R 언어 환경 설정

소프트웨어융합대학 김병정

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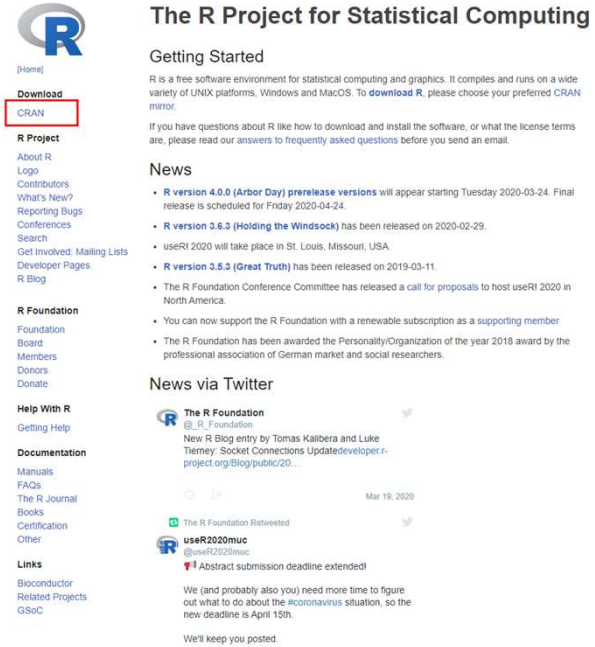
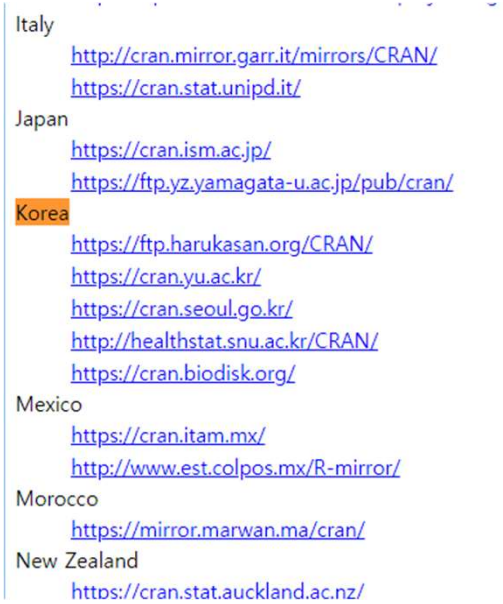
- 프로젝트위치 (Project Directory) 확인
- 연습문제

R 다운로드 및 설치

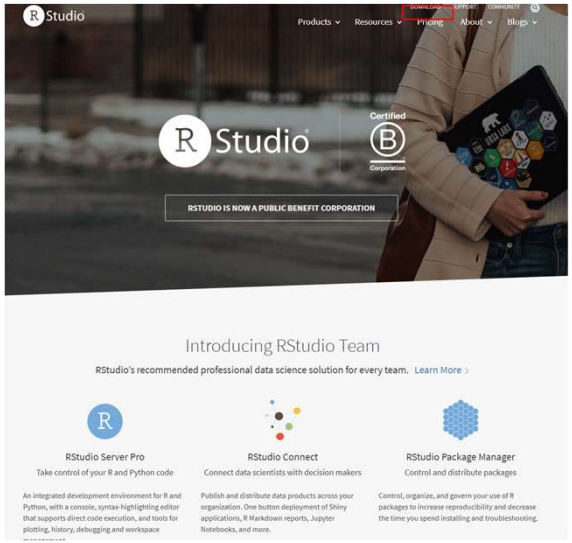
- CRAN Site
- https://www.r-project.org/

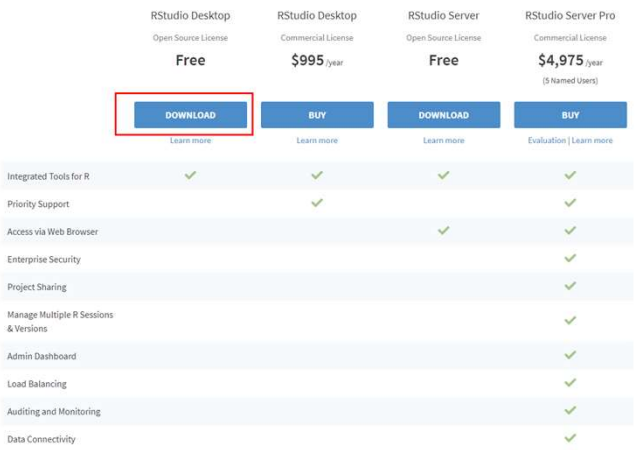


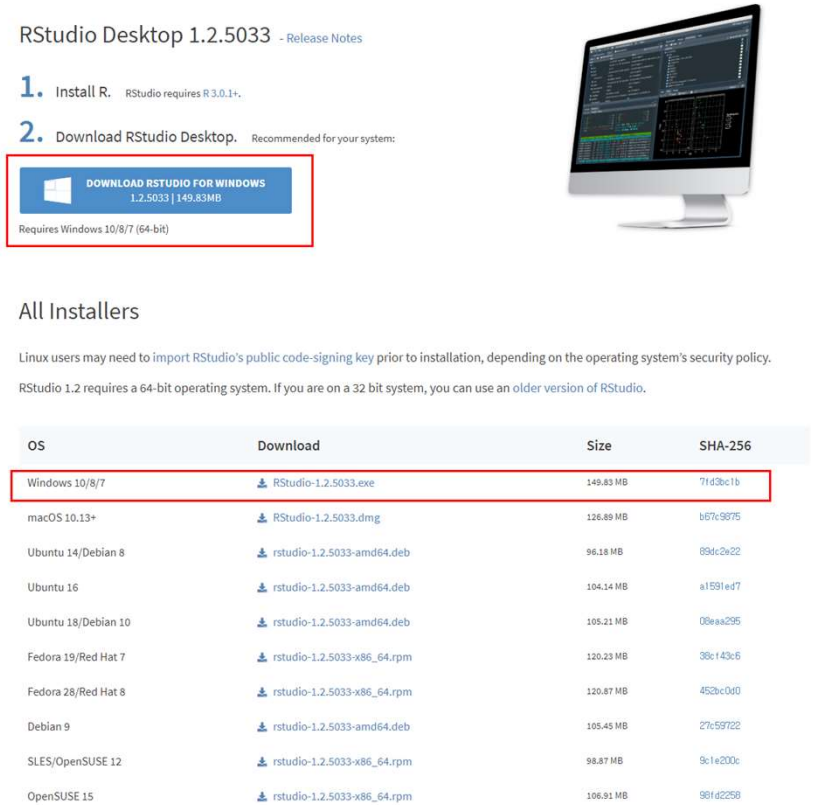


R-Studio 설치

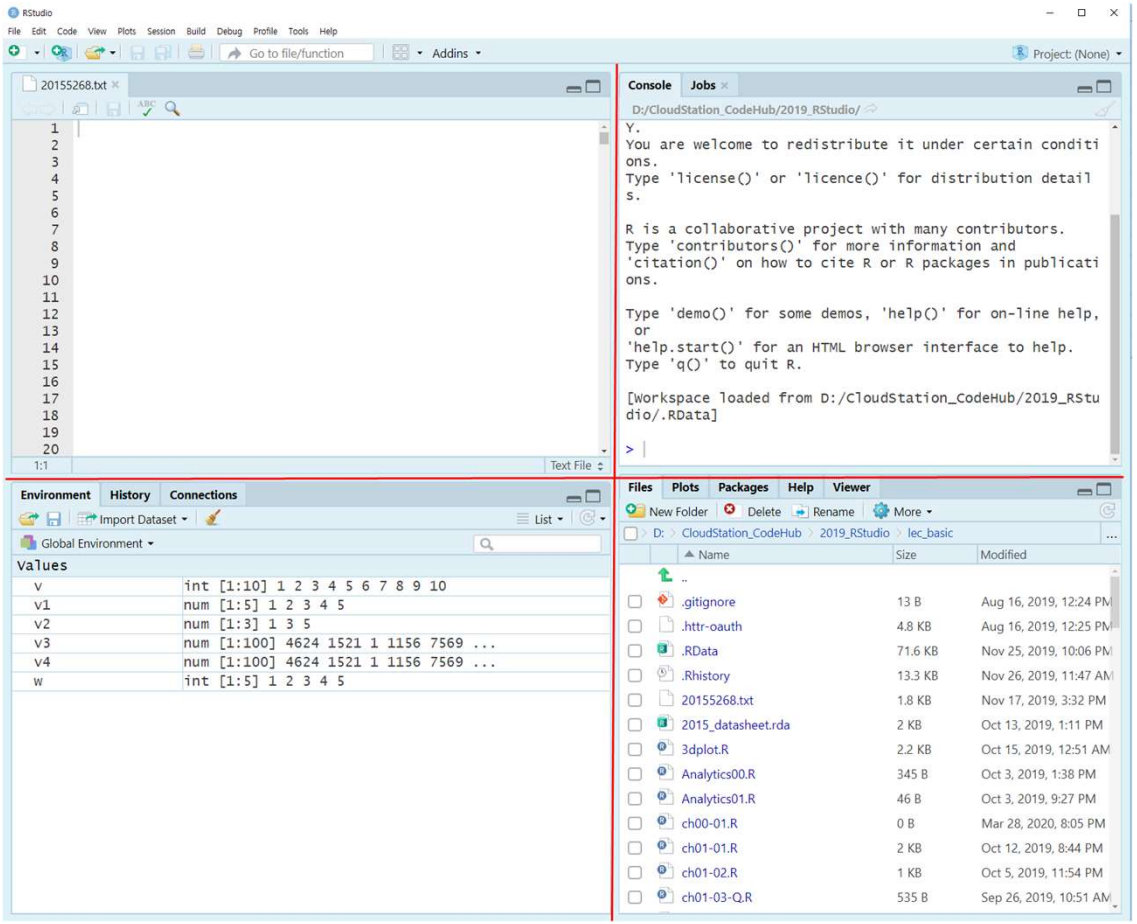
- https://rstudio.com/



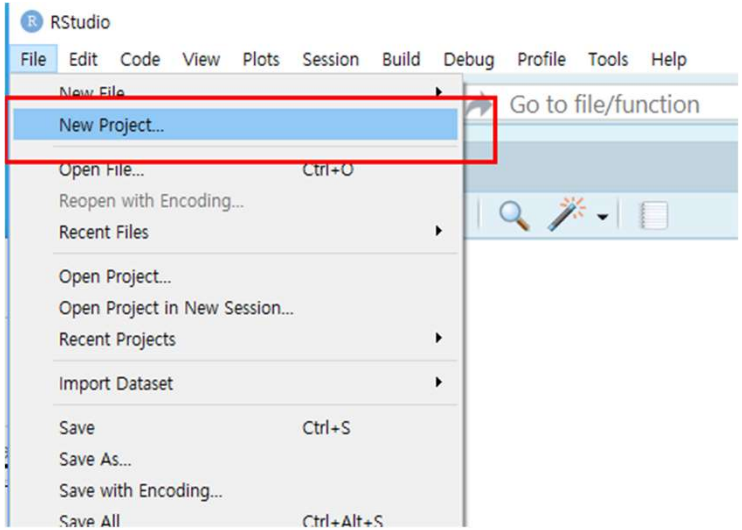


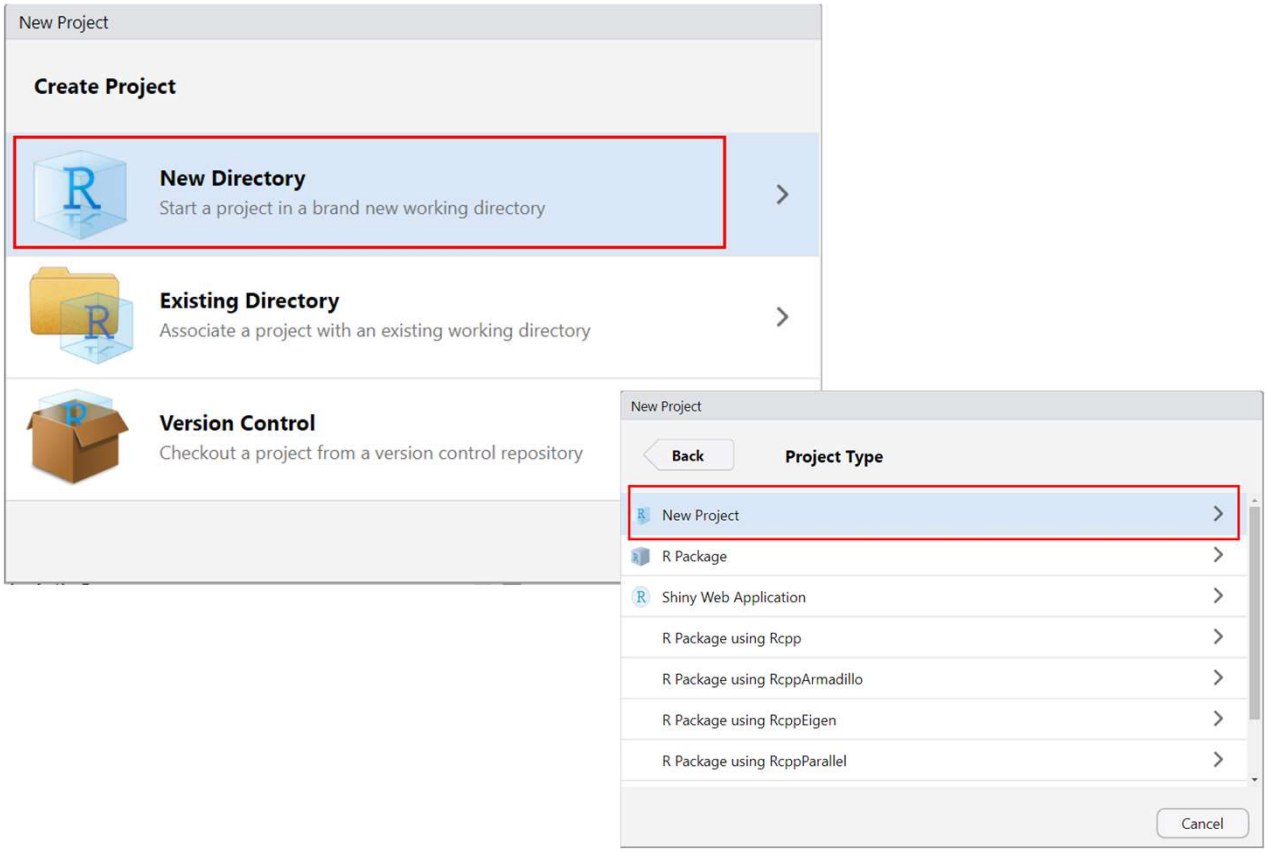


R-Studio 초기화면

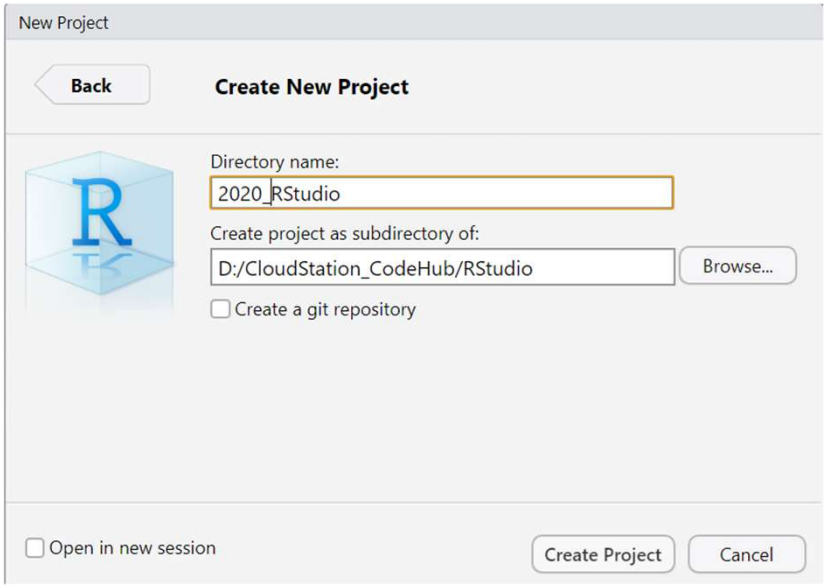


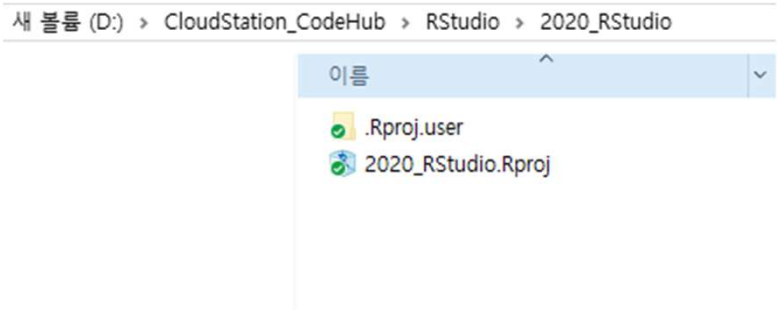
프로젝트 생성


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
New File
New Project...
Open File... Ctrl+O
Reopen with Encoding...
Recent Files
Open Project...
Open Project in New Session...
Recent Projects
Import Dataset
Save Ctrl+S
Save As...
Save with Encoding...
Save All Ctrl+Alt+S
Go to file/function

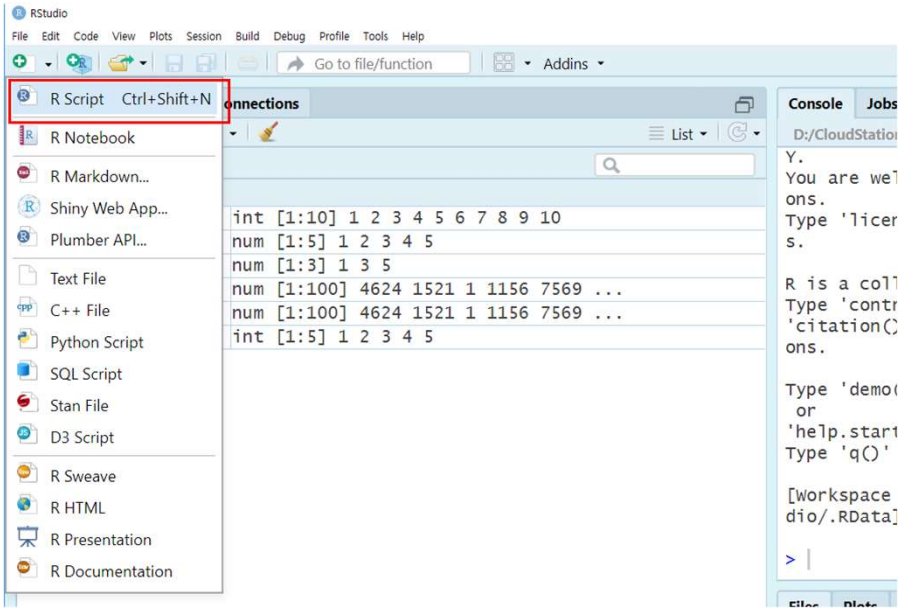

New Project
Create Project
New Directory
Start a project in a brand new working directory
Existing Directory
Associate a project with an existing working directory
Version Control
Checkout a project from a version control repository
New Project
Back
Project Type
New Project
R Package
Shiny Web Application
R Package using Rcpp
R Package using RcppArmadillo
R Package using RcppEigen
R Package using RcppParallel
Cancel

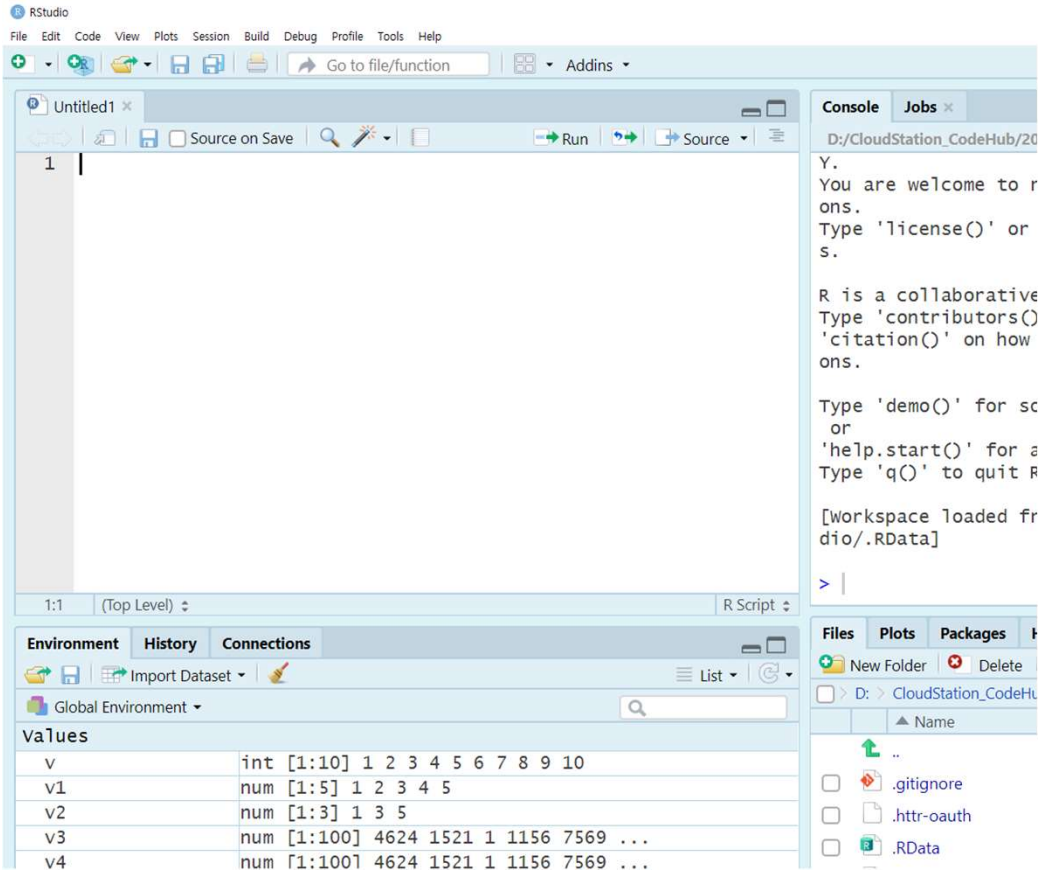
프로젝트 경로 생성


New Project
Back
Create New Project
Directory name:
2020_RStudio
Create project as subdirectory of:
D:/CloudStation_CodeHub/RStudio
Browse...
Create a git repository
Open in new session
Create Project
Cancel

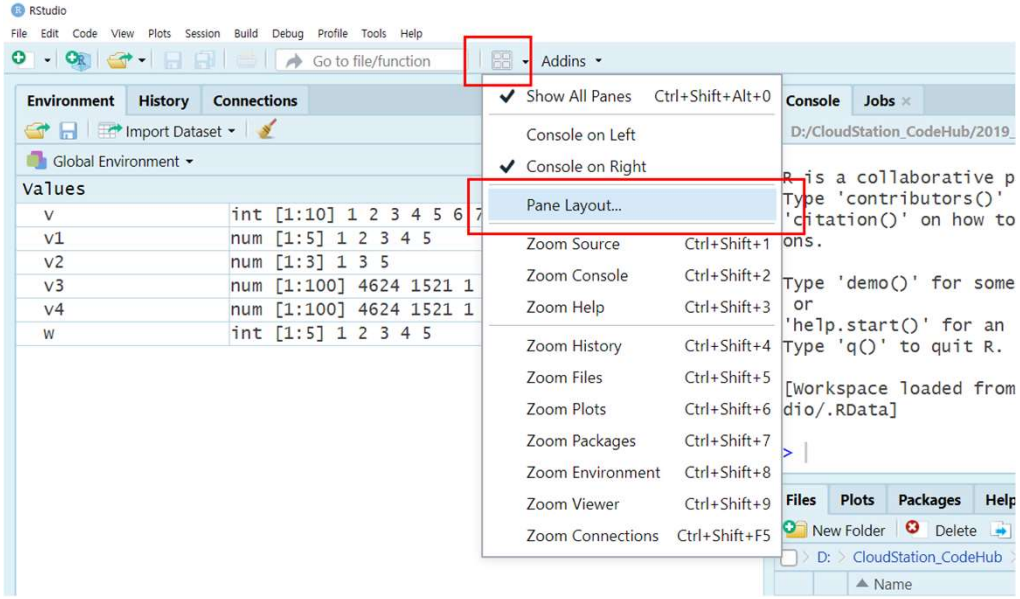

새 볼륨 (D:) › CloudStation_CodeHub › RStudio › 2020_RStudio
이름
.Rproj.user
2020_RStudio.Rproj

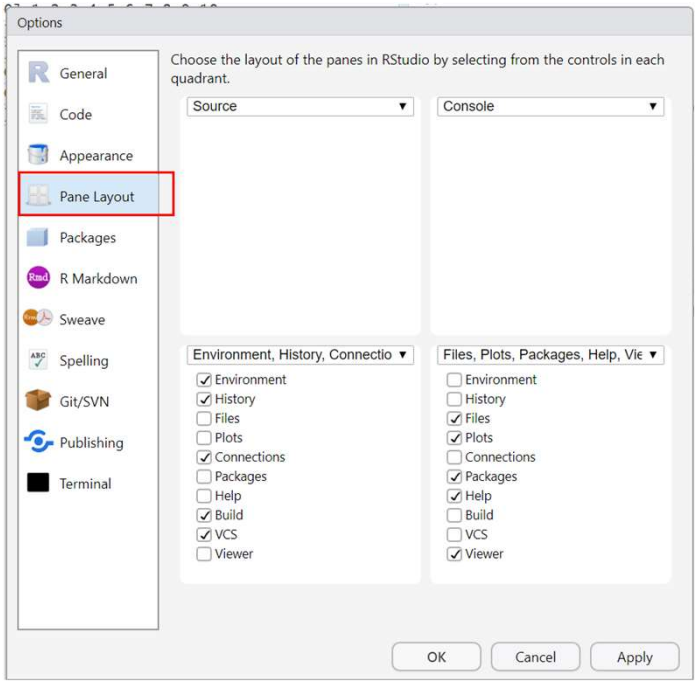
스크립트 생성


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
R Script Ctrl+Shift+N
R Notebook
R Markdown...
Shiny Web App...
Plumber API...
Text File
C++ File
Python Script
SQL Script
Stan File
D3 Script
R Sweave
R HTML
R Presentation
R Documentation
Console
Jobs
List
int [1:10] 1 2 3 4 5 6 7 8 9 10
num [1:5] 1 2 3 4 5
num [1:3] 1 3 5
num [1:100] 4624 1521 1 1156 7569 ...
num [1:100] 4624 1521 1 1156 7569 ...
int [1:5] 1 2 3 4 5


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
Untitled1
Source on Save
Run
Source
1
1:1
(Top Level)
R Script
Console
Jobs
Y.
You are welcome to r
ons.
Type 'license()' or
s.
R is a collaborative
Type 'contributors()
'citation()' on how
ons.
Type 'demo()' for sc
or
'help.start()' for a
Type 'q()' to quit R
[Workspace loaded fr
dio/.RData]
Environment
History
Connections
Import Dataset
List
Global Environment
Values
v int [1:10] 1 2 3 4 5 6 7 8 9 10
v1 num [1:5] 1 2 3 4 5
v2 num [1:3] 1 3 5
v3 num [1:100] 4624 1521 1 1156 7569 ...
v4 num [1:100] 4624 1521 1 1156 7569 ...
Files
Plots
Packages
New Folder
Delete
Name
..
.gitignore
.httr-oauth
.RData

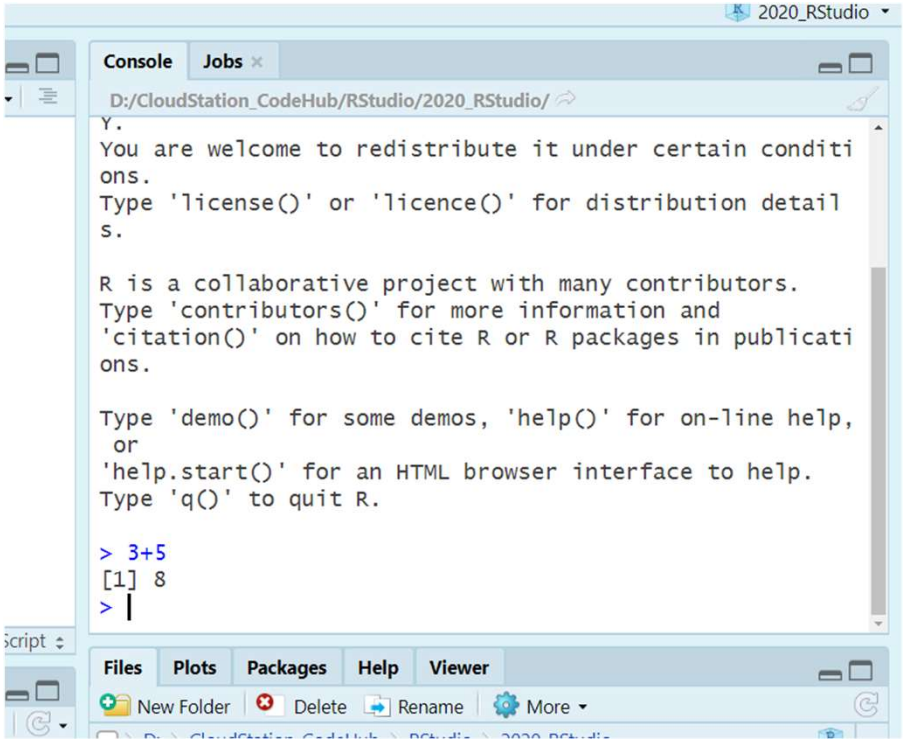
Option Layout 변경

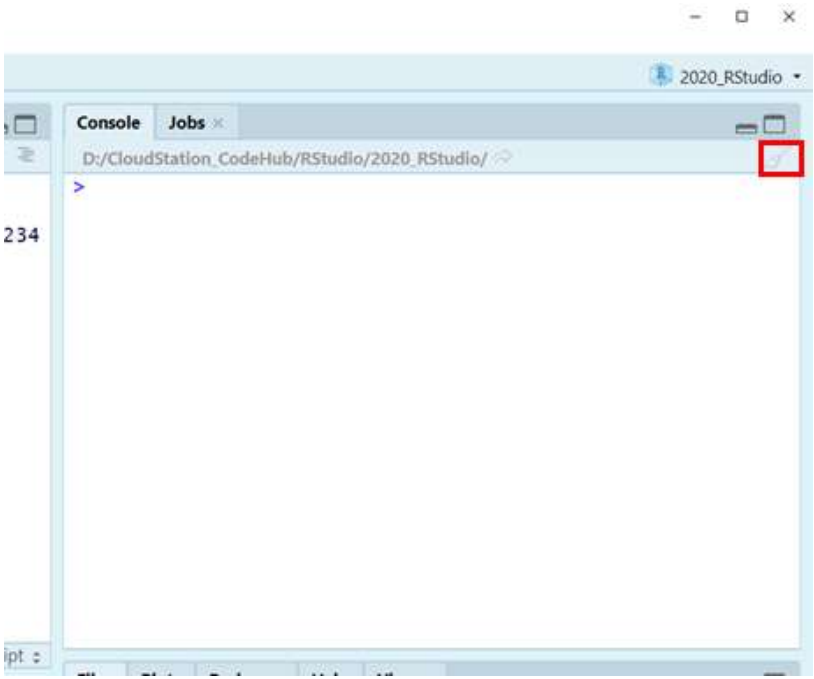




콘솔 테스트

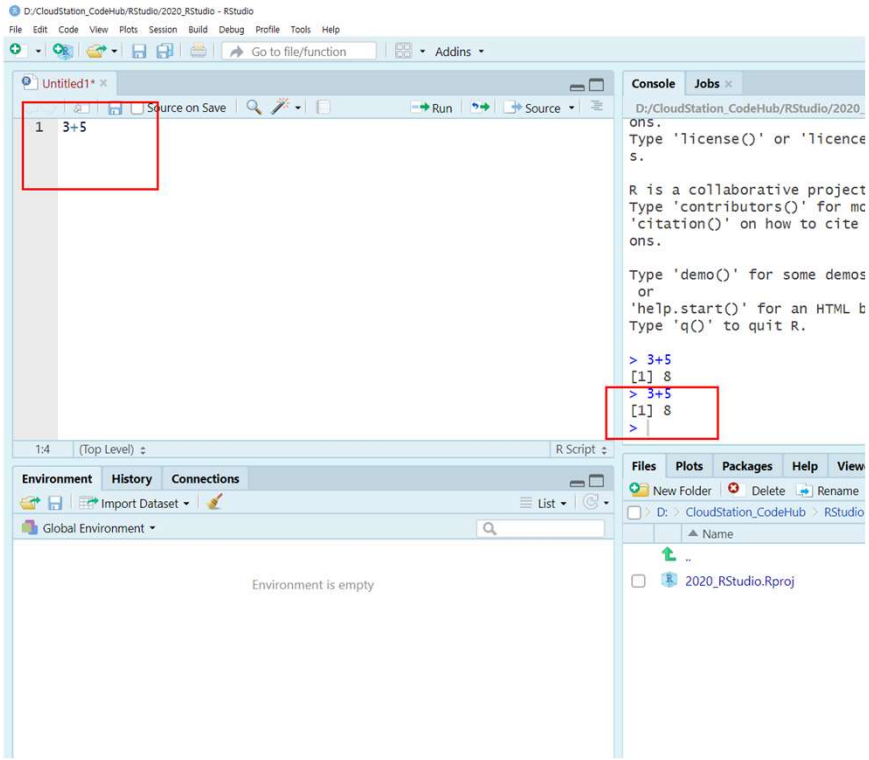
- Ctrl + L : 콘솔 지우기



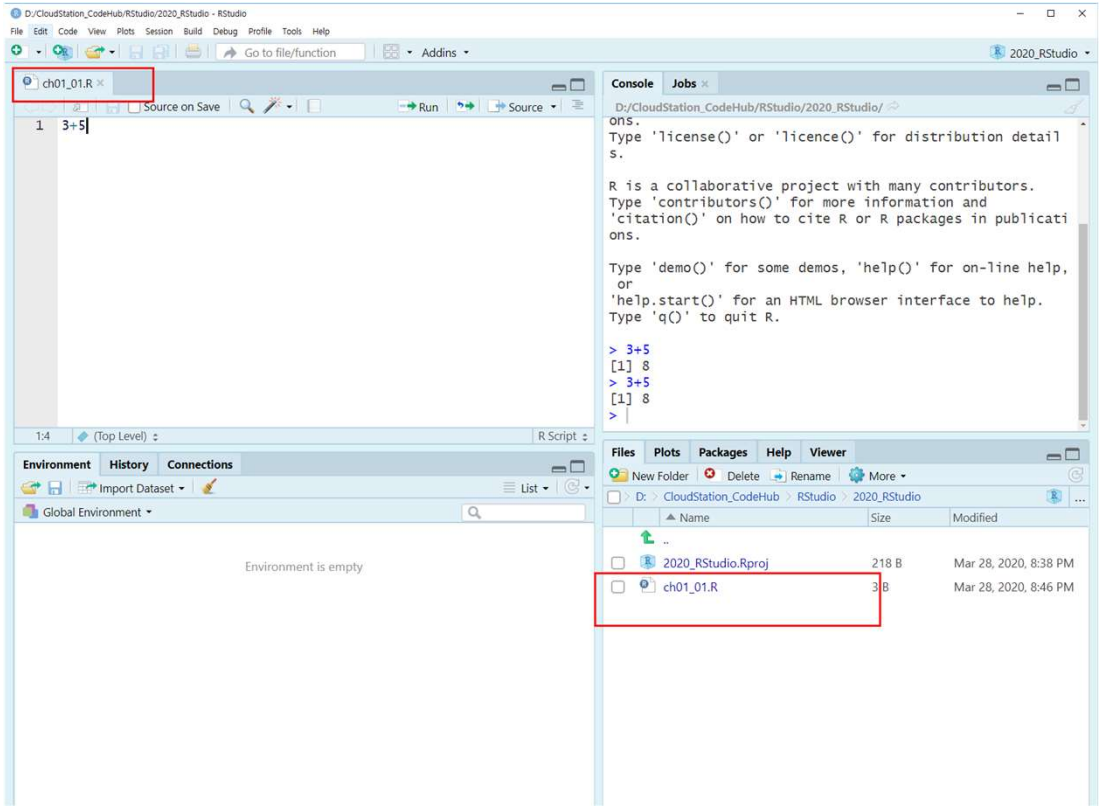


스크립트 테스트

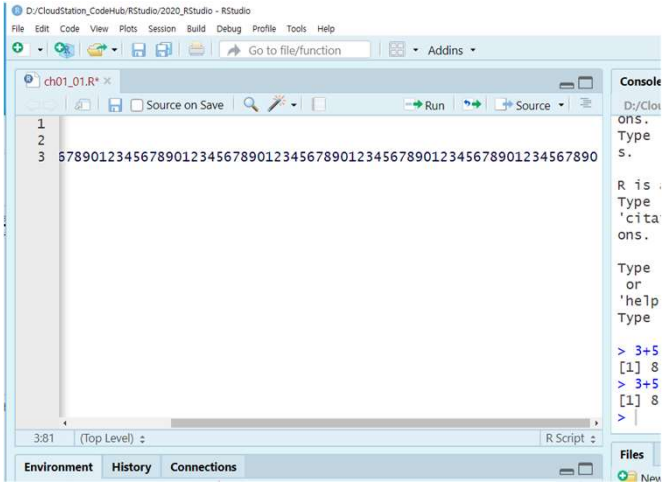
- Ctrl + Enter : 실행

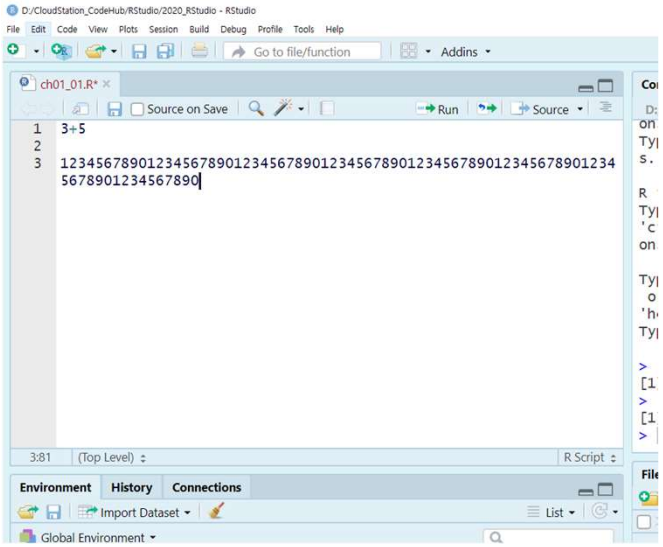


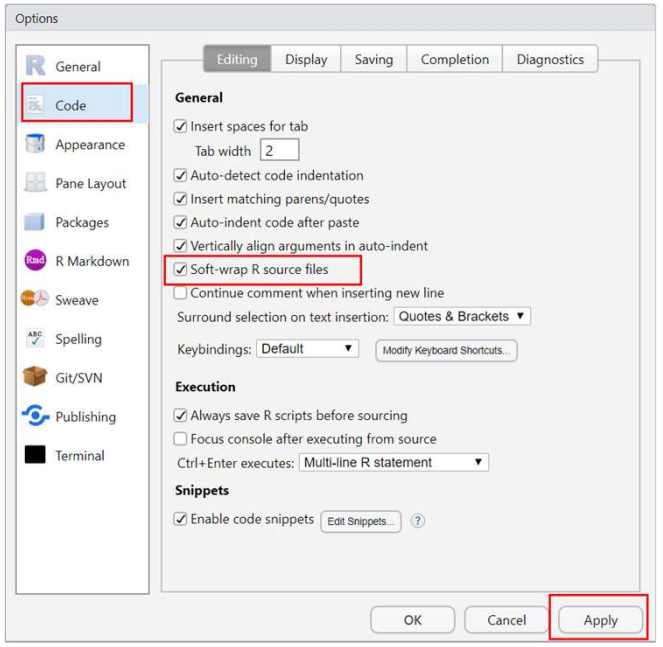
스크립트 저장확인


D:/CloudStation_CodeHub/RStudio/2020_RStudio - RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
2020_RStudio
ch01_01.R
Source on Save
Run
Source
1 3+5
1:4
(Top Level)
R Script
Console
Jobs
D:/CloudStation_CodeHub/RStudio/2020_RStudio/
ons.
Type 'license()' or 'licence()' for distribution detail
s.
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publicati
ons.
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.
> 3+5
[1] 8
> 3+5
[1] 8
>
Environment
History
Connections
Import Dataset
List
Global Environment
Environment is empty
Files
Plots
Packages
Help
Viewer
New Folder
Delete
Rename
More
D: CloudStation_CodeHub RStudio 2020_RStudio
Name
Size
Modified
..
2020_RStudio.Rproj
218 B
Mar 28, 2020, 8:38 PM
ch01_01.R
Mar 28, 2020, 8:46 PM

Soft-wrap Option 설정

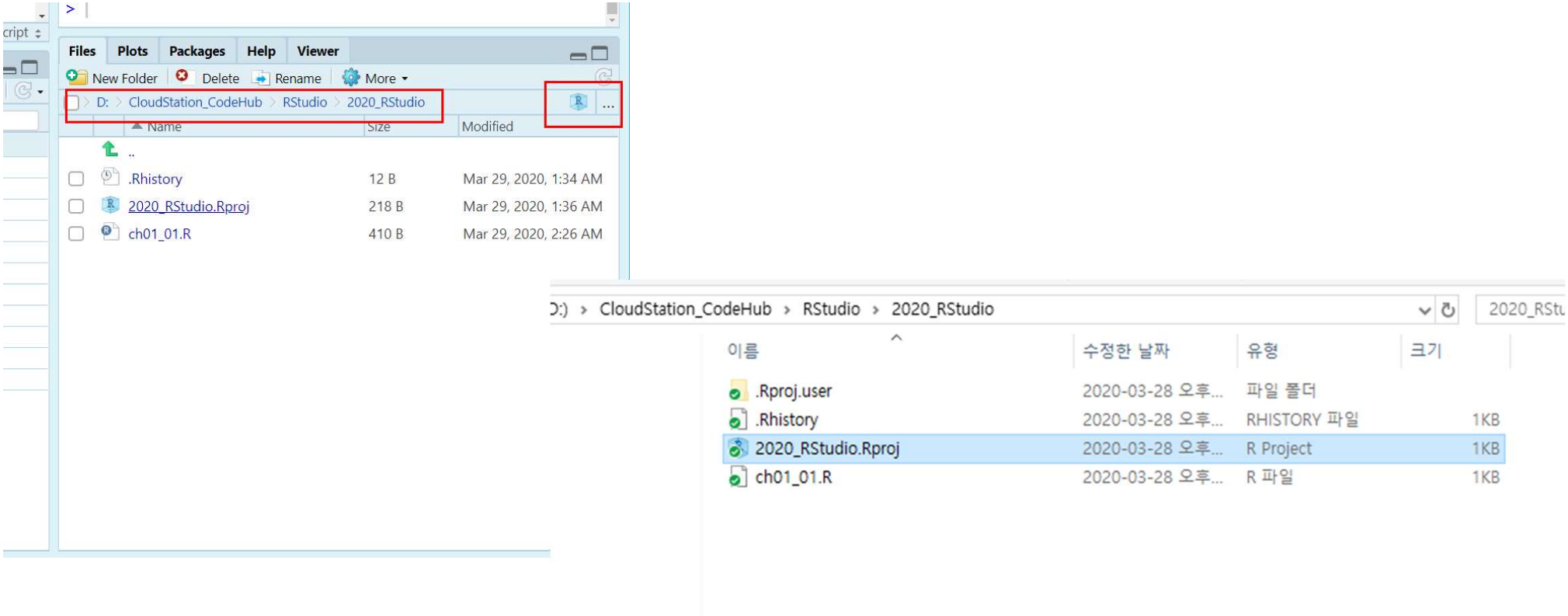




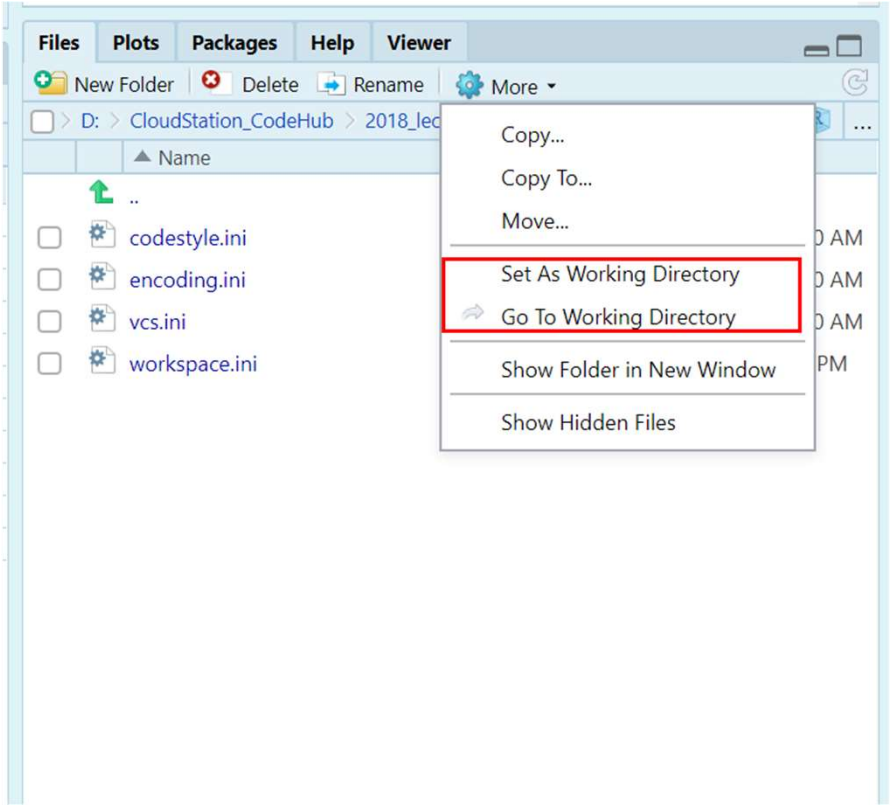


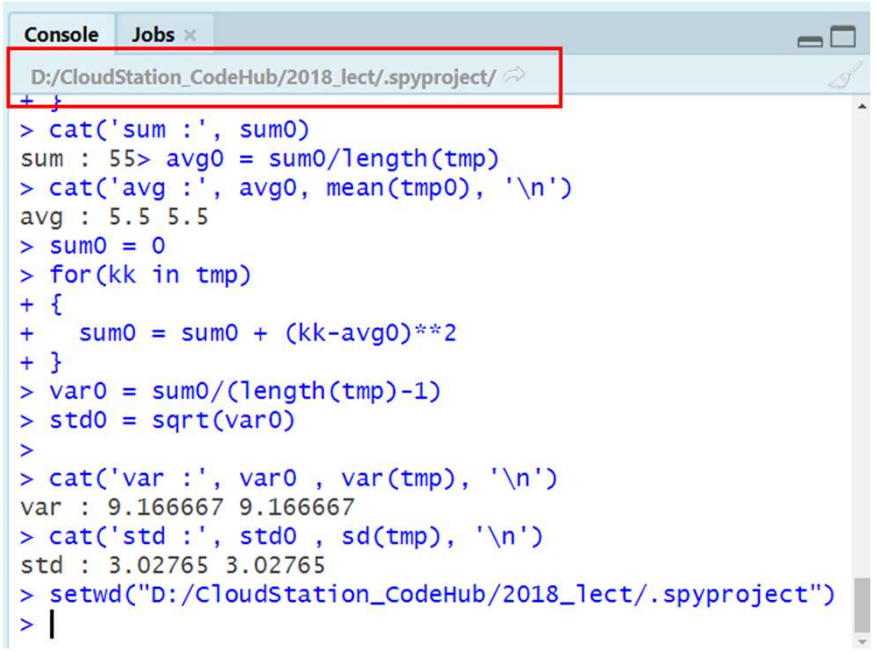
프로젝트위치 (Project Directory) 확인

- 프로젝트 불러오기



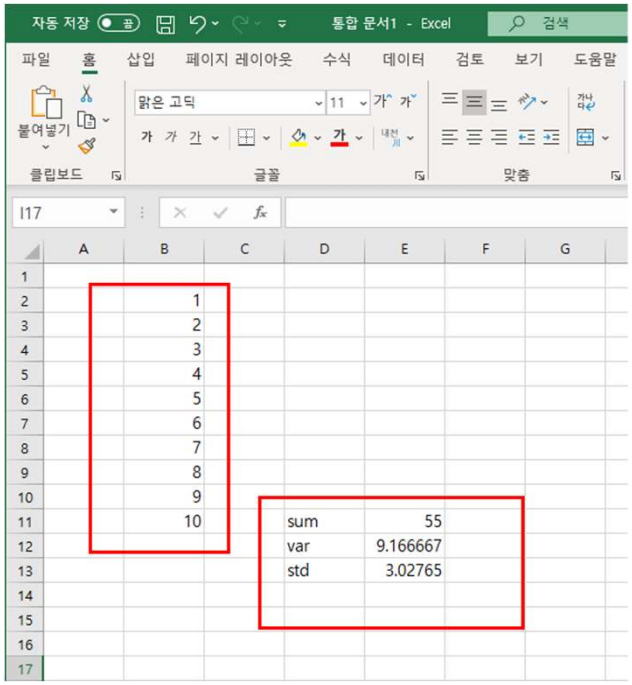
작업위치(Working Directory) 확인





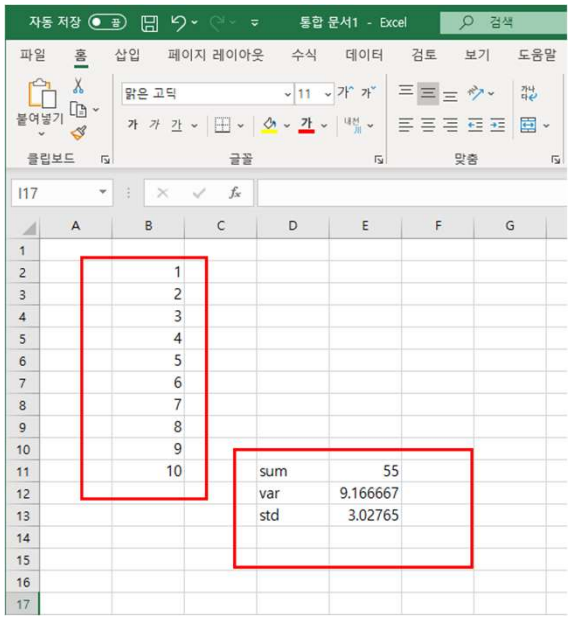
문제1

- Excel 과 R 언어를 이용해서 평균, 분산, 표준편차를 모두 구할 수 있었다. 두 방법의 차이를 설명하시오.



문제2

- 1부터10까지 자연수의 평균, 분산, 표준편차를 구하시오 (단, 표준함수를 사용하시오)



Variance and Standard Deviation

Population	Sample
Mean =μ	Mean= $\bar{x}$
Variance $\sigma^2 = \frac{\sum(X_i - \mu)^2}{N}$	Variance $s^2 = \sum_{i=1}^{n} \frac{(x_i - \bar{x})^2}{n-1}$
Standard Deviation $\sigma = \sqrt{\frac{\sum(X_i - \mu)^2}{N}}$	Standard Deviation $s = \sqrt{\frac{\sum(x - \bar{x})^2}{N-1}}$

문제3

- 1부터10까지 자연수의 평균을 구하시오 (단, 반복문을 사용하시오)

문제4

- 1부터10까지 자연수의 평균, 분산, 표준편차를 구하시오 (단, 반복문을 사용하시오)

수고하셨습니다.