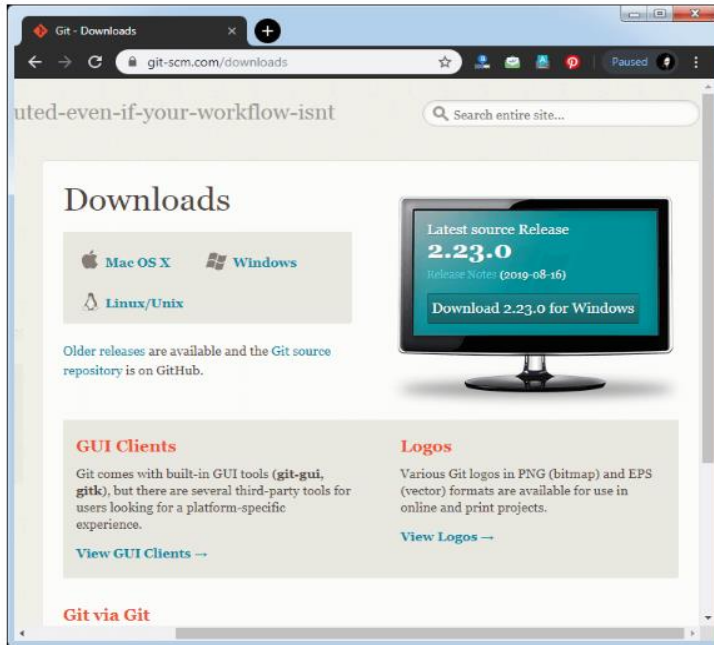


WEEK: 8

Rstyle guide ,git integration, projects in R Studio :

To download the Git installer, visit the Git's official site and go to download page. The link for the download page is <https://git-scm.com/downloads>. The page looks like as

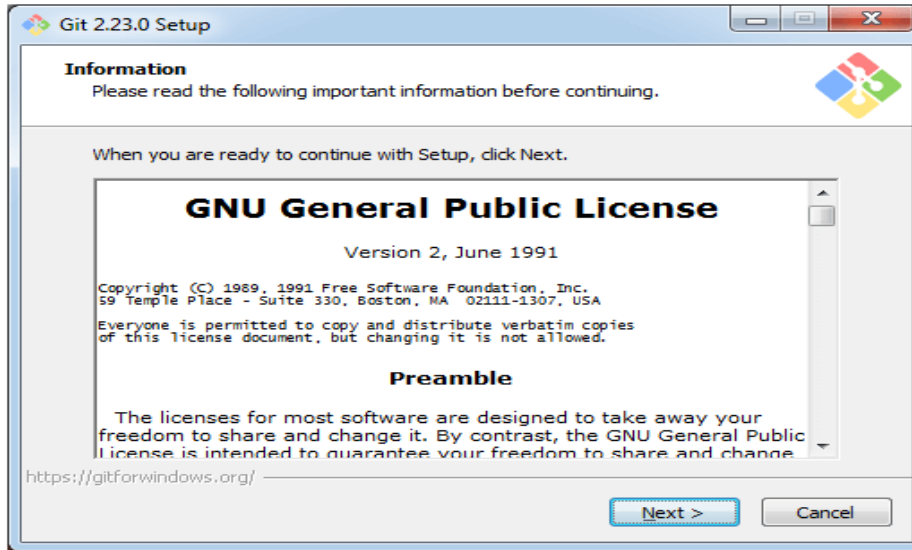


Click on the package given on the page as **download 2.23.0 for windows**. The download will start after selecting the package.

Install Git

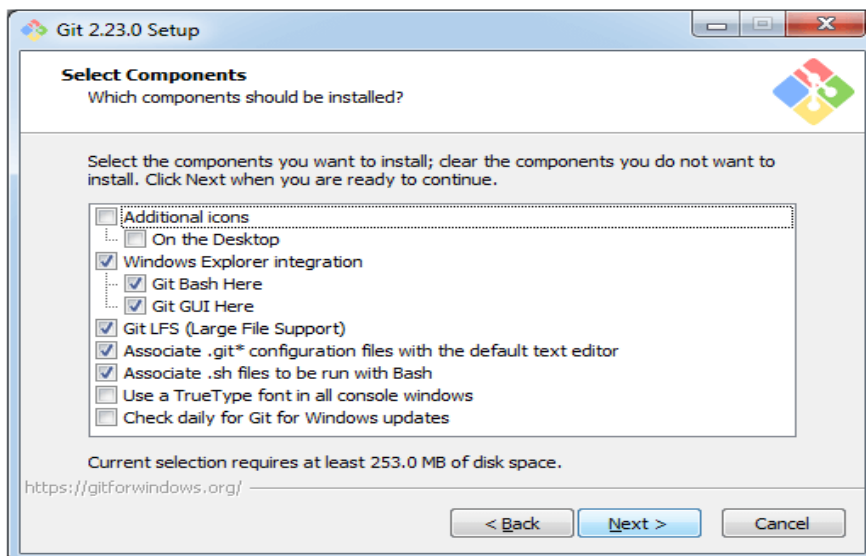
Step2

Click on the downloaded installer file and select **yes** to continue. After the selecting **yes** the installation begins, and the screen will look like as



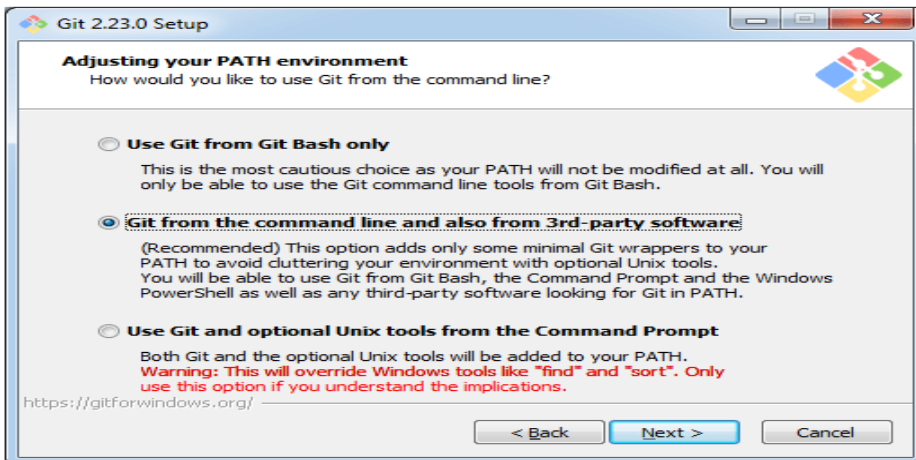
Step3

Default components are automatically selected in this step. You can also choose your required part.



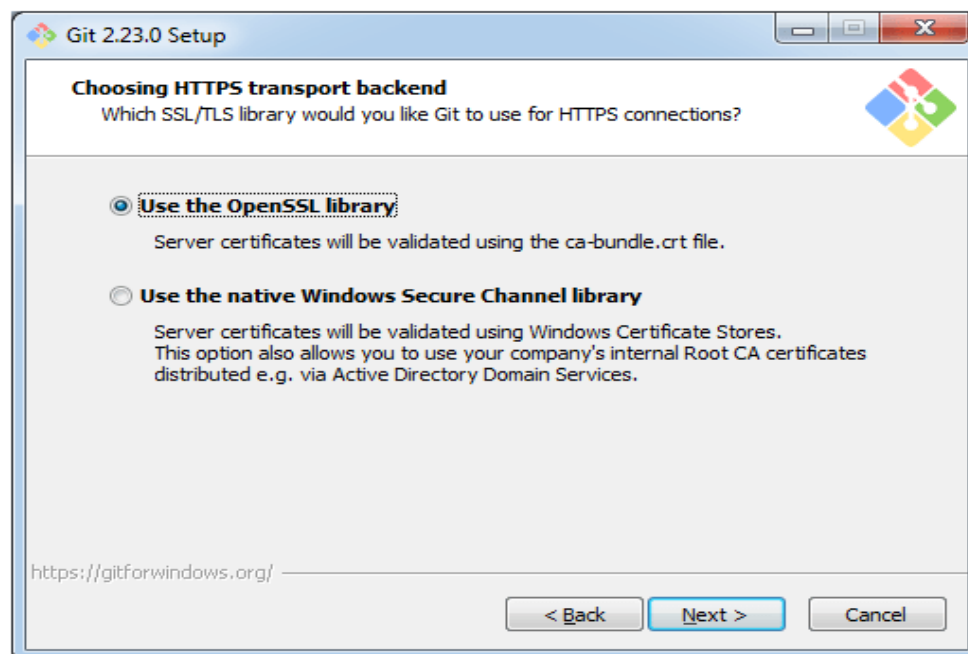
Step4

The default Git command-line options are selected automatically. You can choose your preferred choice. Click **next** to continue.

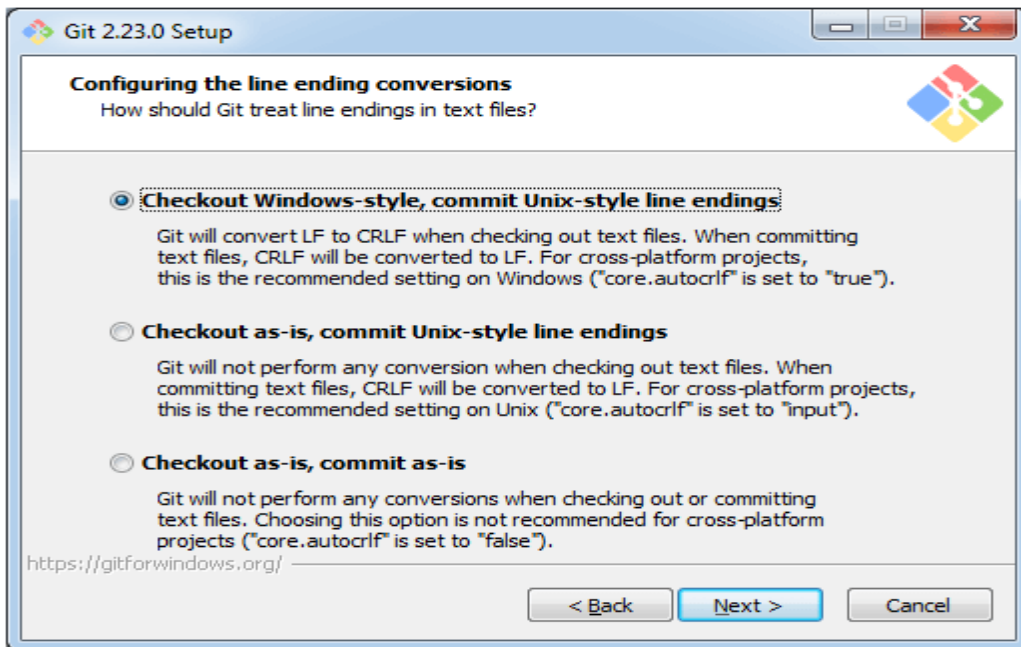


Step5

The default transport backend options are selected in this step. Click **next** to continue.

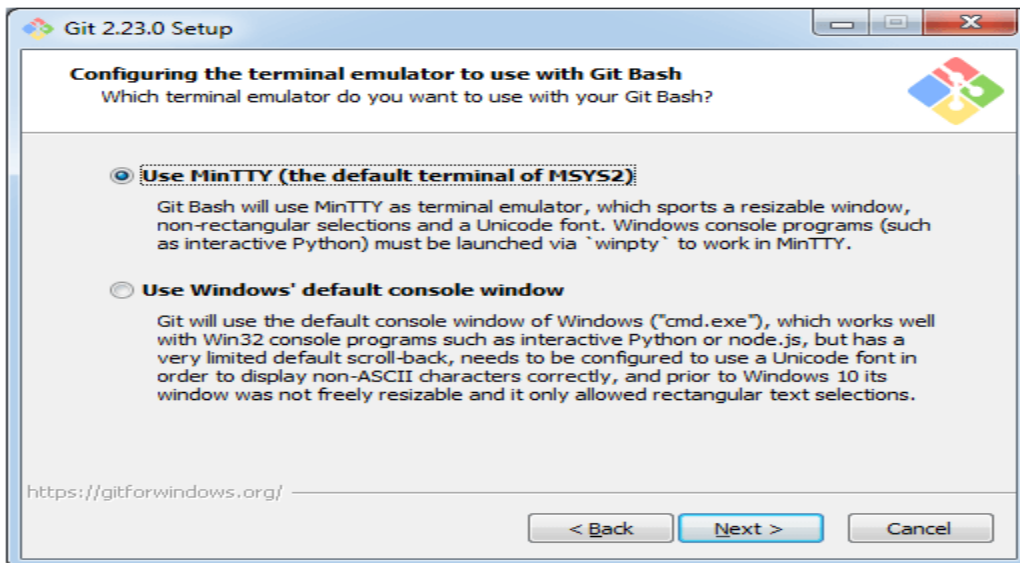


Select your required line ending option and click next to continue.

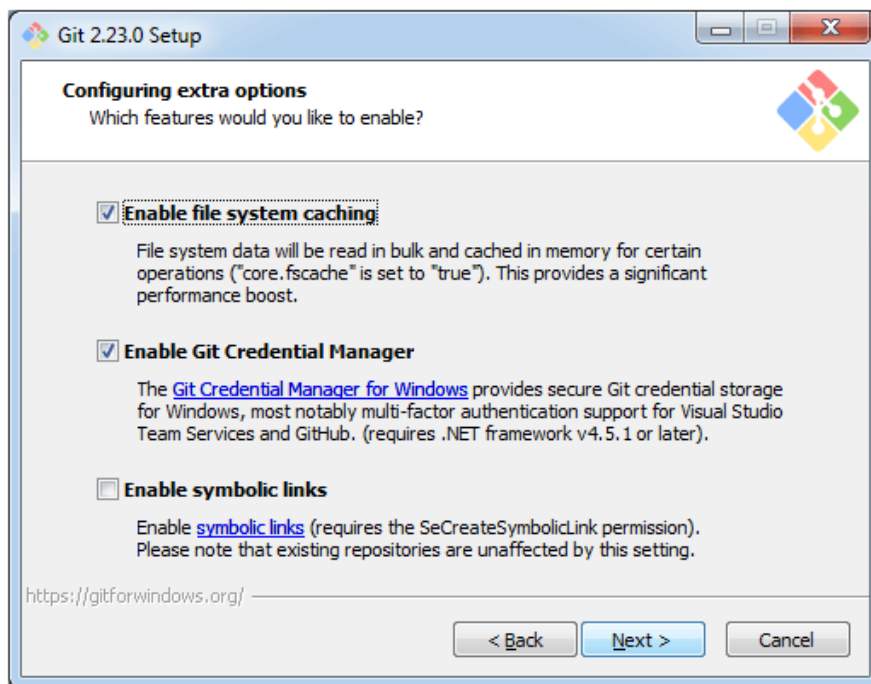


Step7

Select preferred terminal emulator clicks on the **next** to continue.

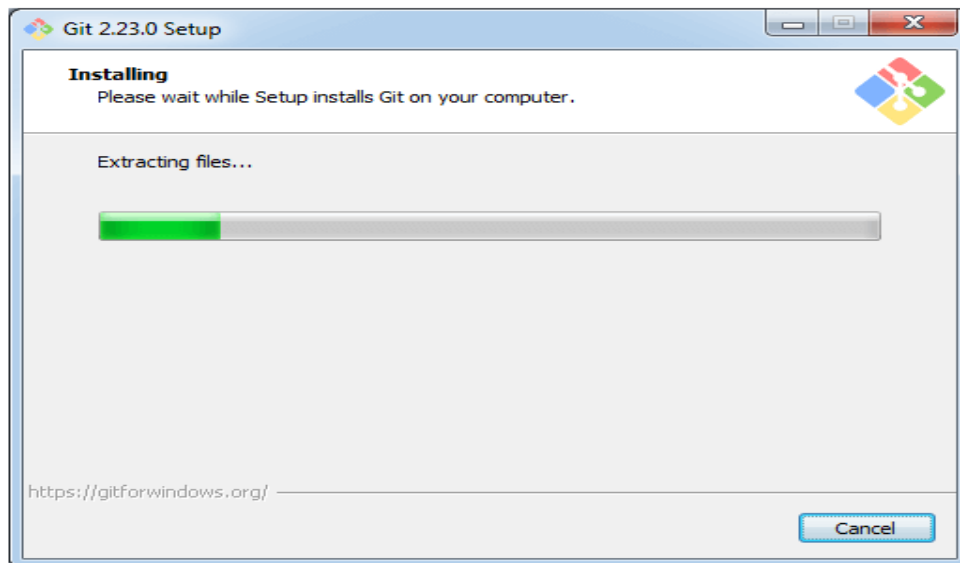


This is the last step that provides some extra features like system caching, credential management and symbolic link. Select the required features and click on the **next** option.



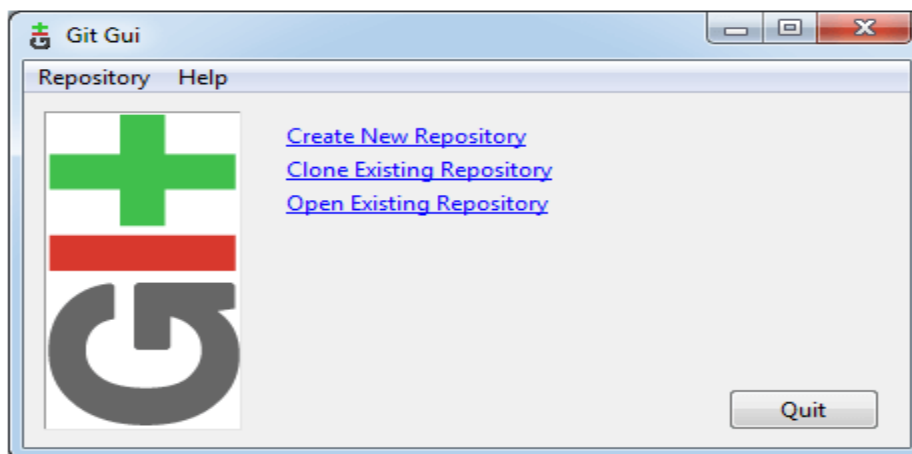
Step9

The files are being extracted in this step.



Therefore, The Git installation is completed. Now you can access the **Git Gui** and **Git Bash**.

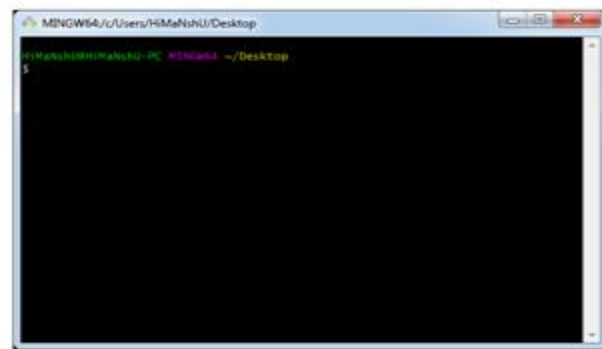
The **Git Gui** looks like as



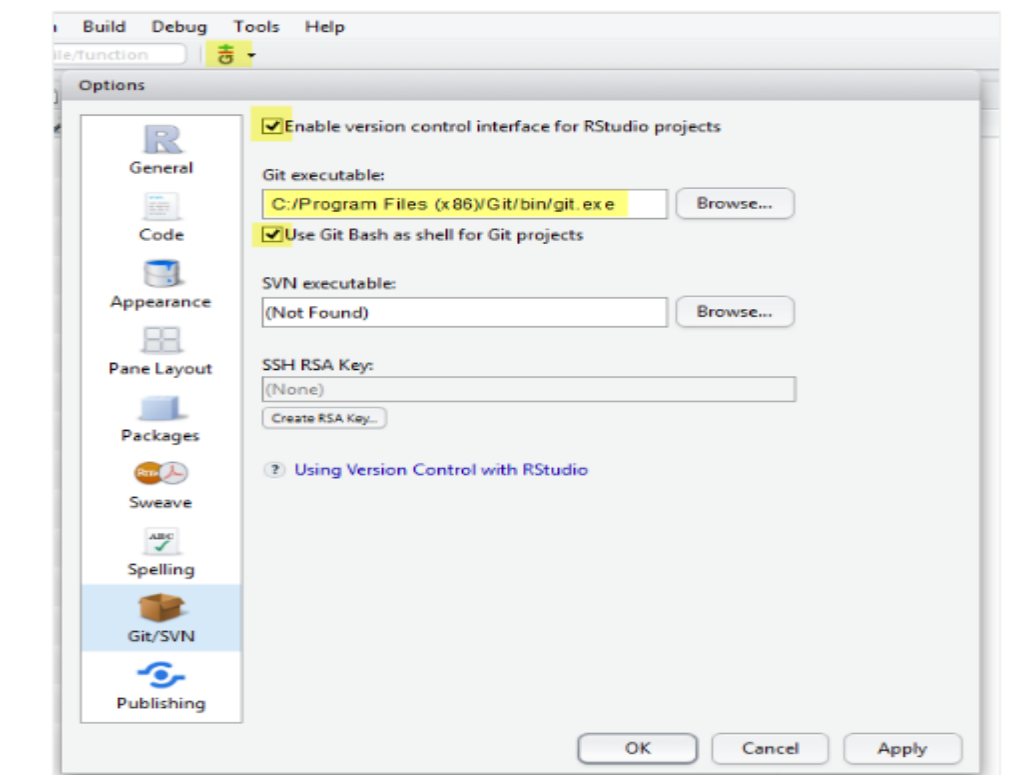
It facilitates with three features.

- Create New Repository
- Clone Existing Repository
- Open Existing Repository

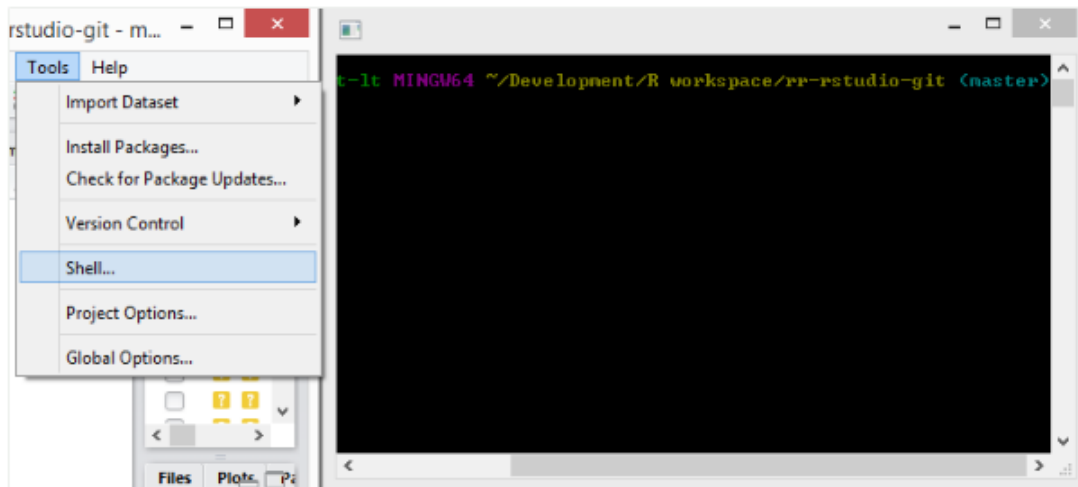
The Git Bash looks like as



- ▶ GitHub account: On [GitHub](#) create yourself a free GitHub account. If you are new to Git follow the 15 min [TryGit Tutorial](#) to get a quick introduction to Git.
- ▶ Setup Git in RStudio: Tell RStudio where to find the Git installation.
- ▶ Open RStudio and go to Tools > Global Options... click on Git/SVN
- ▶ Check Enable version control interface for RStudio projects
- ▶ Set the path to the Git executable that you just installed. Open a shell, if you don't know where Git is installed.



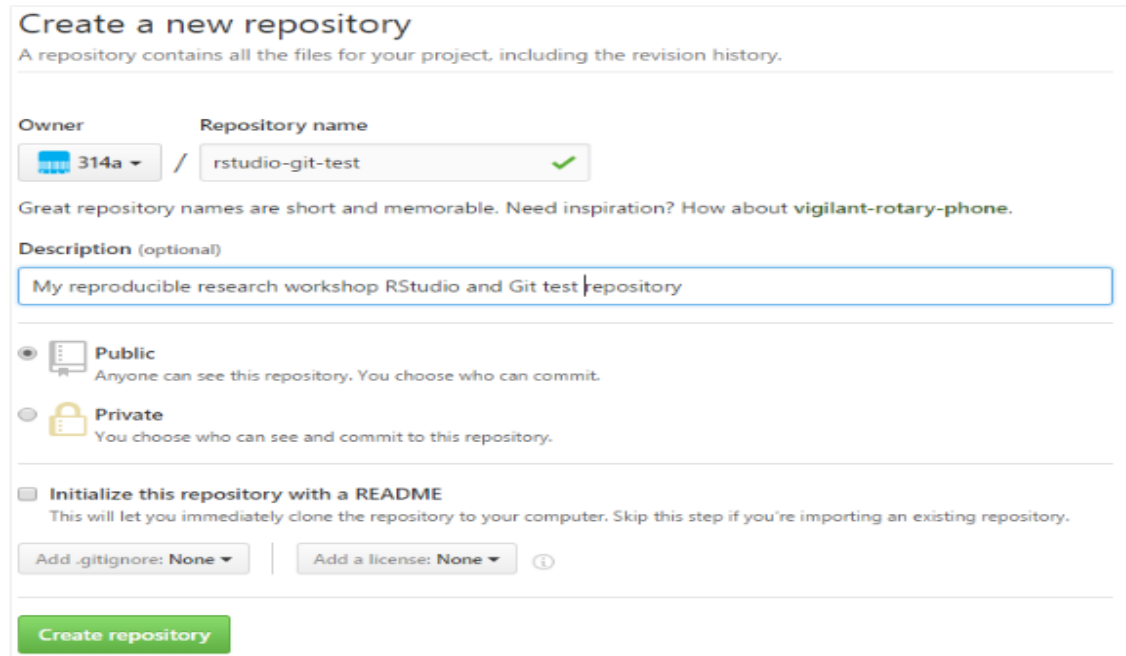
Setup Git: Configure Git and set your *user name* and *email* (the email address you used to register on GitHub). You can directly open the Git prompt from within RStudio. User name and email needs to be set only once. Go to *Tools > Shell* to open the Git Shell to tell Git your username and GitHub email.



Create a new RStudio project with Git

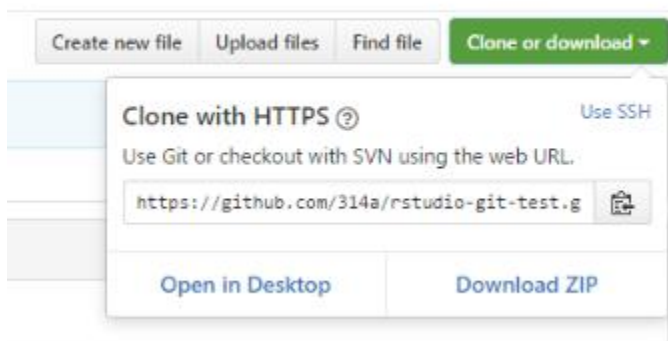
- ▶ There are three ways to create version control for a RStudio project.
- ▶ a) Create a new project and create a local Git repository: Select *File > New Project..*, create a project from a *New Directory* and check the option *Create a git repository*. In order to push to a remote repository later on you add that remote repository by using the Git shell. If you already know which online repository you want to use for your projects, option c) is more convenient.
- ▶ b) Create a new project from a folder under version control: In this case you only need to create a new RStudio project for that directory and version control is automatically enabled. Go to *File > New Project*, select create a new project from an *Existing Directory* and create the project.
- ▶ c) Create a new project based on a remote Git repository: Select *File > New Project..* and from the opening menu select to create a new project from *Version Control*, Choose Git, then provide the repository url (use the https link of the url if you want to avoid all the ssh trouble) from the the repository you want to clone and create the project.

- In this tutorial we create a project based on a remote GitHub repository (option c). Hence we first create a new repository on GitHub and create our GitHub project from that repository.
- 1. Create a new GitHub repository: Login to your GitHub account and [create a new GitHub repository](#). Give your new repository a short and memorable name e.g. rstudio-git-test, check the option to initialize this repository with a README and create the repository.

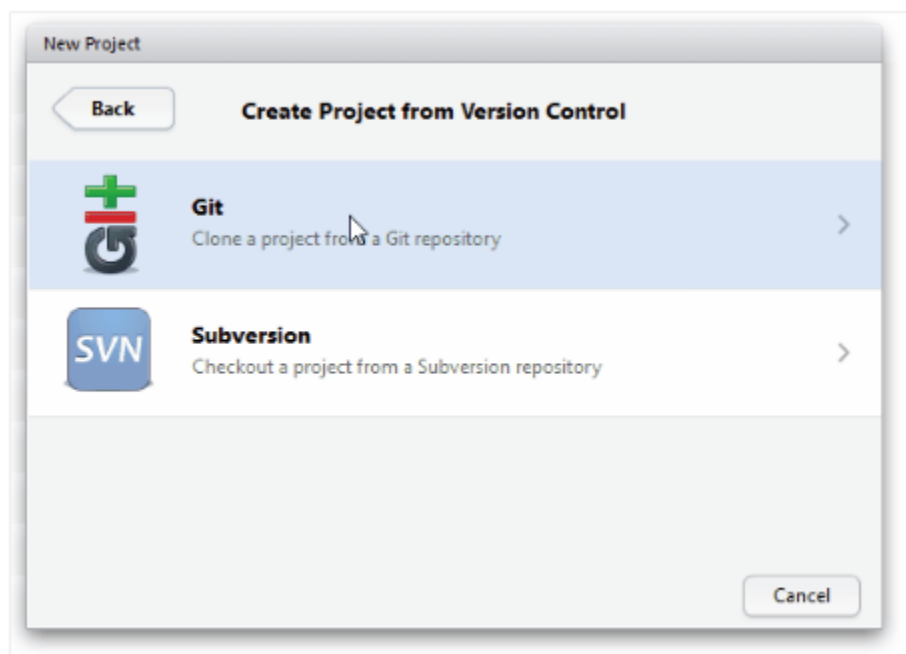
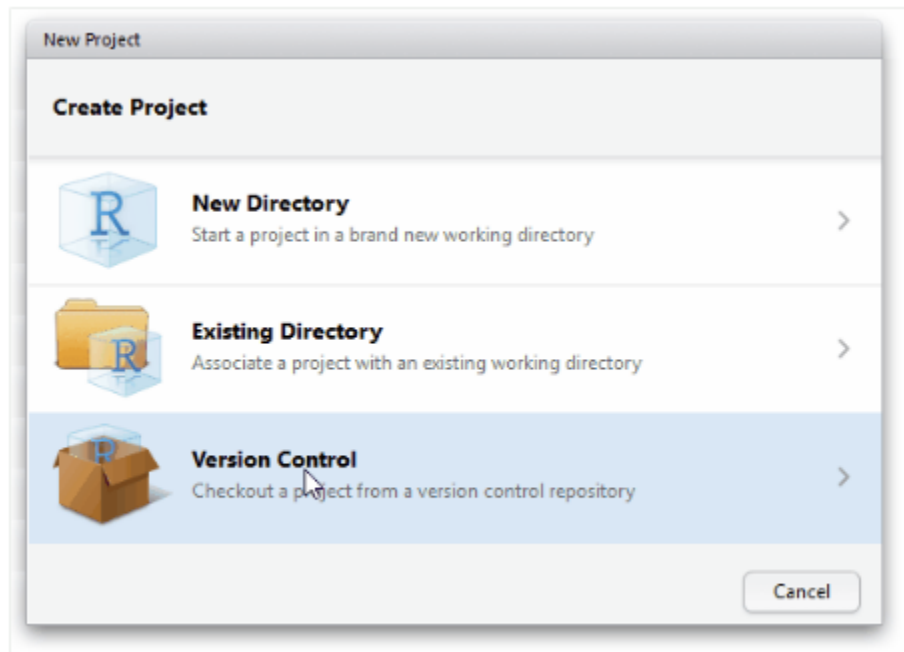


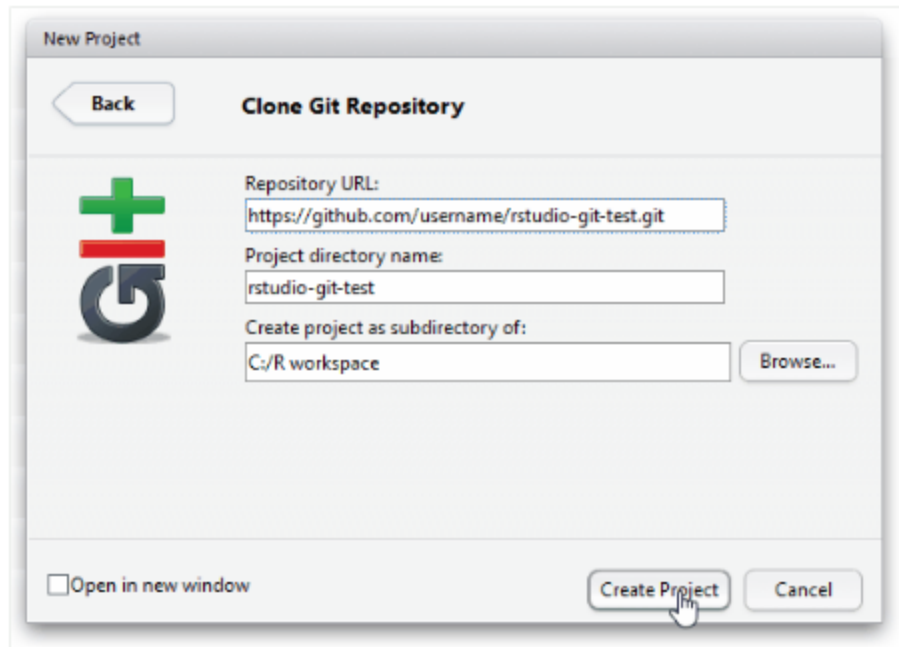
The screenshot shows the GitHub 'Create a new repository' page. At the top, it says 'Create a new repository' and 'A repository contains all the files for your project, including the revision history.' Below this, there are two input fields: 'Owner' with a dropdown menu showing '314a' and 'Repository name' with the text 'rstudio-git-test' and a green checkmark. A note below these fields says 'Great repository names are short and memorable. Need inspiration? How about vigilant-rotary-phone.' There is a 'Description (optional)' text area containing the text 'My reproducible research workshop RStudio and Git test repository'. Below the description, there are two radio button options: 'Public' (selected) with the text 'Anyone can see this repository. You choose who can commit.' and 'Private' with the text 'You choose who can see and commit to this repository.' There is a checkbox labeled 'Initialize this repository with a README' which is checked, with the text 'This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.' Below this, there are two dropdown menus: 'Add .gitignore: None' and 'Add a license: None'. At the bottom, there is a green button labeled 'Create repository'.

- **Copy the repository HTTPS url:** To create a new Git based project in RStudio, we need the repository url. You find the repository HTTPS url on the just created GitHub project page. There press the button *Clone or download* and copy the HTTPS link of the project by clicking the little icon to the right of the URL. The link will be something like `https://github.com/yourusername/rstudio-git-test.git`.



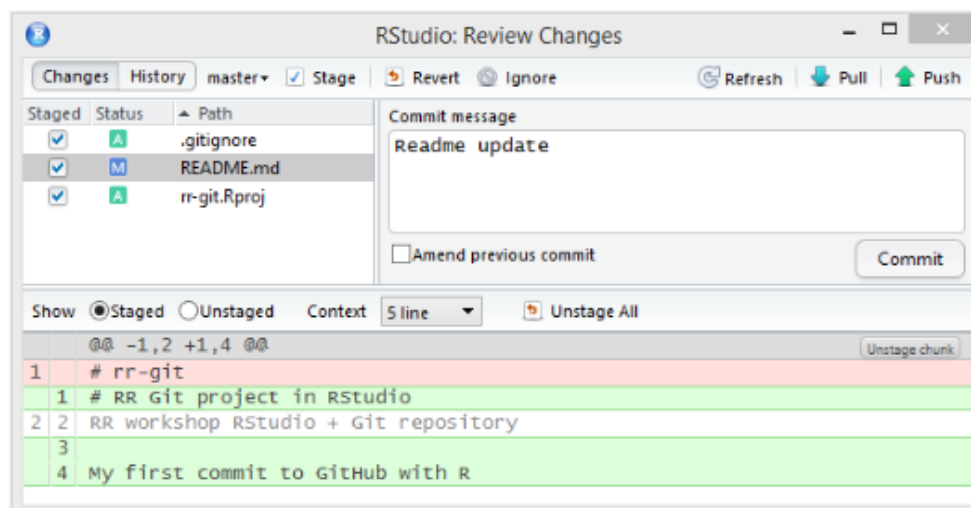
- **Create a new RStudio project with Git version control:** Now everything is ready to create a new project with Git version control in RStudio. In RStudio Select *File > New Project...*, select *Version Control*, Choose *Git*, then provide the repository HTTPS link, select the R workspace folder and create the project. RStudio now copies (*clone* in Git terms) the content of the repository to your project folder. The content of the GitHub repository should now appear in the Files pane of RStudio and you should see there the created README.md.





- ▶ Make local changes, commit and push to GitHub
- ▶ **1. Make local changes:** Open the README.md file and edit and save the file.
- ▶ **# RR project in RStudio** RR workshop RStudio + Git repository My first commit to GitHub with R **2. Commit the changes:** Now we commit the local changes to the local Git repository.

In RStudio press the *Git* icon and select *Commit..* from Git menu (Ctrl+Alt+M) to open the commit window to review the changes in the repository. In the *Staged* column we select by checking the checkbox the files we want to commit. The lower pane shows the edits in green and red of the file. Enter a commit message to indicate what has changed in this commit e.g. Readme update and press the *Commit* button.



- ▶ **Push to the remote repository:** To push the changes to the remote GitHub repository press the *Push* button on the upper right corner of the commit window. You will be prompted to enter the username and password of your GitHub account. Enter them and check on the GitHub page if the changes got pushed to your online repository on GitHub.
- ▶ Now that you successfully pushed your first edits to a remote repository, repeat the above steps with a further file or R script that you create and edit, such as for instance the one below.
- ▶ # Simple R file # R example data.frame "cars" str(cars) # show the structure summary(cars)
summary of the variables plot(cars) # plot speed against distance
- ▶ Fork a repository
- ▶ Forking a project allows you to clone a repository on server-side and make it the starting point of your own project. A *fork* creates a personal copy of another repository. (See also the [Github Forking guide](#))
- ▶ **1. Fork a repository on GitHub:** Open <https://github.com/314a/rr-r-publication> and press the *fork* icon (in the upper right side of the project page) to fork this project to your own github account. On your GitHub page <https://github.com/username> the forked project should appear then in the list of your repositories.