## How to create a new GitHub Repository in your personal GitHub account

If you would like to create a new github repository (e.g. to later start a new RStudio project linked to that repository – see "*How to create a new project in RStudio with content from a GitHub Repository*" below – you do the following:

1. Go your github account on your web browser and select the "Repositories" tab as indicated in the figure. Click on "New"

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- 2. Enter the name of the repository you would like to create, and select whether you would like a LICENSE and README file to be added (you can always delete, create, or modify these two files later through your RStudio).
- 3. Click on "Create repository". You now have a new repository in your github account where you can pull and push files through your RStudio once you create a new project in your RStudio which is linked to that github repository, as described below

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# How to Fork (Copy) a (Public) GitHub Repository into your personal GitHub

You can "Fork" any public github repository to create your personal copy of that repository in your own github account.

To do so you simply do the following:

Go the the public repository you would like to fork

(e.g. <u>https://github.com/tevgeniou/Data Analytics Case MarketSegmentation LuxuryGoods</u>) and click the fork button on the upper left corner of that webpage.



You should now see the repository in your personal github account. You can also create a new project with the content of the forked repository in RStudio using the instructions on *"How to create a new project in RStudio with content from a GitHub Repository"*, below.

## How to create a new project in RStudio with content from a GitHub Repository

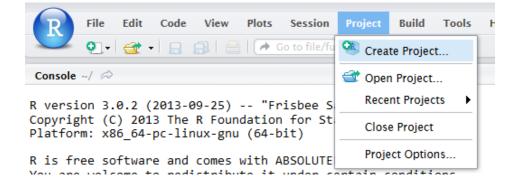
You can start a new project in RStudio with content on a GitHub repository as follows:

### Step 1

Go to the URL of the github project you would like to start in RStudio and copy the URL of the project (e.g. <u>https://github.com/YOURGITHUB\_USERNAME/Data\_Analytics\_Case\_MarketSegmentation\_LuxuryGoods</u>)

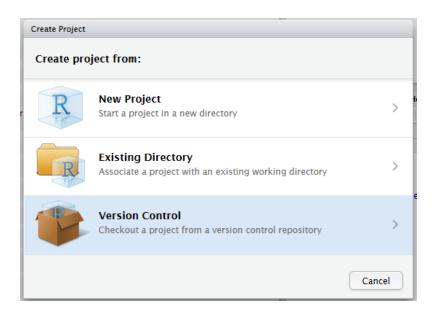
#### Step 2

In your RStudio, choose "Create Project" from the "Project" menu

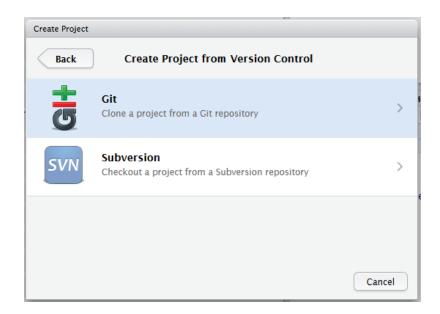


### Step 3

From the menu, choose "Version Control"



From the subsequent window, choose "Git"



### Step 5

In the followed form, please paste the URL address from Step 1 into the "Repository URL:" field. You can leave the rest as they are by default. If you would like to rename the folder name, you can do so in the second field: "Project directory name". Then, click "Create Project".

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Once the github operation is done, RStudio will switch to a new project directory and you will see the files as following. You have successfully started a new RStudio project using content from the selected GitHub repository project (URL), and created a project linked to the repository in your own RStudio.

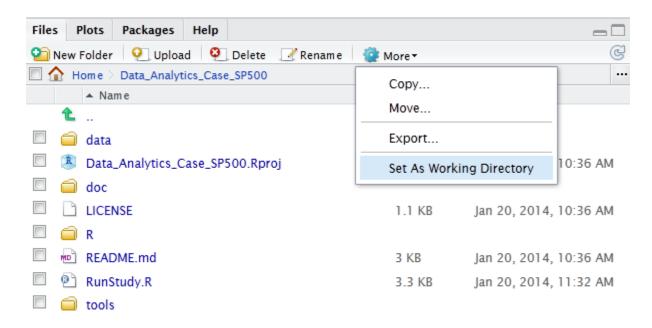
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Once in your RStudio server page, open any course session or case study project **main** folder (e.g. the image below displays the Case Study called "SP500"). The folder should be the one where you see the RunStudy.R file, not any other subfolder of the case. Set that main case folder as the working directory as shown below.

**Note:** every project has 4 subfolders: data, doc, R, and tools.

- Folder "doc" has the .Rmd files that generate the .html documents of the case (Report.Rmd and Slides.Rmd) see below. All documents of the project are filed in this folder.
- Folder "data" has all the data files used for the project, as well as a README file describing the data.
- Folder "R" has any R functions and libraries used for the project to run.
- Folder "tools" has one ui.R and one server.R file which are all that is needed to have a Web Application Tool customized for the case/project.

It also has a README.md, a LICENCE, a RunStudy.R, and a .Rproj file. All projects/cases must be organized with this structure using the exact same naming of the folders and files.



#### Step 2

Open the RunStudy.R file by left clicking on it in your RStudio. The file should now open in the top left pane of your RStudio.

### Step 3

Go through the RunStudy.R file and, if needed, update the parameters of the case/project that you would like to use in order to replicate or reuse the analysis of the study. The RunStudy.R file should have the default

parameters used for the study, as well as explanations about what these parameters do. A few example parameters are shown below.

```
# Please ENTER the time period to use (default is 1 to nrow(ProjectData), namely all the days)
start_date <- 1
end_date <- nrow(ProjectData)
# Please ENTER the stocks to use (default is 1:ncol(ProjectData), namely all of them)
# Notice: this is not an input to the Web App. You may need to use a different data file
stocks_used <- 1:ncol(ProjectData)
# Please ENTER the number of principal components to eventually use for this report
numb_components_used <- 3
# Please ENTER 0 or 1 to de-mean or not the data in the regression estimation of the report (Default is 0)
use_mean_alpha <- 0</pre>
```

**NOTE: ONLY if you do this in a local computer:** If you want to run the web application in your local computer (NOT a server), please set the "start\_local\_webapp" parameter to 1. **Otherwise you should set this parameter to 0.** 

To run the entire RunStudy.R you just need to click on the "Source" tab.

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55	# NOTE: Running the web application on your LO	CAL computer will open a new browser
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59	# 1: start application on LOCAL computer, 0: d	lo not start it
60	# SELECT 0 if you are running the application	on a server
61	# (DEFAULT is 0).	
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#### Step 4

When you source RunStudy.R, the system creates/updates 2 html files, both in the "doc" folder: a complete report for the lecture/project and a file with slides. You can view both files in a web browser by selecting the "View in Web Browser" when you left click on the file. **Note:** when working on a server, the URL where you can see the files can also be shared with people, as the html file becomes public.

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**ONLY if you run this on a local computer:** If you set the application to 1 (see Step 3), a new browser tab will be popped up and showcase the web application.

# Exchanging files between GitHub and your local/server RStudio

To publish any changes you made on your computer or server **(local changes) to** the github repository website online (e.g. for others to see through your github account online), do:

- Select the files you would like to publish on the github webpage (in the upper right pane when you select the Git tab possibly under "More" see second figure below). Note: only files that you modified since you last downloaded (pulled) them from the github website appear in the upper right pane under the Git tab.
- 2. Press on "Commit" and enter a message in the pop up window (see first figure below) and press "Commit"
- 3. Back in your RStudio, select "Push" (in the upper right pane when you select the Git tab possibly under "More" see second figure below)
- 4. Enter your github username and password when prompted
- 5. Confirm through your web browser that the files are published in the github repository online of the project you work on with the message you entered in Step 1

To get the most recently published files from the github website select "Pull" (in the upper right pane when you select the Git tab – possibly under "More"). Note that any time you pull, **if you had already changed some of the files locally** (hence they appear in the upper right pane under the Git tab), github will try to merge the local file and the version of the file on the github webpage. You should try to **avoid** "pulling" files from the github webpage when files appear in your Git tab in the upper right pane of your RStudio.

At any point you can "**revert**" to the version a file was last pulled from the github website by selecting the file and clicking on "revert" (in the upper right pane when you select the Git tab – possibly under "More" – see second figure below). This will **overwrite** any changes you have made to that file locally since you last pulled the file from the github website.

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