | |
| <input type="checkbox"/> | Applications | | |
| <input type="checkbox"/> | Bin | | |
| <input type="checkbox"/> | CytoscapeConfiguration | | |
| <input type="checkbox"/> | Data | | |
| <input type="checkbox"/> | Data2 | | |
| <input type="checkbox"/> | Desktop | | |
| <input type="checkbox"/> | Documents | | |
| <input type="checkbox"/> | doo | | |
| <input type="checkbox"/> | Downloads | | |
| <input type="checkbox"/> | Dropbox | | |
| <input type="checkbox"/> | ess | | |
| <input type="checkbox"/> | genemania_plugin | | |
| <input type="checkbox"/> | GenMAPP-CS-Data | | |
| <input type="checkbox"/> | gsea_home | | |

Go to file/function

Project: (None)

Untitled1*

Source on Save

Run

Source

1 (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10

2

3 (4.81+4.17+4.41+3.59+5.87+3.83+6.03+4.89+4.32+4.69) / 10

4 (6.31+5.12+5.54+5.5+5.37+5.29+4.92+6.15+5.8+5.26) / 10

5

5:1

(Top Level)

R Script

Console

'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

During startup - Warning messages:
1: Setting LC_CTYPE failed, using "C"
2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
> (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10
[1] 5.032
> (4.81+4.17+4.41+3.59+5.87+3.83+6.03+4.89+4.32+4.69) / 10
[1] 4.661
> (6.31+5.12+5.54+5.5+5.37+5.29+4.92+6.15+5.8+5.26) / 10
[1] 5.526
> |

Environment

History

Import Dataset

Clear

List

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home

| | Name | Size | Modified |
|--------------------------|------------------------|--------|------------------------|
| <input type="checkbox"/> | .Rhistory | 2.7 KB | Apr 16, 2014, 12:00 PM |
| <input type="checkbox"/> | Annex | | |
| <input type="checkbox"/> | Applications | | |
| <input type="checkbox"/> | Bin | | |
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| <input type="checkbox"/> | Desktop | | |
| <input type="checkbox"/> | Documents | | |
| <input type="checkbox"/> | doo | | |
| <input type="checkbox"/> | Downloads | | |
| <input type="checkbox"/> | Dropbox | | |
| <input type="checkbox"/> | ess | | |
| <input type="checkbox"/> | genemania_plugin | | |
| <input type="checkbox"/> | GenMAPP-CS-Data | | |
| <input type="checkbox"/> | gsea_home | | |

RStudio

Go to file/function

Project: (None)

Environment History

Import Dataset Clear

Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home

| Name | Size | Modified |
|------------------------|--------|------------------------|
| .Rhistory | 2.7 KB | Apr 16, 2014, 12:00 PM |
| Annex | | |
| Applications | | |
| Bin | | |
| CytoscapeConfiguration | | |
| Data | | |
| Data2 | | |
| Desktop | | |
| Documents | | |
| doo | | |
| Downloads | | |
| Dropbox | | |
| GenMAPP-CS-Data | | |
| gsea_home | | |

5:1 (Top Level) R Script

Console ~/

'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

During startup - Warning messages:

1: Setting LC_CTYPE failed, using "C"
2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"

```
> (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10  
[1] 5.032  
> (4.81+4.17+4.41+3.59+5.87+3.83+6.03+4.89+4.32+4.69) / 10  
[1] 4.661  
> (6.31+5.12+5.54+5.5+5.37+5.29+4.92+6.15+5.8+5.26) / 10  
[1] 5.526  
>
```

← 이렇게 한계선에 계산되어 나옵니다!

Untitled1*
Source on Save
Run
Source

```
1 (4.17+5.58+5.18+6.11+4.5+4.61+5.17+4.53+5.33+5.14) / 10
2
3 (4.81+4.17+4.41+3.59+5.87+3.83+6.03+4.89+4.32+4.69) / 10
4 (6.31+5.12+5.54+5.5+5.37+5.29+4.92+6.15+5.8+5.26) / 10
5
```

5:1 (Top Level)

Environment
History
Import Dataset
Clear
List

Global Environment
Environment is empty

Help
Viewer
Rename
More

| | Size | Modified |
|--|--------|------------------------|
| | 2.7 KB | Apr 16, 2014, 12:00 PM |

Console
~/

```
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

During startup - Warning messages:
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[1] 4.661
> (6.31+5.12+5.54+5.5+5.37+5.29+4.92+6.15+5.8+5.26) / 10
[1] 5.526
>
```

Applications
Bin
CytoscapeConfiguration
Data
Data2
Desktop
Documents
doo
Downloads
Dropbox
ess
genemania_plugin
GenMAPP-CS-Data
gsea_home

그러니까 이렇게 파일을 이용하면
작업도 쉬워지고 작업내용도 남게 되니까
여러 모로 도움이 되는 겁니다!

- 이번엔 파일에 데이터를 각각 `ctrl.txt`, `trt1.txt`, `trt2.txt` 등에 넣어줬다고 생각해 보겠습니다.
- 예를 들어 숫자 개수가 여기처럼 열 개 남짓이라면 R에 바로 넣는다 싶을 수도 있지만 개수가 더 늘어나면 그렇게 할 수 없습니다. 그럴 땐 파일에 저장해야 합니다. 물론 이 경우처럼 적당한 개수라면 사람이 직접 파일에 넣을 수도 있을 거고 그게 아니라면 프로그램이 넣게 만들 수도 있습니다.
- 이 땐 가급적이면 한 줄에 숫자 하나씩만 넣으십시오. 굳이 이렇게 하지 않아도 데이터만 구분이 된다면 R은 상관 없지만 사람이 헛갈릴 수 있으니까요.
- 그런 다음 `scan()` 함수를 써서 내용을 R에 불러들입니다.
- 이 후의 과정은 앞과 같겠죠. 그럼 한 번 볼까요?

이 예에서 파일이 있는 폴더는
“Dropbox/codes/Resource”입니다만
여러분들이 파일을 제 웹 사이트에서
다운로드 받으셨다면
여러분들의 경우는 “Downloads”
폴더일 가능성이 아주 높습니다.

plantgrowth,ctrl.txt — Resource

plantgrowth,ctrl.txt plantgrowth,trt1.txt plantgrowth,trt2.txt

| | |
|----|------|
| 1 | 4.17 |
| 2 | 5.58 |
| 3 | 5.18 |
| 4 | 6.11 |
| 5 | 4.5 |
| 6 | 4.61 |
| 7 | 5.17 |
| 8 | 4.53 |
| 9 | 5.33 |
| 10 | 5.14 |
| 11 | |

plantgrowth,ctrl.txt

plantgrowth,trt1.txt — Resource

plantgrowth,ctrl.txt plantgrowth,trt1.txt plantgrowth,trt2.txt

| | |
|----|------|
| 1 | 4.81 |
| 2 | 4.17 |
| 3 | 4.41 |
| 4 | 3.59 |
| 5 | 5.87 |
| 6 | 3.83 |
| 7 | 6.03 |
| 8 | 4.89 |
| 9 | 4.32 |
| 10 | 4.69 |
| 11 | |

plantgrowth,trt1.txt

plantgrowth,trt2.txt — Resource

plantgrowth,ctrl.txt plantgrowth,trt1.txt plantgrowth,trt2.txt

| | |
|----|------|
| 1 | 6.31 |
| 2 | 5.12 |
| 3 | 5.54 |
| 4 | 5.5 |
| 5 | 5.37 |
| 6 | 5.29 |
| 7 | 4.92 |
| 8 | 6.15 |
| 9 | 5.8 |
| 10 | 5.26 |
| 11 | |

plantgrowth,trt2.txt

Line: 11 Plain Text Tab Size: 4

이 예에서 파일이 있는 폴더는
“Dropbox/codes/Resource”입니다만
여러분들이 파일을 제 웹 사이트에서
다운로드 받으셨다면
여러분들의 경우는 “Downloads”
폴더일 가능성이 아주 높습니다.

파일은 Dropbox/codes/Resource 폴더에 있고
제가 작업하는 위치는 그냥 홈 폴더입니다.
이렇게 다르면 번거로운 점이 있을 수 있습니다. 그래서
우선 작업 위치를 파일이 들어 있는 폴더로 바꾸겠습니다.

Go to file/function

Project: (None)

Untitled1 x

Source on Save

Run

Source

1

1:1

(Top Level)

R Script

Console ~/

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
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Type 'demo()' for some demos, 'help()' for on-line help, or
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During startup - Warning messages:
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3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
>

Environment

History

Import Dataset

Clear

List

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home

| | Name | Size | Modified |
|--------------------------|------------------------|--------|----------------------|
| <input type="checkbox"/> | .Rhistory | 2.6 KB | Apr 8, 2014, 4:54 PM |
| <input type="checkbox"/> | Annex | | |
| <input type="checkbox"/> | Applications | | |
| <input type="checkbox"/> | Bin | | |
| <input type="checkbox"/> | CytoscapeConfiguration | | |
| <input type="checkbox"/> | Data | | |
| <input type="checkbox"/> | Data2 | | |
| <input type="checkbox"/> | Desktop | | |
| <input type="checkbox"/> | Documents | | |
| <input type="checkbox"/> | doo | | |
| <input type="checkbox"/> | Downloads | | |
| <input type="checkbox"/> | Dropbox | | |
| <input type="checkbox"/> | ess | | |
| <input type="checkbox"/> | genemania_plugin | | |
| <input type="checkbox"/> | GenMAPP-CS-Data | | |
| <input type="checkbox"/> | gsea_home | | |

RStudio

Go to file/function

Project: (None)

Untitled1 x

Source on Save

Run

Source

1

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home

| | Name | Size | Modified |
|--------------------------|------------------------|--------|----------------------|
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| <input type="checkbox"/> | doo | | |
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| <input type="checkbox"/> | ess | | |
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3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
>

저는 여기를 클릭 합니다.

RStudio

Go to file/function

Project: (None)

Untitled1 x

Source on Save

Run

Source

1

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home

| | Name | Size | Modified |
|--------------------------|------------------------|--------|----------------------|
| <input type="checkbox"/> | .Rhistory | 2.6 KB | Apr 8, 2014, 4:54 PM |
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| <input type="checkbox"/> | Applications | | |
| <input type="checkbox"/> | Bin | | |
| <input type="checkbox"/> | CytoscapeConfiguration | | |
| <input type="checkbox"/> | Data | | |
| <input type="checkbox"/> | Data2 | | |
| <input type="checkbox"/> | Desktop | | |
| <input type="checkbox"/> | Documents | | |
| <input type="checkbox"/> | doo | | |
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| <input type="checkbox"/> | Dropbox | | |
| <input type="checkbox"/> | ess | | |
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| <input type="checkbox"/> | GenMAPP-CS-Data | | |
| <input type="checkbox"/> | gsea_home | | |

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5: Setting LC_PAPER failed, using "C"
>

여러분들은 아마도 여기 짤?

Go to file/function

Project: (None)

Untitled1*

Source on Save

Run

Source

1

1:1

(Top Level)

R Script

Console

R is a collaborative project with many contributors.
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>

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox

| | Name | Size | Modified |
|--|---|----------|-----------------------|
| | .. | | |
| | BareGits | | |
| | Classes | | |
| | Codes | | |
| | Docs | | |
| | Getting Started.pdf | 124.8 KB | Nov 2, 2010, 11:54 AM |
| | Icon | 0 B | Sep 6, 2011, 2:43 PM |
| | iPad intro.pdf | 203.3 KB | Nov 12, 2010, 2:26 PM |
| | iPhone intro.pdf | 307.8 KB | Nov 11, 2010, 2:15 PM |
| | Lab_meeting_schedule_Updated_10-03-14.xls | 28 KB | Apr 14, 2014, 3:00 PM |
| | NotesPlus | | |
| | OmmWriter | | |
| | Papers | | |
| | ... | | |

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox

Name

Size

Modified

..

BareGits

Classes

Codes

Docs

Getting Started.pdf

124.8 KB

Nov 2, 2010, 11:54 AM

Icon

0 B

Sep 6, 2011, 2:43 PM

iPad intro.pdf

203.3 KB

Nov 12, 2010, 2:26 PM

iPhone intro.pdf

307.8 KB

Nov 11, 2010, 2:15 PM

Lab_meeting_schedule_Updated_10-03-14.xls

28 KB

Apr 14, 2014, 3:00 PM

NotesPlus

OmmWriter

Papers

1:1

(Top Level)

R Script

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3: Setting LC_TIME failed, using "C"

4: Setting LC_MESSAGES failed, using "C"

5: Setting LC_PAPER failed, using "C"

>

경로가 바뀌었습니다.

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

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Home > Dropbox

| Name | Size | Modified |
|---|----------|-----------------------|
| .. | | |
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| Papers | | |
| ... | | |

Console ~/ ↶

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- 5: Setting LC_PAPER failed, using "C"

>

저는 다시 여기를 클릭 합니다.

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

1

Environment

History

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes

| | Name | Size | Modified |
|--------------------------|-------------|------|----------|
| | .. | | |
| <input type="checkbox"/> | Pics | | |
| <input type="checkbox"/> | R4CL1.key | | |
| <input type="checkbox"/> | R4CL2,0.key | | |
| <input type="checkbox"/> | R4CL2,1.key | | |
| <input type="checkbox"/> | R4CL3,0.key | | |
| <input type="checkbox"/> | R4CL3,1.key | | |
| <input type="checkbox"/> | Resource | | |

Console ~/

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

During startup - Warning messages:
1: Setting LC_CTYPE failed, using "C"
2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
>

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

1

경로가 또 바뀌었습니다.

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes

Name

Size

Modified

..

Pics

R4CL1.key

R4CL2,0.key

R4CL2,1.key

R4CL3,0.key

R4CL3,1.key

Resource

Console

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Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

During startup - Warning messages:

1: Setting LC_CTYPE failed, using "C"

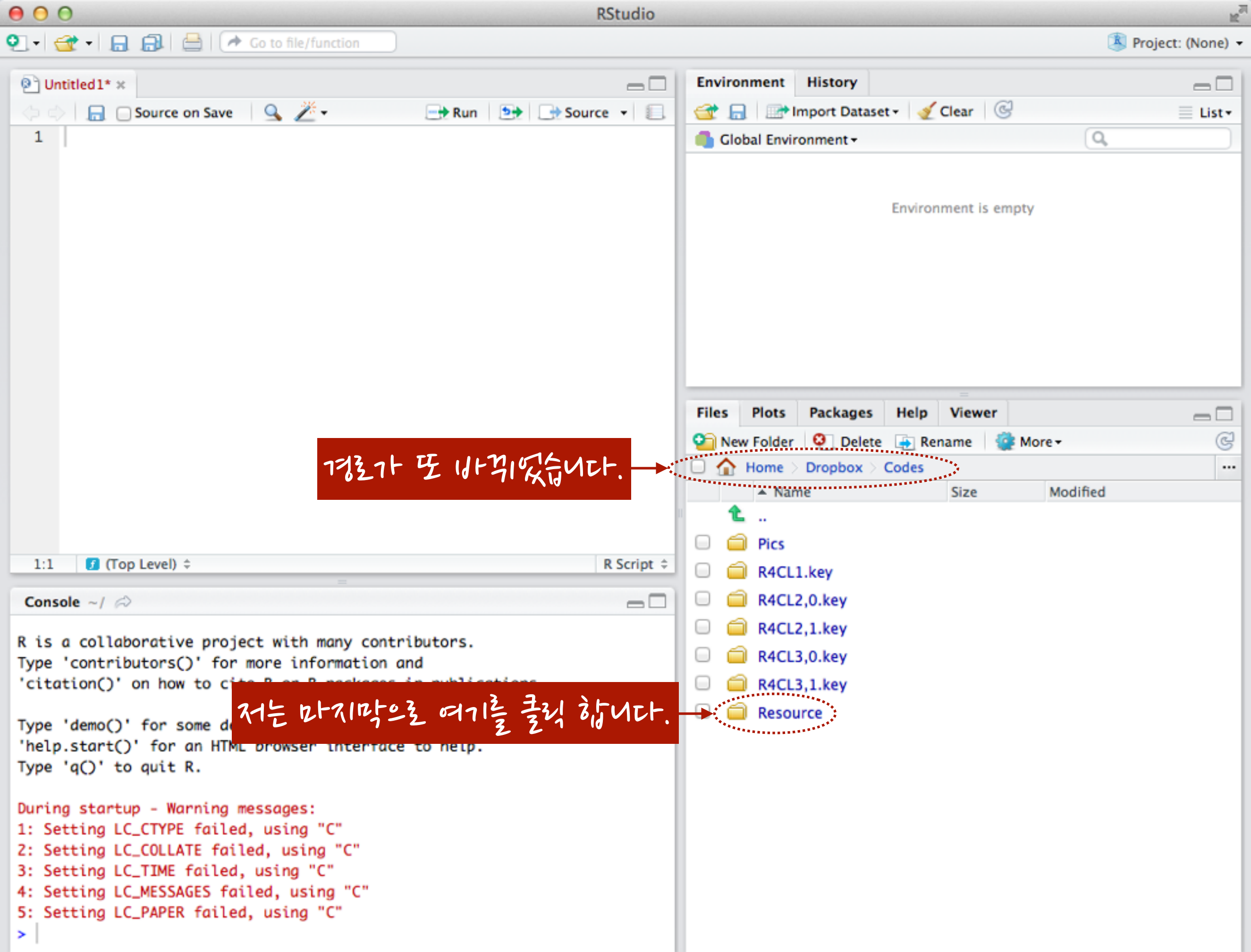
2: Setting LC_COLLATE failed, using "C"

3: Setting LC_TIME failed, using "C"

4: Setting LC_MESSAGES failed, using "C"

5: Setting LC_PAPER failed, using "C"

>



경로가 또 바뀌었습니다.

저는 마지막으로 여기를 클릭 합니다.

Go to file/function

Project: (None)

Untitled1*

Source on Save

Run

Source

1

1:1

(Top Level)

R Script

Console

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3: Setting LC_TIME failed, using "C"
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5: Setting LC_PAPER failed, using "C"
>

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt1.txt | 50 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt2.txt | 48 B | Apr 15, 2014, 11:23 AM |
| | plantgrowth.txt | 948 B | Apr 15, 2014, 1:41 PM |
| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

1

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
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| | plantgrowth,trt2.txt | 48 B | Apr 15, 2014, 11:23 AM |
| | plantgrowth.txt | 948 B | Apr 15, 2014, 1:41 PM |
| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

1:1 (Top Level) R Script

Console ~/

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During startup - Warning messages:

- 1: Setting LC_CTYPE failed, using "C"
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- 3: Setting LC_TIME failed, using "C"
- 4: Setting LC_MESSAGES failed, using "C"
- 5: Setting LC_PAPER failed, using "C"

>

최종 목적 폴더입니다.

Go to file/function

Untitled1* x

Source on Save

Run

Source

1

1:1

(Top Level)

R Script

Console

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3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
>

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
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| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

파일들도 보입니다

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

1

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Codes > Resource

Size

Modified

plantgrowth,ctrl.txt 49 B Apr 15, 2014, 11:22 AM

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test.txt 36 B Apr 16, 2014, 9:15 AM

Console ~/

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3: Setting LC_TIME failed, using "C"

4: Setting LC_MESSAGES failed, using "C"

5: Setting LC_PAPER failed, using "C"

>

이제 이 폴더를 작업 위치로 만들겠습니다.

Go to file/function

Project: (None)

Untitled1*

Source on Save

Run

Source

1

1:1

(Top Level)

R Script

Console

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5: Setting LC_PAPER failed, using "C"
>

Environment

History

Import Dataset

Clear

List

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

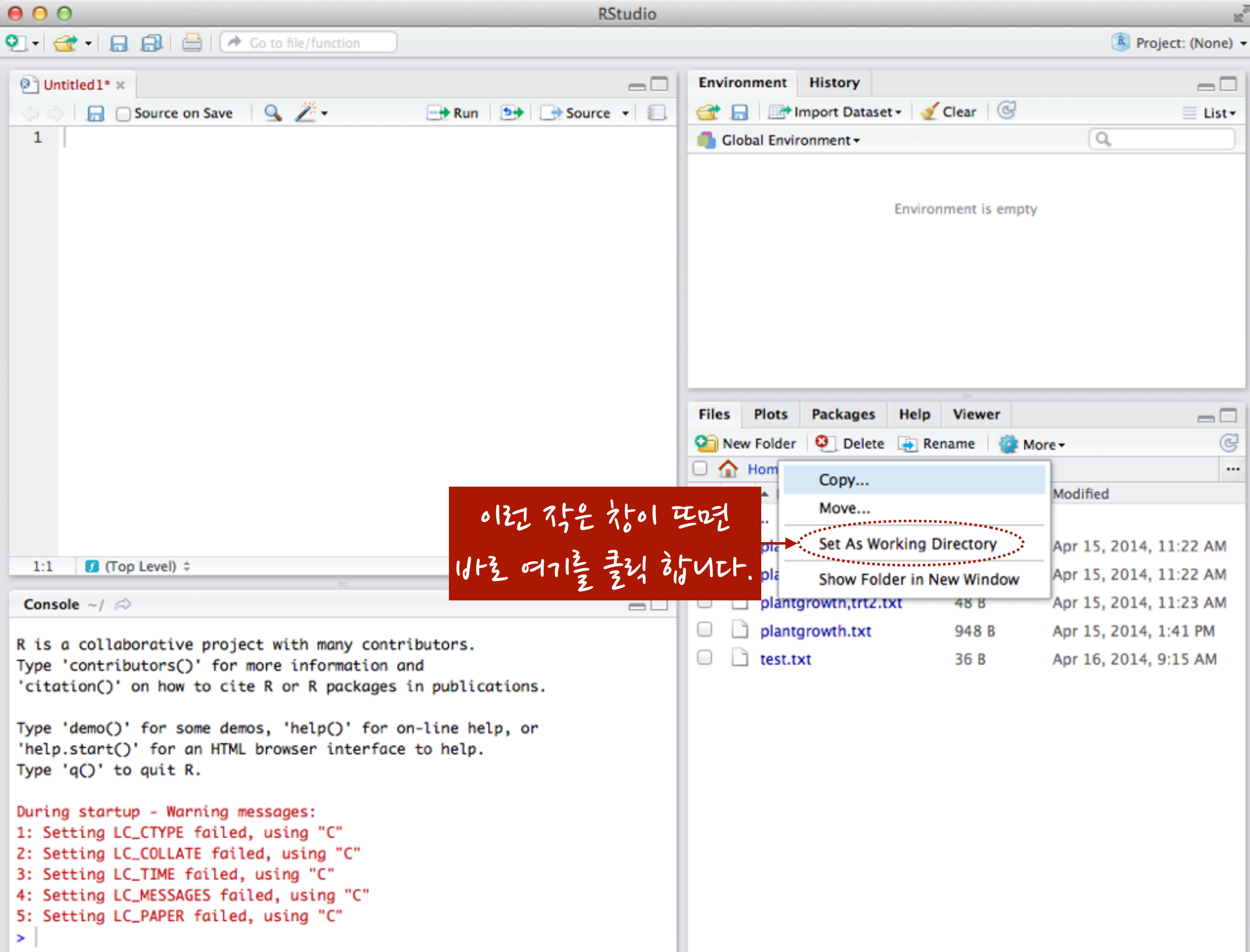
Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt1.txt | 50 B | Apr 15, 2014, 11:22 AM |
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| | plantgrowth.txt | 948 B | Apr 15, 2014, 1:41 PM |
| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

여기를 클릭 합니다.



RStudio

Go to file/function

Project: (None)

Untitled1*

Source on Save

Run

Source

1

Environment

History

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
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Console ~/Dropbox/codes/Resource/

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During startup - Warning messages:
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2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
> setwd("~/Dropbox/Codes/Resource")
>

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

1

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt1.txt | 50 B | Apr 15, 2014, 11:22 AM |
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- 2: Setting LC_COLLATE failed, using "C"
- 3: Setting LC_TIME failed, using "C"
- 4: Setting LC_MESSAGES failed, using "C"
- 5: Setting LC_PAPER failed, using "C"

> setwd("~/Dropbox/Codes/Resource")

> |

이렇게 완료되었습니다!

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

1 ctrl <- scan("plantgrowth,ctrl.txt")

Environment

History

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
| | .Rhistory | 3 KB | Apr 16, 2014, 11:56 AM |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt1.txt | 50 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt2.txt | 48 B | Apr 16, 2014, 12:26 PM |
| | plantgrowth.txt | 948 B | Apr 15, 2014, 1:41 PM |
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Console ~/

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2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
> |

RStudio

Go to file/function

Project: (None)

Untitled1*

Source on Save

1 ctrl <- scan("plantgrowth,ctrl.txt")

Environment

History

Import Dataset

Clear

Global Environment

Environment is empty

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
| | .Rhistory | 3 KB | Apr 16, 2014, 11:56 AM |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
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Console

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2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
>

이렇게 입력하고

Go to file/function

Run

1 ctrl <- scan("plantgrowth,ctrl.txt")

여기를 클릭 합니다. 그러면 ...

EnvironmentHistory

Global Environment

Environment is empty

FilesPlotsPackagesHelpViewer

New FolderDeleteRenameMore

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|-------|------------------------|
| | .. | | |
| | .Rhistory | 3 KB | Apr 16, 2014, 11:56 AM |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
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3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
> |

Go to file/function

Project: (None)

Untitled1*

Source on Save

Run

Source

```
1 ctrl <- scan("plantgrowth,ctrl.txt")
2 |
```

2:1

(Top Level)

R Script

Console ~/Dropbox/codes/Resource/

'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

During startup - Warning messages:

1: Setting LC_CTYPE failed, using "C"

2: Setting LC_COLLATE failed, using "C"

3: Setting LC_TIME failed, using "C"

4: Setting LC_MESSAGES failed, using "C"

5: Setting LC_PAPER failed, using "C"

> setwd("~/Dropbox/Codes/Resource")

> ctrl <- scan("plantgrowth,ctrl.txt")

Read 10 items

> |

Environment

History

Import Dataset

Clear

List

Global Environment

Values

| | | | | | | | | |
|------|------------|------|------|------|------|-----|------|-----|
| ctrl | num [1:10] | 4.17 | 5.58 | 5.18 | 6.11 | 4.5 | 4.61 | ... |
|------|------------|------|------|------|------|-----|------|-----|

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|--------|------------------------|
| | .. | | |
| | .Rhistory | 2.9 KB | Apr 16, 2014, 1:45 PM |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt1.txt | 50 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt2.txt | 48 B | Apr 16, 2014, 12:26 PM |
| | plantgrowth.txt | 948 B | Apr 15, 2014, 1:41 PM |
| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

```
1 ctrl <- scan("plantgrowth,ctrl.txt")
2 |
```

Environment

History

Import Dataset

Clear

List

Global Environment

Values

| | | | | | | | | |
|------|------------|------|------|------|------|-----|------|-----|
| ctrl | num [1:10] | 4.17 | 5.58 | 5.18 | 6.11 | 4.5 | 4.61 | ... |
|------|------------|------|------|------|------|-----|------|-----|

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|--------|------------------------|
| | .. | | |
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| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

Console ~/Dropbox/codes/Resource/

'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or 'help.start()' for an HTML browser interface to help.

Type 'q()' to quit R.

During startup - Warning messages:

```
1: Setting LC_CTYPE failed, using "C"
2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
> setwd("~/Dropbox/Codes/Resource")
> ctrl <- scan("plantgrowth,ctrl.txt")
Read 10 items
> |
```

이렇게 몇 개 항목을 읽어들이었다고 나오면서

Untitled1* x

Source on Save

Run

Source

```
1 ctrl <- scan("plantgrowth,ctrl.txt")
2 |
```

“이런 변수가 새로 생겼다”고 여기 표시됩니다.
RStudio를 쓰는 이점이 바로 이런 거죠!

Environment

History

Import Dataset

Clear

List

Global Environment

Values

| | | | | | | | | |
|------|------------|------|------|------|------|-----|------|-----|
| ctrl | num [1:10] | 4.17 | 5.58 | 5.18 | 6.11 | 4.5 | 4.61 | ... |
|------|------------|------|------|------|------|-----|------|-----|

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | ▲ Name | Size | Modified |
|--|----------------------|--------|------------------------|
| | .. | | |
| | .Rhistory | 2.9 KB | Apr 16, 2014, 1:45 PM |
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Console ~/Dropbox/codes/Resource/

```
'citation()' on how to cite R or R packages in publications.
```

```
Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.
```

```
During startup - Warning messages:
```

```
1: Setting LC_CTYPE failed, using "C"
2: Setting LC_COLLATE failed, using "C"
3: Setting LC_TIME failed, using "C"
4: Setting LC_MESSAGES failed, using "C"
5: Setting LC_PAPER failed, using "C"
> setwd("~/Dropbox/Codes/Resource")
> ctrl <- scan("plantgrowth,ctrl.txt")
Read 10 items
> |
```

Untitled1*

Source on Save Run Source

```
1 ctrl <- scan("plantgrowth,ctrl.txt")
2 trt1 <- scan("plantgrowth,trt1.txt")
3 trt2 <- scan("plantgrowth,trt2.txt")
4
5 ctrl.avg <- mean(ctrl)
6 trt1.avg <- mean(trt1)
7 trt2.avg <- mean(trt2)
8
9 ctrl.med <- median(ctrl)
10 trt1.med <- median(trt1)
11 trt2.med <- median(trt2)
12
13 ctrl.sd <- sd(ctrl)
14 trt1.sd <- sd(trt1)
15 trt2.sd <- sd(trt2)
16
```

16:1 (Top Level)

R Script

Console ~/Dropbox/codes/Resource/

```
> ctrl <- scan("plantgrowth,ctrl.txt")
Read 10 items
> trt1 <- scan("plantgrowth,trt1.txt")
Read 10 items
> trt2 <- scan("plantgrowth,trt2.txt")
Read 10 items
> ctrl.avg <- mean(ctrl)
> ctrl.med <- median(ctrl)
> ctrl.sd <- sd(ctrl)
> trt1.avg <- mean(trt1)
> trt2.avg <- mean(trt2)
> trt1.med <- median(trt1)
> trt2.med <- median(trt2)
> trt1.sd <- sd(trt1)
> trt2.sd <- sd(trt2)
>
```

Environment History

Import Dataset Clear List

Global Environment

Values

| | |
|----------|---|
| ctrl | num [1:10] 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | 5.032 |
| ctrl.med | 5.155 |
| ctrl.sd | 0.583091378392406 |
| trt1 | num [1:10] 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | 4.661 |
| trt1.med | 4.55 |
| trt1.sd | 0.793675696434703 |
| trt2 | num [1:10] 6.31 5.12 5.54 5.5 5.37 5.29 ... |
| trt2.avg | 5.526 |
| trt2.med | 5.435 |
| trt2.sd | 0.442573283322786 |

Files Plots Packages Help Viewer

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

```
1 ctrl <- scan("plantgrowth,ctrl.txt")
2 trt1 <- scan("plantgrowth,trt1.txt")
3 trt2 <- scan("plantgrowth,trt2.txt")
4
5 ctrl.avg <- mean(ctrl)
6 trt1.avg <- mean(trt1)
7 trt2.avg <- mean(trt2)
8
9 ctrl.med <- median(ctrl)
10 trt1.med <- median(trt1)
11 trt2.med <- median(trt2)
12
13 ctrl.sd <- sd(ctrl)
14 trt1.sd <- sd(trt1)
15 trt2.sd <- sd(trt2)
16
```

Environment

History

Import Dataset

Clear

Global Environment

Values

| | |
|----------|---|
| ctrl | num [1:10] 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | 5.032 |
| ctrl.med | 5.155 |
| ctrl.sd | 0.583091378392406 |
| trt1 | num [1:10] 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | 4.661 |
| trt1.med | 4.55 |
| trt1.sd | 0.793675696434703 |
| trt2 | num [1:10] 6.31 5.12 5.54 5.5 5.37 5.29 ... |
| trt2.avg | 5.526 |
| trt2.med | 5.435 |
| trt2.sd | 0.442573283322786 |

16:1 (Top Level)

Console ~/Dropbox/codes/Resource/

```
> ctrl <- scan("plantgrowth,ctrl.txt")
Read 10 items
> trt1 <- scan("plantgrowth,trt1.txt")
Read 10 items
> trt2 <- scan("plantgrowth,trt2.txt")
Read 10 items
> ctrl.avg <- mean(ctrl)
> ctrl.med <- median(ctrl)
> ctrl.sd <- sd(ctrl)
> trt1.avg <- mean(trt1)
> trt2.avg <- mean(trt2)
> trt1.med <- median(trt1)
> trt2.med <- median(trt2)
> trt1.sd <- sd(trt1)
> trt2.sd <- sd(trt2)
>
```

Files Plots Packages Help Viewer

작업을 끝낸 상태입니다.
스크립트 파일에 작업의 흔적이 남았고
오른쪽 작업 환경 창에는
어떤 변수가 있는지도 표시되어 있습니다.

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

```
1 ctrl <- scan("plantgrowth,ctrl.txt")
2 trt1 <- scan("plantgrowth,trt1.txt")
3 trt2 <- scan("plantgrowth,trt2.txt")
4
5 ctrl.avg <- mean(ctrl)
6 trt1.avg <- mean(trt1)
7 trt2.avg <- mean(trt2)
8
9 ctrl.med <- median(ctrl)
10 trt1.med <- median(trt1)
11 trt2.med <- median(trt2)
12
13 ctrl.sd <- sd(ctrl)
14 trt1.sd <- sd(trt1)
15 trt2.sd <- sd(trt2)
16
```

Environment

History

Import Dataset

Clear

Global Environment

Values

| | |
|----------|---|
| ctrl | num [1:10] 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | 5.032 |
| ctrl.med | 5.155 |
| ctrl.sd | 0.583091378392406 |
| trt1 | num [1:10] 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | 4.661 |
| trt1.med | 4.55 |
| trt1.sd | 0.793675696434703 |
| trt2 | num [1:10] 6.31 5.12 5.54 5.5 5.37 5.29 ... |
| trt2.avg | 5.526 |
| trt2.med | 5.435 |
| trt2.sd | 0.442573283322786 |

이제 이 스크립트 파일에 어떤 일을 했는지 표시하겠습니다.
그러면 나중에 이 스크립트를 훑어보더라도 도움이 되겠죠?

Console ~/Dropbox/codes/Resou

```
> ctrl <- scan("plantgrowth,ctrl.txt")
Read 10 items
> trt1 <- scan("plantgrowth,trt1.txt")
Read 10 items
> trt2 <- scan("plantgrowth,trt2.txt")
Read 10 items
> ctrl.avg <- mean(ctrl)
> ctrl.med <- median(ctrl)
> ctrl.sd <- sd(ctrl)
> trt1.avg <- mean(trt1)
> trt2.avg <- mean(trt2)
> trt1.med <- median(trt1)
> trt2.med <- median(trt2)
> trt1.sd <- sd(trt1)
> trt2.sd <- sd(trt2)
>
```

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

```
1 ##-----
2 ## ... 데이터 입력
3 ##-----
4 ctrl <- scan("plantgrowth,ctrl.txt")
5 trt1 <- scan("plantgrowth,trt1.txt")
6 trt2 <- scan("plantgrowth,trt2.txt")
7
8 ##-----
9 ## ... 각 데이터 별 평균값 계산
10 ##-----
11 ctrl.avg <- mean(ctrl)
12 trt1.avg <- mean(trt1)
13 trt2.avg <- mean(trt2)
14
15 ##-----
16 ## ... 각 데이터 별 중간값 계산
17 ##-----
18 ctrl.med <- median(ctrl)
19 trt1.med <- median(trt1)
20 trt2.med <- median(trt2)
21
22 ##-----
23 ## ... 각 데이터 별 표준편차 계산
24 ##-----
25 ctrl.sd <- sd(ctrl)
26 trt1.sd <- sd(trt1)
27 trt2.sd <- sd(trt2)
28
```

EnvironmentHistory

Import Dataset

Clear

List

Global Environment

Values

| | |
|----------|---|
| ctrl | num [1:10] 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | 5.032 |
| ctrl.med | 5.155 |
| ctrl.sd | 0.583091378392406 |
| trt1 | num [1:10] 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | 4.661 |
| trt1.med | 4.55 |
| trt1.sd | 0.793675696434703 |
| trt2 | num [1:10] 6.31 5.12 5.54 5.5 5.37 5.29 ... |
| trt2.avg | 5.526 |
| trt2.med | 5.435 |
| trt2.sd | 0.442573283322786 |

24:34

(Untitled)

R Script

Console

FilesPlotsPackagesHelpViewer

RStudio

Go to file/function

Project: (None)

Untitled1* x

Source on Save

Run

Source

```
1 ##-----
2 ## ... 데이터 입력
3 ##-----
4 ctrl <- scan("plantgrowth,ctrl.txt")
5 trt1 <- scan("plantgrowth,trt1.txt")
6 trt2 <- scan("plantgrowth,trt2.txt")
7
8 ##-----
9 ## ... 각 데이터 별 평균값 계산
10 ##-----
11 ctrl.avg <- mean(ctrl)
12 trt1.avg <- mean(trt1)
13 trt2.avg <- mean(trt2)
14
15 ##-----
16 ## ... 각 데이터 별 중간값 계산
17 ##-----
18 ctrl.med <- median(ctrl)
19 trt1.med <- median(trt1)
20 trt2.med <- median(trt2)
21
22 ##-----
23 ## ... 각 데이터 별 표준편차 계산
24 ##-----
25 ctrl.sd <- sd(ctrl)
26 trt1.sd <- sd(trt1)
27 trt2.sd <- sd(trt2)
28
```

Environment

History

Import Dataset

Clear

Global Environment

Values

| | |
|----------|---|
| ctrl | num [1:10] 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | 5.032 |
| ctrl.med | 5.155 |
| ctrl.sd | 0.583091378392406 |
| trt1 | num [1:10] 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | 4.661 |
| trt1.med | 4.55 |
| trt1.sd | 0.793675696434703 |
| trt2 | num [1:10] 6.31 5.12 5.54 5.5 5.37 5.29 ... |
| trt2.avg | 5.526 |
| trt2.med | 5.435 |
| trt2.sd | 0.442573283322786 |

24:34 (Untitled) R Script

Console

Files

Plots

Packages

Help

Viewer

코멘트를 이용해서 작업 내용을 집어넣었습니다.

Untitled1*

Source on Save

Run

Source

```
1 ##-----  
2 ## ... 데이터 입력
```

이제 저장을 위해 여기를 클릭 합니다.

```
6 trt2 <- scan("plantgrowth,trt2.txt")  
7  
8 ##-----  
9 ## ... 각 데이터 별 평균값 계산  
10 ##-----  
11 ctrl.avg <- mean(ctrl)  
12 trt1.avg <- mean(trt1)  
13 trt2.avg <- mean(trt2)  
14  
15 ##-----  
16 ## ... 각 데이터 별 중간값 계산  
17 ##-----  
18 ctrl.med <- median(ctrl)  
19 trt1.med <- median(trt1)  
20 trt2.med <- median(trt2)  
21  
22 ##-----  
23 ## ... 각 데이터 별 표준편차 계산  
24 ##-----  
25 ctrl.sd <- sd(ctrl)  
26 trt1.sd <- sd(trt1)  
27 trt2.sd <- sd(trt2)  
28
```

Environment

History



Import Dataset



Clear



List

Global Environment

Values

| | |
|----------|---|
| ctrl | num [1:10] 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | 5.032 |
| ctrl.med | 5.155 |
| ctrl.sd | 0.583091378392406 |
| trt1 | num [1:10] 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | 4.661 |
| trt1.med | 4.55 |
| trt1.sd | 0.793675696434703 |
| trt2 | num [1:10] 6.31 5.12 5.54 5.5 5.37 5.29 ... |
| trt2.avg | 5.526 |
| trt2.med | 5.435 |
| trt2.sd | 0.442573283322786 |

24:34 (Untitled)

R Script

Console

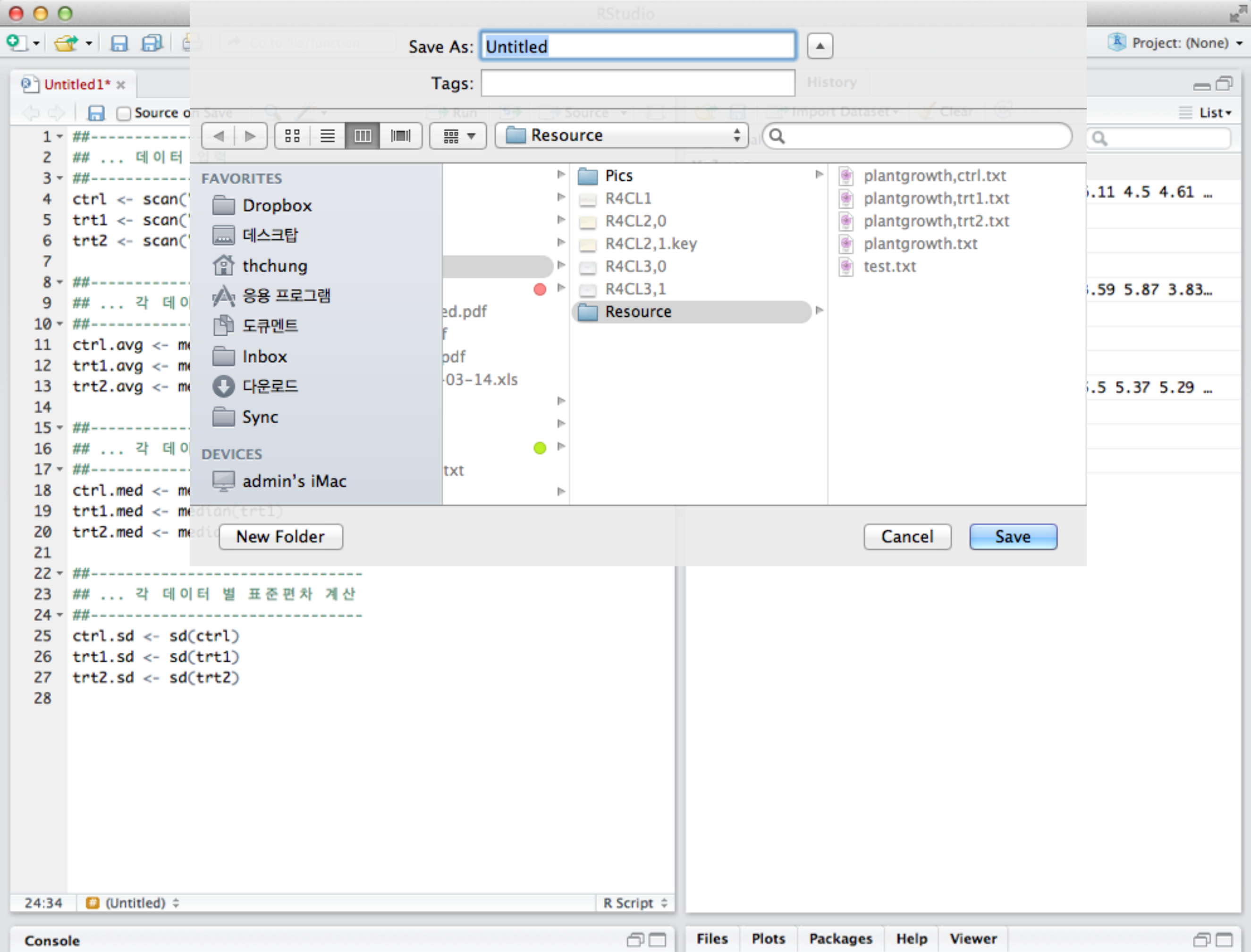
Files

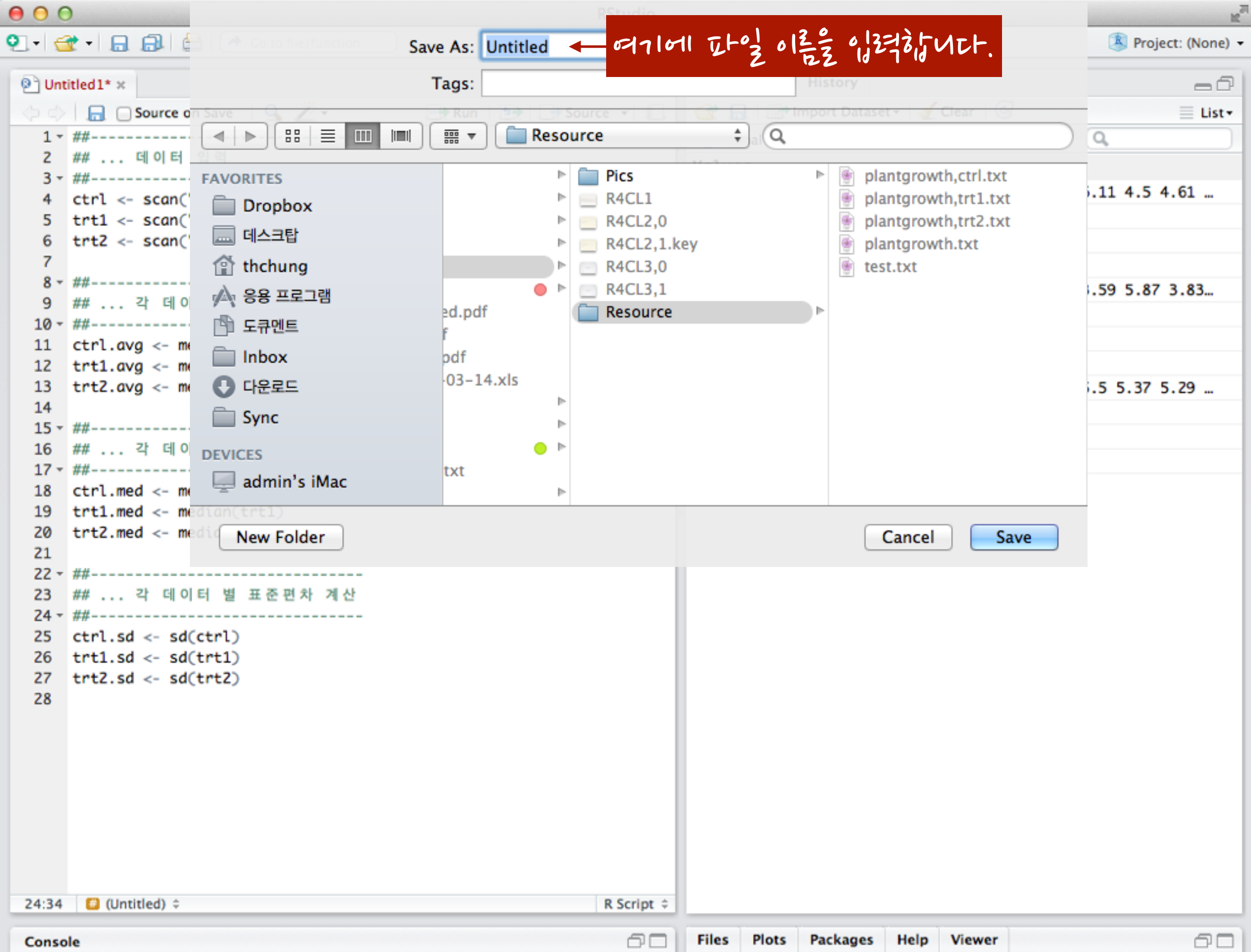
Plots

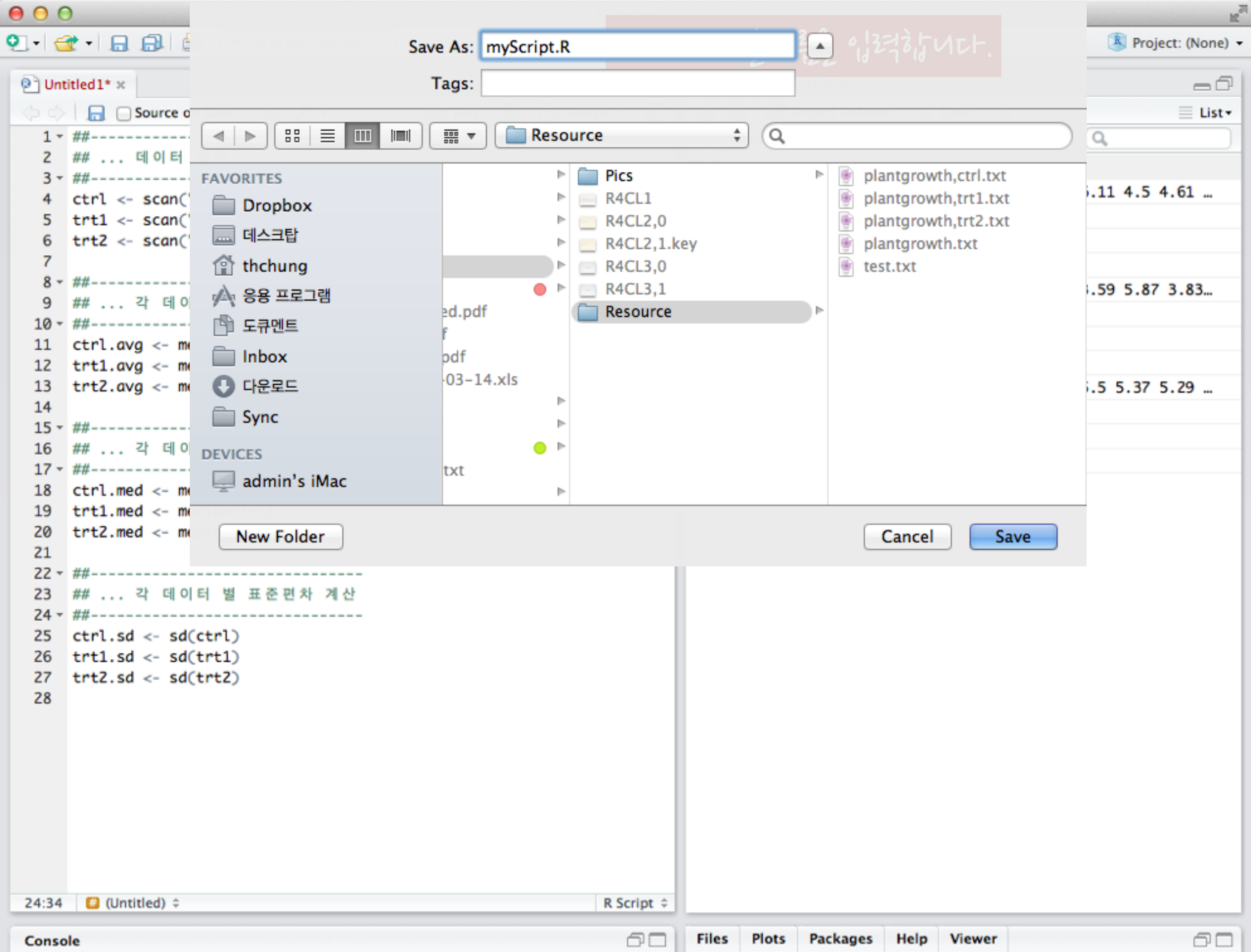
Packages

Help

Viewer







Save As: myScript.R

Tags:

입력합니다.

FAVORITES

- Dropbox
- 데스크탑
- thchung
- 응용 프로그램
- 도큐먼트
- Inbox
- 다운로드
- Sync

DEVICES

- admin's iMac

New Folder

Cancel

Save

```
1 ##-----
2 ## ... 데이터
3 ##-----
4 ctrl <- scan(
5 trt1 <- scan(
6 trt2 <- scan(
7
8 ##-----
9 ## ... 각 데
10 ##-----
11 ctrl.avg <- m
12 trt1.avg <- m
13 trt2.avg <- m
14
15 ##-----
16 ## ... 각 데
17 ##-----
18 ctrl.med <- m
19 trt1.med <- m
20 trt2.med <- m
21
22 ##-----
23 ## ... 각 데이터 별 표준편차 계산
24 ##-----
25 ctrl.sd <- sd(ctrl)
26 trt1.sd <- sd(trt1)
27 trt2.sd <- sd(trt2)
28
```

- plantgrowth,ctrl.txt
- plantgrowth,trt1.txt
- plantgrowth,trt2.txt
- plantgrowth.txt
- test.txt

0.11 4.5 4.61 ...

0.59 5.87 3.83...

0.5 5.37 5.29 ...

24:34 (Untitled)

R Script

Console

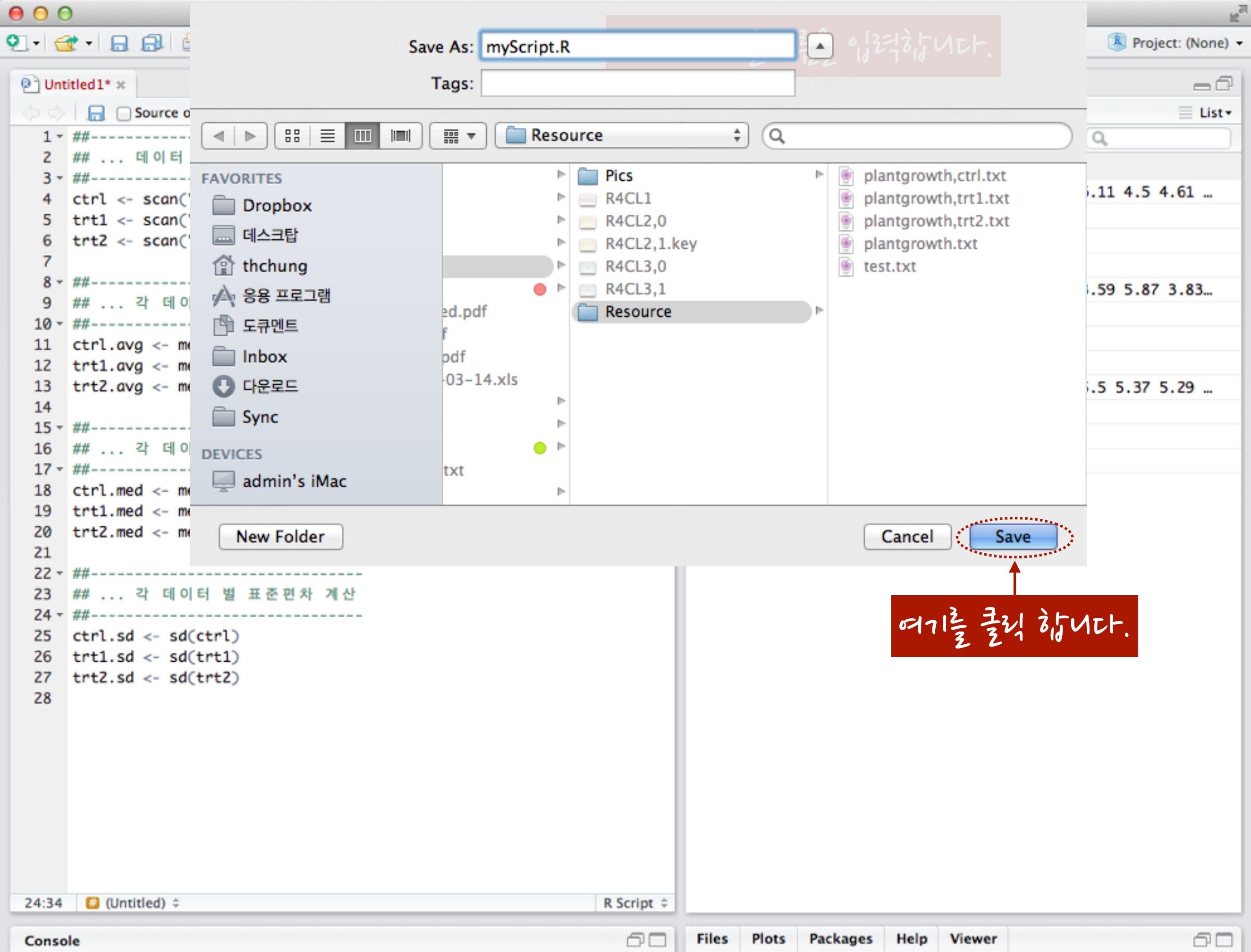
Files

Plots

Packages

Help

Viewer



Go to file/function

myScript.R x

Source on Save

Run

Source

```
1 ##-----
2 ## ... 데이터 입력
3 ##-----
4 ctrl <- scan("plantgrowth,ctrl.txt")
5 trt1 <- scan("plantgrowth,trt1.txt")
6 trt2 <- scan("plantgrowth,trt2.txt")
7
8 ##-----
9 ## ... 각 데이터 별 평균값 계산
10 ##-----
11 ctrl.avg <- mean(ctrl)
12 trt1.avg <- mean(trt1)
13 trt2.avg <- mean(trt2)
14
15 ##-----
16 ## ... 각 데이터 별 중간값 계산
17 ##-----
18 ctrl.med <- median(ctrl)
19 trt1.med <- median(trt1)
20 trt2.med <- median(trt2)
21
24:34 # (Untitled) R Script
```

Console ~/Dropbox/codes/Resource/

```
> ctrl <- scan("plantgrowth,ctrl.txt")
Read 10 items
> trt1 <- scan("plantgrowth,trt1.txt")
Read 10 items
> trt2 <- scan("plantgrowth,trt2.txt")
Read 10 items
> ctrl.avg <- mean(ctrl)
> ctrl.med <- median(ctrl)
> ctrl.sd <- sd(ctrl)
> trt1.avg <- mean(trt1)
> trt2.avg <- mean(trt2)
> trt1.med <- median(trt1)
> trt2.med <- median(trt2)
> trt1.sd <- sd(trt1)
> trt2.sd <- sd(trt2)
>
```

Environment History

Import Dataset Clear

Global Environment

Values

| | | |
|----------|------------|----------------------------------|
| ctrl | num [1:10] | 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | | 5.032 |
| ctrl.med | | 5.155 |
| ctrl.sd | | 0.583091378392406 |
| trt1 | num [1:10] | 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | | 4.661 |
| trt1.med | | 4.55 |
| trt1.sd | | 0.793675696434703 |
| trt2 | num [1:10] | 6.31 5.12 5.54 5.5 5.37 5.70... |

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|--------|------------------------|
| | .. | | |
| | .Rhistory | 2.9 KB | Apr 16, 2014, 1:45 PM |
| | myScript.R | 743 B | Apr 16, 2014, 2:17 PM |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt1.txt | 50 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt2.txt | 48 B | Apr 16, 2014, 12:26 PM |
| | plantgrowth.txt | 948 B | Apr 15, 2014, 1:41 PM |
| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

Go to file/function

myScript.R ×

Source

1

##-----

2

... 데이터 입력

3

##-----

4

ctrl <- scan("plantgrowth,ctrl.txt")

5

trt1 <- scan("plantgrowth,trt1.txt")

6

trt2 <- scan("plantgrowth,trt2.txt")

7

##-----

8

... 각 데이터 별 평균값 계산

9

##-----

10

ctrl.avg <- mean(ctrl)

11

trt1.avg <- mean(trt1)

12

trt2.avg <- mean(trt2)

13

##-----

14

... 각 데이터 별 중간값 계산

15

##-----

16

ctrl.med <- median(ctrl)

17

trt1.med <- median(trt1)

18

trt2.med <- median(trt2)

19

##-----

20

##-----

21

24:34 # (Untitled) R Script

Environment History

Import Dataset Clear

Global Environment

Values

| | | |
|----------|------------|----------------------------------|
| ctrl | num [1:10] | 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | | 5.032 |
| ctrl.med | | 5.155 |
| ctrl.sd | | 0.583091378392406 |
| trt1 | num [1:10] | 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | | 4.661 |
| trt1.med | | 4.55 |
| trt1.sd | | 0.793675696434703 |
| trt2 | num [1:10] | 6.31 5.12 5.54 5.5 5.37 5.70... |

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
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| | .. | | |
| | .Rhistory | 2.9 KB | Apr 16, 2014, 1:45 PM |
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| | plantgrowth.txt | 948 B | Apr 15, 2014, 1:41 PM |
| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

Console ~/Dropbox/codes/Resource/

> ctrl <- scan("plantgrowth,ctrl.txt")

Read 10 items

> trt1 <- scan("plantgrowth,trt1.txt")

Read 10 items

> trt2 <- scan("plantgrowth,trt2.txt")

Read 10 items

> ctrl.avg <- mean(ctrl)

> ctrl.med <- median(ctrl)

> ctrl.sd <- sd(ctrl)

> trt1.avg <- mean(trt1)

> trt2.avg <- mean(trt2)

> trt1.med <- median(trt1)

> trt2.med <- median(trt2)

> trt1.sd <- sd(trt1)

> trt2.sd <- sd(trt2)

>

최종적으로 파일 이름은 이렇게 바꾸고


```

1 ##-----
2 ## ... 데이터 입력
3 ##-----
4 ctrl <- scan("plantgrowth,ctrl.txt")
5 trt1 <- scan("plantgrowth,trt1.txt")
6 trt2 <- scan("plantgrowth,trt2.txt")
7
8 ##-----
9 ## ... 각 데이터 별 평균값 계산
10 ##-----
11 ctrl.avg <- mean(ctrl)
12 trt1.avg <- mean(trt1)
13 trt2.avg <- mean(trt2)
14
15 ##-----
16 ## ... 각 데이터 별 중간값 계산
17 ##-----
18 ctrl.med <- median(ctrl)
19 trt1.med <- median(trt1)
20 trt2.med <- median(trt2)
21
24:34 # (Untitled) R Script

```

Environment History

Global Environment

Values

| | |
|----------|---|
| ctrl | num [1:10] 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | 5.032 |
| ctrl.med | 5.155 |
| ctrl.sd | 0.583091378392406 |
| trt1 | num [1:10] 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | 4.661 |

여기를 클릭 해서 폴더의 파일 목록을 갱신하면

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|--------|------------------------|
| | .. | | |
| | .Rhistory | 2.9 KB | Apr 16, 2014, 1:45 PM |
| | myScript.R | 743 B | Apr 16, 2014, 2:17 PM |
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| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

Console ~/Dropbox/codes/Resource/

```

> ctrl <- scan("plantgrowth,ctrl.txt")
Read 10 items
> trt1 <- scan("plantgrowth,trt1.txt")
Read 10 items
> trt2 <- scan("plantgrowth,trt2.txt")
Read 10 items
> ctrl.avg <- mean(ctrl)
> ctrl.med <- median(ctrl)
> ctrl.sd <- sd(ctrl)
> trt1.avg <- mean(trt1)
> trt2.avg <- mean(trt2)
> trt1.med <- median(trt1)
> trt2.med <- median(trt2)
> trt1.sd <- sd(trt1)
> trt2.sd <- sd(trt2)
>

```

RStudio

Project: (None)

myScript.R x

Source on Save

Run

Source

```
1 ##-----
2 ## ... 데이터 입력
3 ##-----
4 ctrl <- scan("plantgrowth,ctrl.txt")
5 trt1 <- scan("plantgrowth,trt1.txt")
6 trt2 <- scan("plantgrowth,trt2.txt")
7
8 ##-----
9 ## ... 각 데이터 별 평균값 계산
10 ##-----
11 ctrl.avg <- mean(ctrl)
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13 trt2.avg <- mean(trt2)
14
15 ##-----
16 ## ... 각 데이터 별 중간값 계산
17 ##-----
18 ctrl.med <- median(ctrl)
19 trt1.med <- median(trt1)
20 trt2.med <- median(trt2)
21
```

24:34 # (Untitled)

Console ~/Dropbox/codes/Resource/

```
> ctrl <- scan("plantgrowth,ctrl.txt")
Read 10 items
> trt1 <- scan("plantgrowth,trt1.txt")
Read 10 items
> trt2 <- scan("plantgrowth,trt2.txt")
Read 10 items
> ctrl.avg <- mean(ctrl)
> ctrl.med <- median(ctrl)
> ctrl.sd <- sd(ctrl)
> trt1.avg <- mean(trt1)
> trt2.avg <- mean(trt2)
> trt1.med <- median(trt1)
> trt2.med <- median(trt2)
> trt1.sd <- sd(trt1)
> trt2.sd <- sd(trt2)
>
```

Environment History

Import Dataset

Clear

Global Environment

Values

| | | |
|----------|------------|----------------------------------|
| ctrl | num [1:10] | 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | | 5.032 |
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| trt1 | num [1:10] | 4.81 4.17 4.41 3.59 5.87 3.83... |
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Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
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| | .. | | |
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| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt1.txt | 50 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt2.txt | 48 B | Apr 16, 2014, 12:26 PM |
| | plantgrowth.txt | 948 B | Apr 15, 2014, 1:41 PM |
| | test.txt | 36 B | Apr 16, 2014, 9:15 AM |

여기에 나타납니다.

- 아하 그런데 말 그대로 킬러 함수가 있었으니 그것은 바로 ..

- 아하 그런데 말 그대로 킬러 함수가 있었으니 그것은 바로 ..
- `summary()`
- 이걸 이용하면 데이터의 최소값(`Min`)과 최대값(`Max`), 평균값(`Mean`)과 중간값(`Median`), 그리고 전체 데이터를 작은 값에서 큰 값까지 0%에서 100%까지로 줄을 세웠을 때 25%(`1st Qu.`)와 75%(`3rd Qu.`)에 해당하는 값 등을 바로 구해줍니다.

RStudio

Go to file/function

Project: (None)

myScript.R*

Source on Save

Run

Source

```
15 ##-----
16 ## ... 각 데이터 별 중간값 계산
17 ##-----
18 ctrl.med <- median(ctrl)
19 trt1.med <- median(trt1)
20 trt2.med <- median(trt2)
21
22 ##-----
23 ## ... 각 데이터 별 표준편차 계산
24 ##-----
25 ctrl.sd <- sd(ctrl)
26 trt1.sd <- sd(trt1)
27 trt2.sd <- sd(trt2)
28
29 ##-----
30 ## .. 그러나 킬러 함수가 있었으니 ...
31 ##-----
32 summary(ctrl)
33 summary(trt1)
34 summary(trt2)
35
```

Environment

History

Import Dataset

Clear

Global Environment

Values

| | | |
|----------|------------|----------------------------------|
| ctrl | num [1:10] | 4.17 5.58 5.18 6.11 4.5 4.61 ... |
| ctrl.avg | | 5.032 |
| ctrl.med | | 5.155 |
| ctrl.sd | | 0.583091378392406 |
| trt1 | num [1:10] | 4.81 4.17 4.41 3.59 5.87 3.83... |
| trt1.avg | | 4.661 |
| trt1.med | | 4.55 |
| trt1.sd | | 0.793675696434703 |
| trt2 | num [1:10] | 6.31 5.12 5.54 5.5 5.27 5.70... |

Files

Plots

Packages

Help

Viewer

New Folder

Delete

Rename

More

Home > Dropbox > Codes > Resource

| | Name | Size | Modified |
|--|----------------------|--------|------------------------|
| | .. | | |
| | .Rhistory | 2.9 KB | Apr 16, 2014, 1:45 PM |
| | myScript.R | 743 B | Apr 16, 2014, 2:17 PM |
| | plantgrowth,ctrl.txt | 49 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt1.txt | 50 B | Apr 15, 2014, 11:22 AM |
| | plantgrowth,trt2.txt | 48 B | Apr 16, 2014, 12:26 PM |
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Console ~/Dropbox/codes/Resource/

```
> trt1.avg <- mean(trt1)
> trt2.avg <- mean(trt2)
> trt1.med <- median(trt1)
> trt2.med <- median(trt2)
> trt1.sd <- sd(trt1)
> trt2.sd <- sd(trt2)
> summary(ctrl)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
4.170  4.550   5.155   5.032  5.292   6.110
> summary(trt1)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
3.590  4.208   4.550   4.661  4.870   6.030
> summary(trt2)
  Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
4.920  5.268   5.435   5.526  5.735   6.310
>
```