

Eric Pitman Summer Workshop in Computational Science



0. Workshop environment

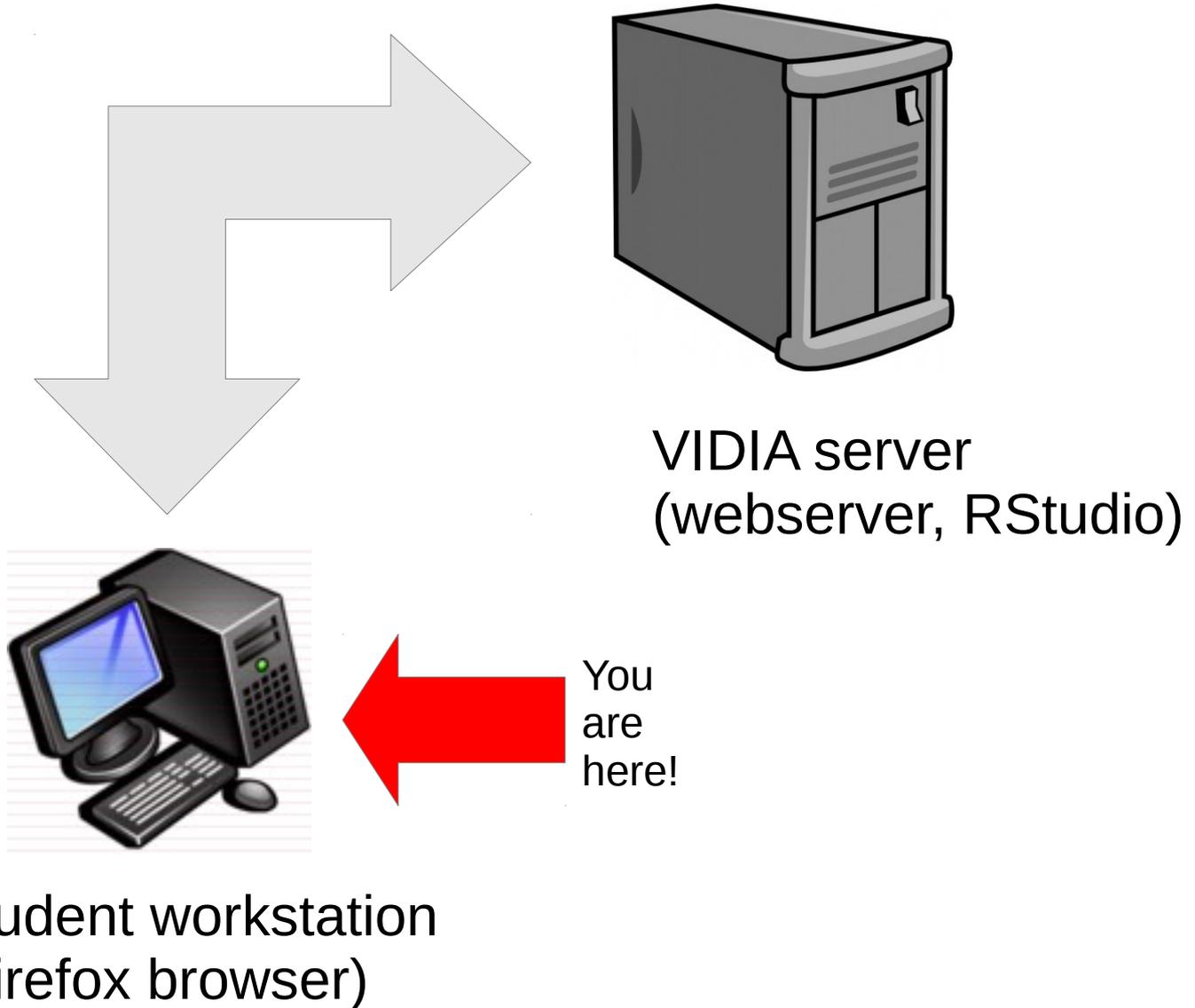


Intro to

0. Workshop environment: set up on vidia.ccr.buffalo.edu

- Register on VIDIA
- Starting the RStudio tool
- Setting up RStudio Projects: GitHub
- File transfer: using WebDAV
- Using groups on VIDIA

Workshop Computing Environment



Register on VIDIA

Use email address:

`firstname.lastname@workshop.ccr.buffalo.edu`

1. On `vidia.ccr.buffalo.edu`, click Register.
2. Specify your full name; choose username and password; specify email address; submit.
3. We will enable your account.



Create New Account screen

Create New Account

Login Information

User Login: **REQUIRED** Combination of lowercase letters and numbers. No spaces or punctuation.

Password: **REQUIRED** Confirm Password: **REQUIRED**

- Must contain at least 1 letter
- Must contain at least 1 number or punctuation mark
- Must be at least 8 characters long
- Must be no longer than 16 characters
- Must contain more than 4 unique characters
- Must not contain easily guessed words

Complete and submit:

- contact information
- username and password
- email address

Fill in required fields and submit

Login Information

User Login: **REQUIRED**
sally
User login name is available

Password: **REQUIRED**

Contact Information

First Name: **REQUIRED**
Sally

Middle Name:
S

Valid E-mail: **REQUIRED**
jsperhac@yahoo.com

Confirm
jsperhac

Important! You **must** confirm receipt of e-mail from webmaster@hubdemo.com to complete registration.

Human Check

5X4x3
[Letters not clear?](#)
[Click to renew CAPTCHA.](#)

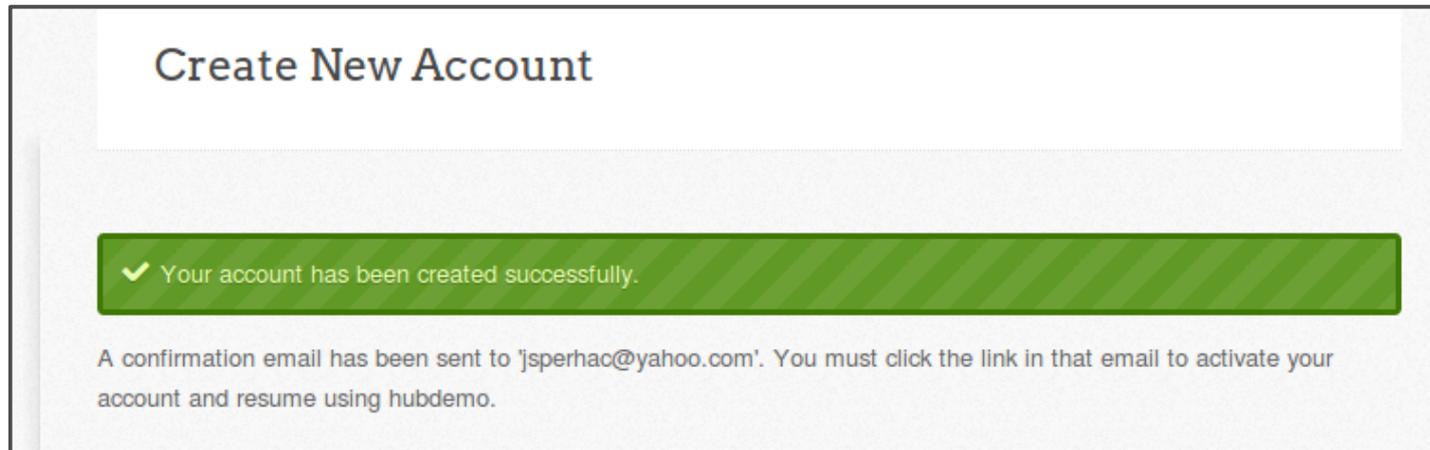
Please enter the following characters you see into the textbox below.
5X4x3

Terms & Conditions

REQUIRED Yes, I have read and agree to the [Terms of Use](#).



New account created



We will enable your account; then, you can sign in to VIDIA.

User Dashboard

Jnet Sperhac ▶ Dashboard Personalize Dashboard

My Groups

- [Workspace Access](#) approved

[All My Groups \(1\)](#) [All Groups](#) [New Group](#)

My Courses

- [CCR Summer Workshop](#)
Section: Default
Active student
- [Test Course for vidia v1.2.1](#)
Section: Default
Active student

[All My Courses \(2\)](#) [All Courses](#)

My Sessions

- [Orange](#) ▼

LAST ACCESSED:
May 06, 2014 @ 1:28pm

[▶ Open](#) [✖ Terminate](#)

- [Rapid Miner v5](#) ▶

Storage ([manage](#))

0% of 0.9GB

My Projects

- [Jnet Test Project](#)
By me | manager
- [Orange Explorations for IITG](#)
By J M Sperhac | collaborator

[All My Projects](#) [All Projects](#) [New Project](#)

Resources

[Simulation Tools](#)

- [RapidMiner](#)
- [Orange](#)
- [RStudio](#)

[Publications](#)
[All Resources](#)

My Tools

[Recent](#) [Favorites](#) [All Tools](#)

- [Rapid Miner v5](#) ▶
- [Workspace](#) ▶
- [Orange](#) ▶

These are your most recently used tools.

Running Rstudio tool on VIDIA

VIDIA Dashboard: RStudio Tool

The screenshot displays the VIDIA Dashboard for user J M Sperhac. The interface includes a navigation sidebar on the left, a main content area with several tool and resource panels, and a user profile section at the top left.

User Profile: J M Sperhac | Dashboard

Navigation Sidebar:

- Dashboard
- Profile
- Groups (4)
- Account
- Contributions (11)
- Collections (1)
- Messages (25)
- Projects (2)

My Tools (Recent):

- Rapid Miner v5
- Workspace
- Orange
- RStudio

Resources (Simulation Tools):

- RapidMiner
- Orange
- RStudio

My Courses:

- CCR Summer Workshop (Active, instructor)
- Test Course for vidia v1.2.1 (Active, instructor)

My Groups:

- POLS 200, Approaches to Political Science (manager)
- SOCL-209, Social Research (manager)

A red arrow points to the RStudio tool in the 'My Tools' section.



Improved Simulation Through Collaboration

Jeanette Sperhac (jsperhac)

Logout My Account 16 New Messages

Rensselaer Polytechnic Institute • Stony Brook University • University at Buffalo • Brookhaven National Laboratory • NYSERNet

- HOME
- USER INFO
- ACCOUNTS
- SOFTWARE
- ABOUT
- RESEARCH GROUPS
- HELP! (?)

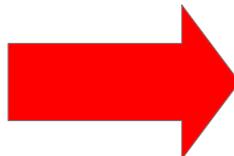
You are here: Home » Tools » R Studio Tool » About

R Studio Tool [edit](#)

By [Jeanette Sperhac](#)¹, [Steve Gallo](#)²

1. SUNY at Buffalo 2. Center for Computational Research, SUNY at Buffalo

RStudio is an IDE for the R language. It provides a multipane window environment for statistical computing and graphics in R.



Launch Tool

Version 1.0 - published on 12 Feb 2013

Open source: [license](#) | [download](#)

[View All Supporting Documents](#)

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0 Citation(s)

About Citations

SEE ALSO

No results found.

Category

[Tools](#)

Published on

12 Feb 2013

Abstract

The R Studio Tool is a deployment of the RStudio IDE on the hpc2 hub. It provides a multipane window environment for statistical computing and graphics in R.

R Studio provides syntax highlighting, code completion, and smart indentation; ability to execute R code from the source editor; ability to easily manage multiple working directories using projects; and ability to quickly navigate code using type-ahead search.



Improved Simulation Through Collaboration

Jeanette Sperhac (jsperhac)

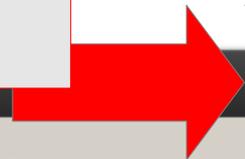
Logout My Account 16 New Messages

- HOME
- USER INFO
- ACCOUNTS
- SOFTWARE
- ABOUT
- RESEARCH GR...

HELP! (?)

You are here: Home » resources » Tools » R Studio Tool » Session: 1123 "R Studio Tool"

RStudio session:
Terminate
Suspend



R Studio Tool

File Edit Code View Plots Session Project Build Tools Help

Go to file/function Project: (None)

```
1 # plot examples from statmethods.net
2 # using mtcars dataset
3 # 3 May 2013
4 # JMS
5
6
7 # pch controls point selection
8 # col controls point color
9 plot(mtcars$wt, mtcars$mpg, xlab="Veh
10     ylab="Vehicle MPG, miles/gallon"
11     pch=8, col="darkblue")
12 abline(lm(mtcars$mpg~mtcars$wt), col=
13 title("Regression of Vehicle MPG on W
14
15 # ----- Histograms -----
16
```

Workspace History

Files Plots Packages Help

New Folder Delete Rename More

| Name | Size | Modified |
|-------------|--------|-----------------------|
| .Rhistory | 1.4 KB | May 13, 2013, 4:28 PM |
| apps | | |
| checkSubmit | | |

hpc2 - resources: Tools: R Studio Tool: Session: 1123 "R Studio Tool" - Mozilla Firefox

hpc2 - resources: Tools: R Stud... +

https://hpc2.org/tools/rstudiotool/session/1123

Most Visited Getting Started

Disable Cookies CSS Forms Images Information Miscellaneous Outline Resize Tools View Source

```
6
7 # pch controls point selection
8 # col controls point color
9 plot(mtcars$wt, mtcars$mpg, xlab="Veh
10      ylab="Vehicle MPG, miles/gallon"
11      pch=8, col="darkblue")
12 abline(lm(mtcars$mpg~mtcars$wt), col=
13 title("Regression of Vehicle MPG on W
14
15 # ----- Histograms -----
16
```

1:1 (Top Level) R Script

Console ~

distribution details.

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.

> |

Files Plots Packages Help

New Folder Delete Rename More

Home

| Name | Size | Modified |
|--------------|--------|------------------------|
| .Rhistory | 1.4 KB | May 13, 2013, 4:28 PM |
| apps | | |
| checkSubmit | | |
| data | | |
| possum.RData | 2.6 KB | May 13, 2013, 11:26 AM |
| R | | |

Storage (manage) 0% of 0GB

1024 x 768

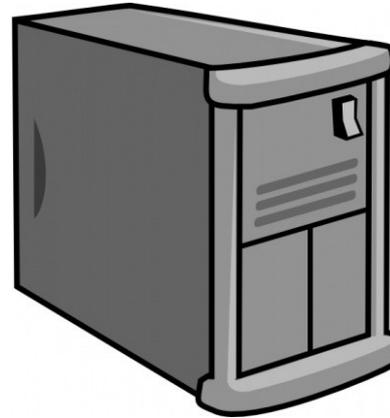
New Window

RStudio window:
Pop out
Refresh
Expand



Using Github

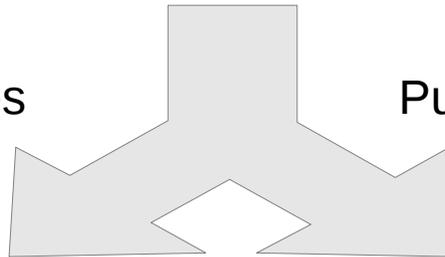
GitHub



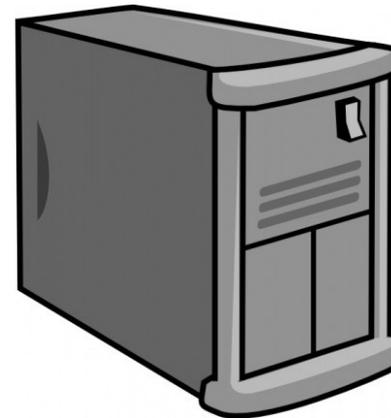
GitHub server

View files

Pull files and data

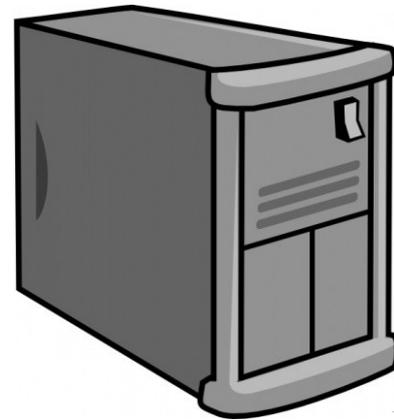


Student workstation



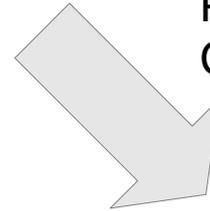
VIDIA server

Workshop Files and Data: GitHub

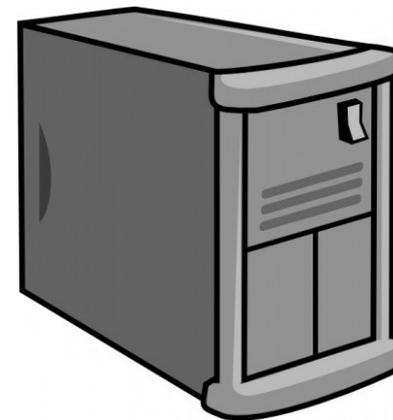


GitHub server

Pull R source files
Create RStudio project

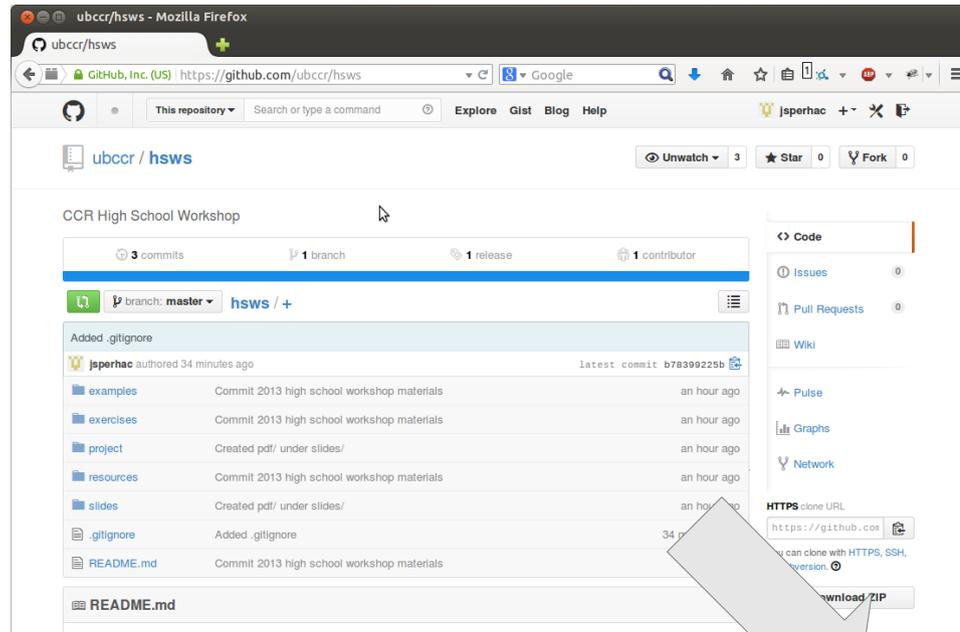


Student workstation

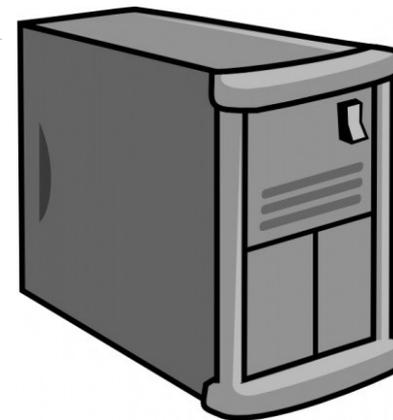


VIDIA server

Workshop Files and Data: GitHub



Student workstation

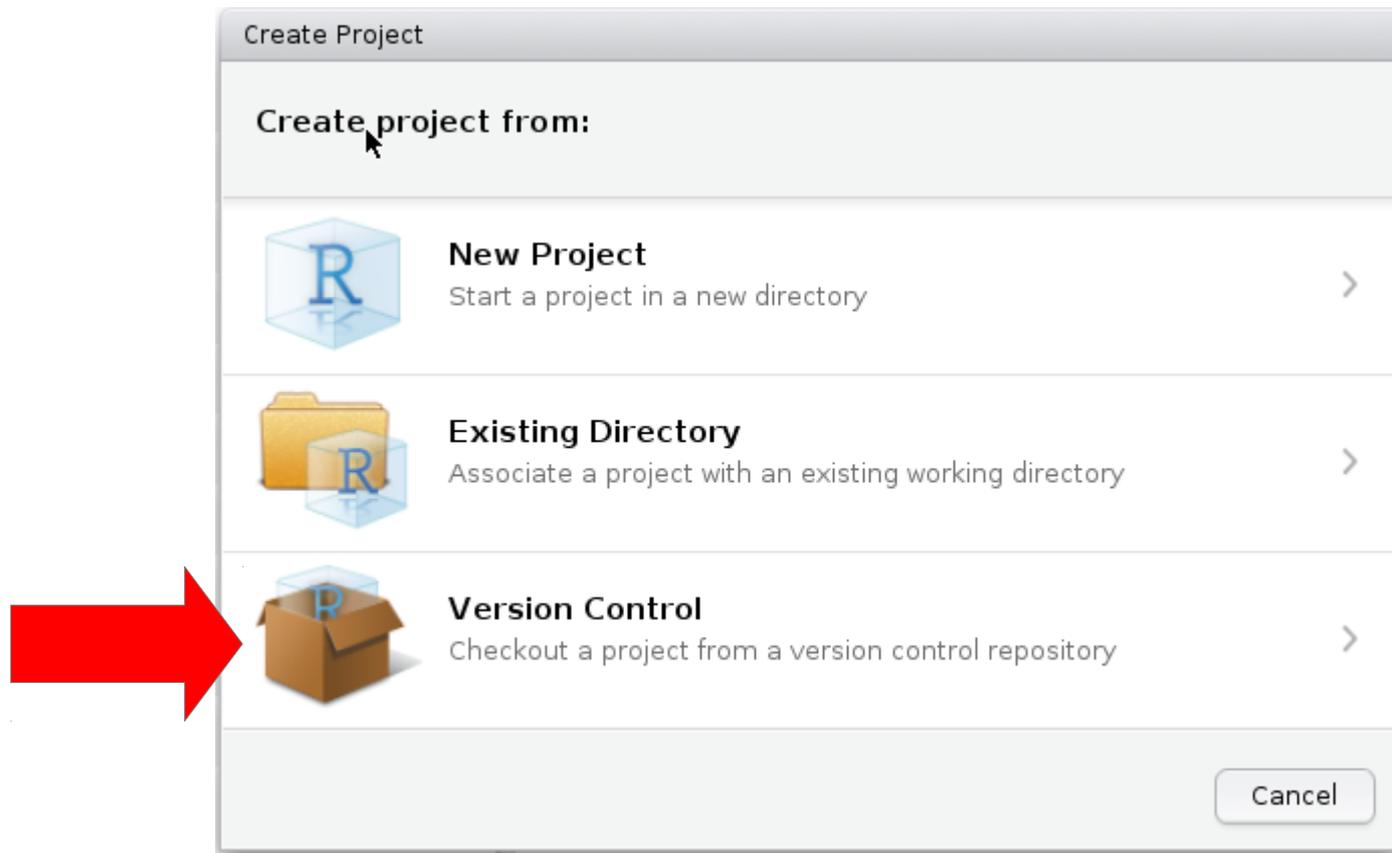


VIDIA server

Rstudio Project management

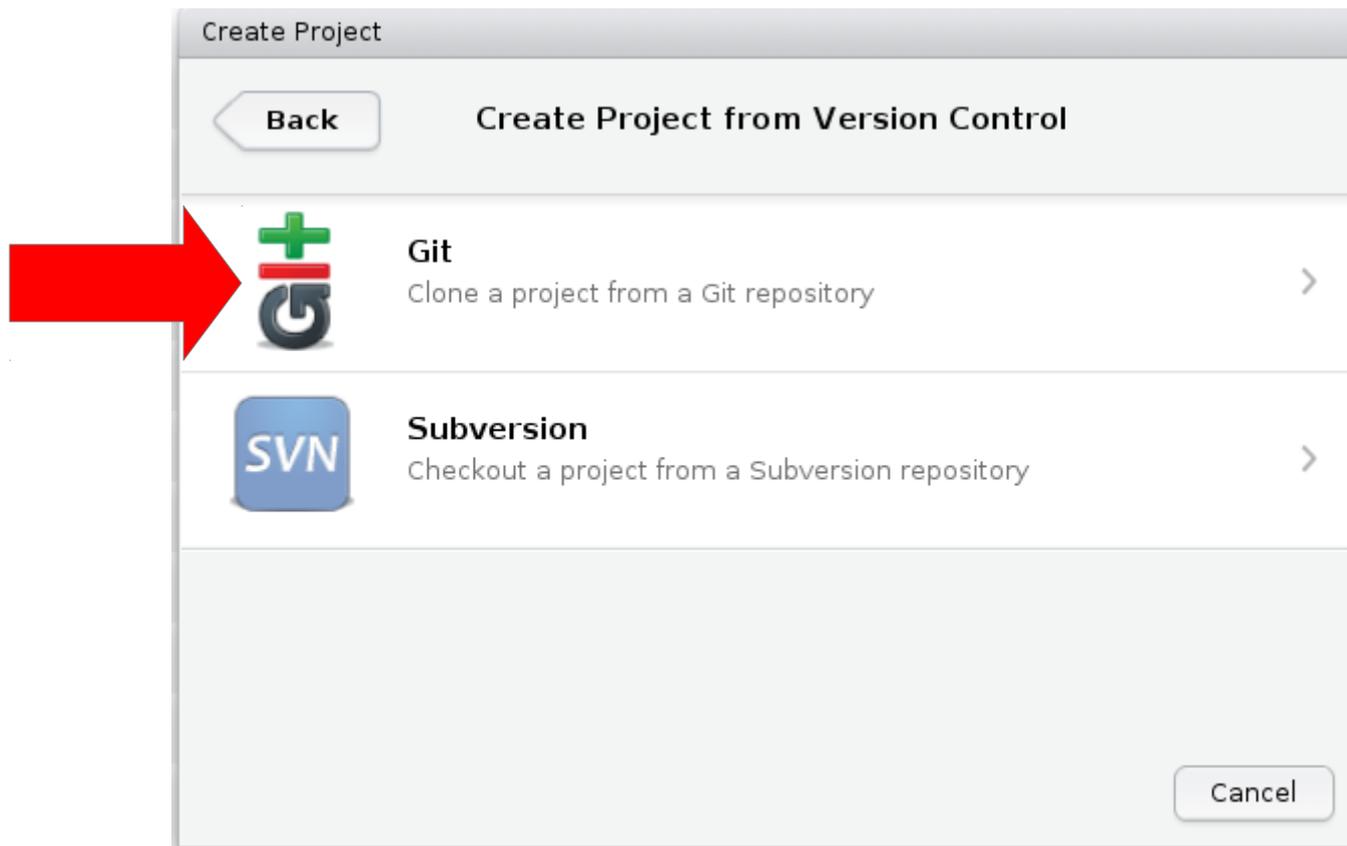
Create Project in RStudio

1. In the RStudio menu:
 - Select Project: Create Project
 - Select Version Control



Create Project in RStudio

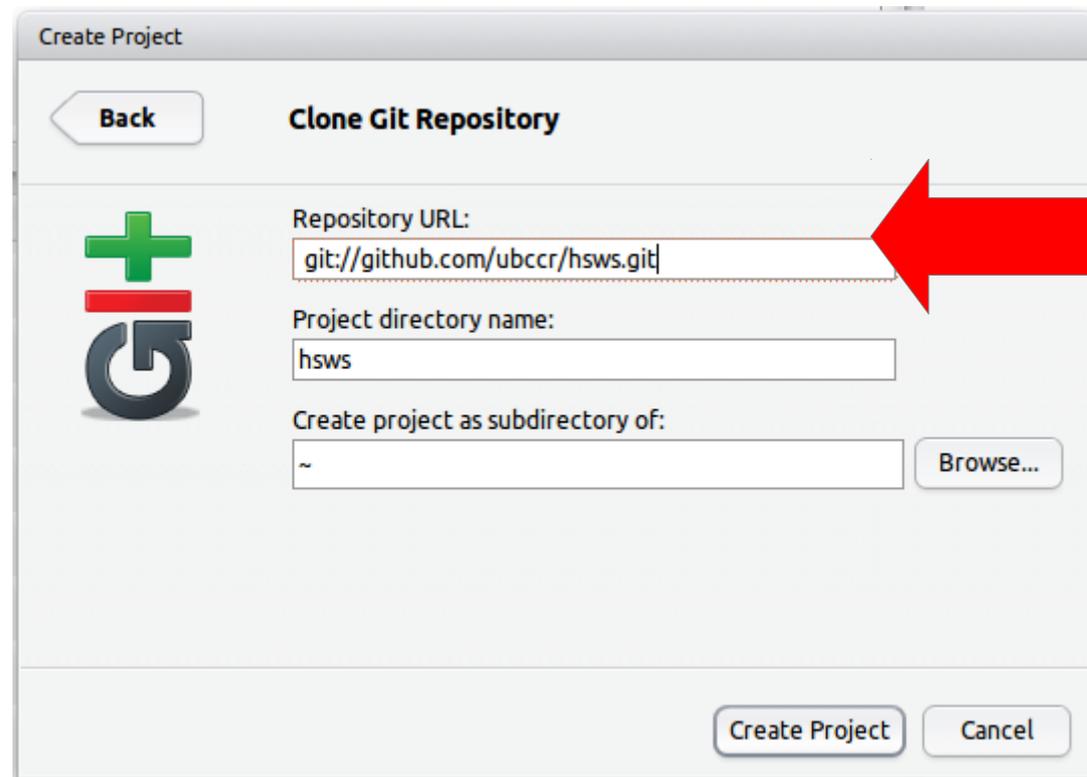
2. In RStudio:
Next, select Git



Create Project in RStudio

3. In RStudio:

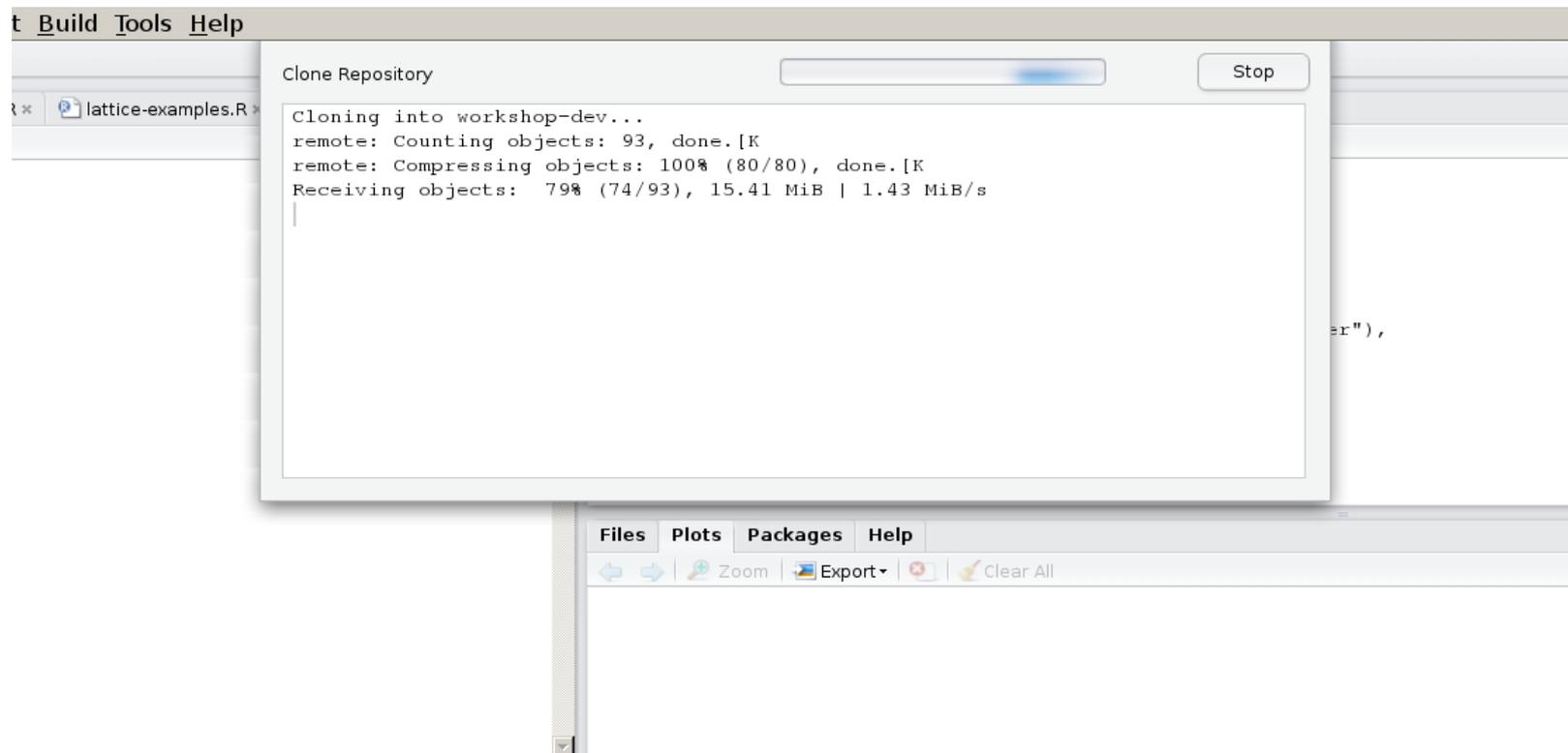
- Type the Repository URL as shown
- Use a unique project directory name



`git://github.com/ubccr/hsws.git`

Create Project in RStudio

4. RStudio copies the files from GitHub to your home directory on VIDIA.



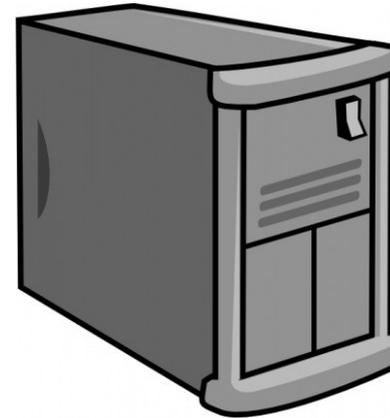
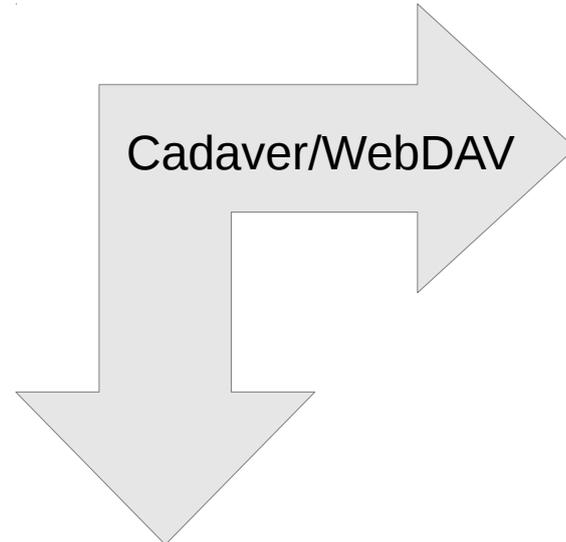


Create Project in RStudio

- Selecting the project sets the working directory
- Your RStudio project contains directories:
 - examples
 - exercises
 - project
 - resources

File transfer to and from VIDIA

File Transfer



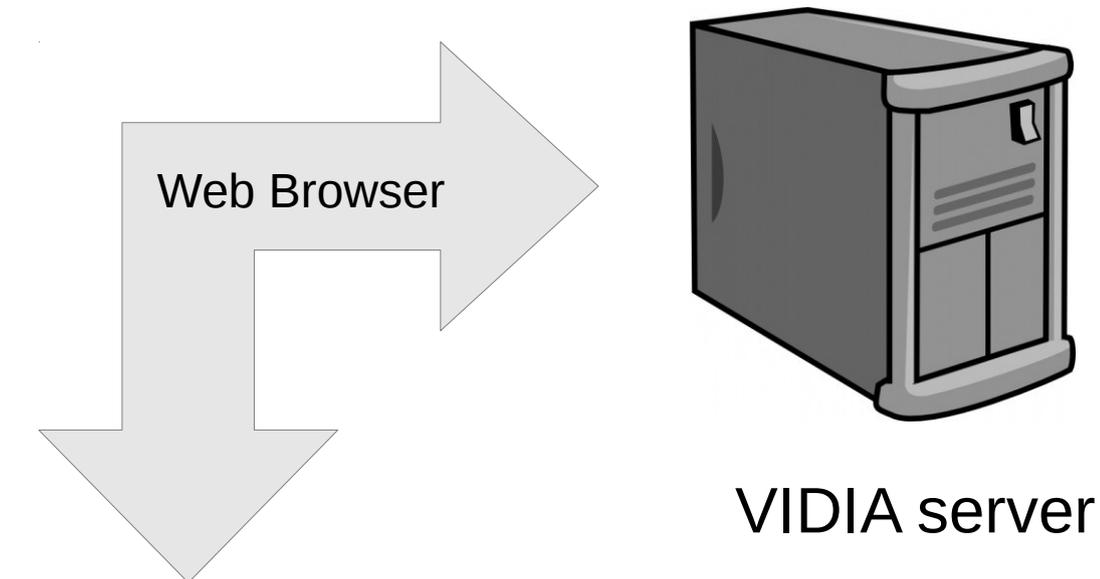
VIDIA server



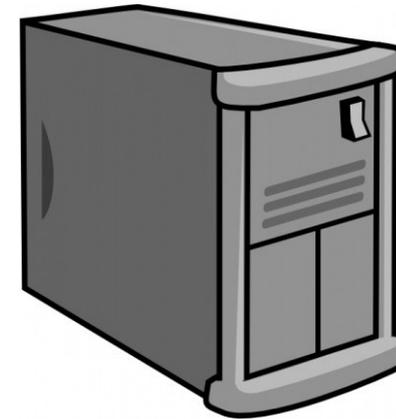
Student workstation

You'll need file transfer for adding graphics files to your presentation slides

View/Browse your Files



Student workstation



VIDIA server

To browse your directory on VIDIA:

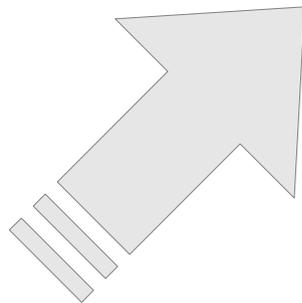
1. Start a web browser
2. Enter URL:
<https://vidia.ccr.buffalo.edu/webdav>
3. Authenticate when prompted

File Transfer: WebDAV

```
$ cadaver https://vidia.ccr.buffalo.edu:443/webdav
```



Student workstation



To transfer files to/from VIDIA:

1. Start a terminal window
2. Issue cadaver command
3. Sign in with your VIDIA user credentials when prompted
4. Use 'ls', 'cd', 'get', 'put'

Much like typical ftp commands

Groups on VIDIA

Browse HUBzero Groups

Groups: Browse

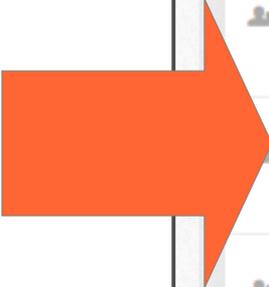
Search

All Open Restricted Invite only Closed | Alias | Title

Groups (1-5 of 5)

All A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

| | |
|--|-------------|
|  A Test Group atestgroup | Invite Only |
|  jmsGroup jmsgroup | Open |
|  R Workshop rworkshop | Open |
|  R Workshop Staff rworkshopstaff | Closed |



HUBzero Group Page

The screenshot displays the HUBzero Group Page for 'R Workshop'. On the left is a navigation sidebar with options: Overview (selected), Members (4), Wiki (1), Messages, Resources (2), Discussion, Blog, and Wish List. The main content area features a group profile picture, a 'Group Member' button, and a breadcrumb trail: 'R Workshop > Overview'. Below this are tags for 'data visualization', 'R programming', 'statistics', and 'workshop'. The 'ABOUT THE GROUP' section contains an information icon and the text: 'The R Workshop group consists of students and instructors for the R Workshop.' The 'GROUP MEMBERS' section lists four members: Jnet Sperhac, J M Sperhac (UB CCR), Jeanette M Sperhac, and Sally S Smith.

R Workshop ▶ Overview

• data visualization • R programming • statistics • workshop

ABOUT THE GROUP

i The R Workshop group consists of students and instructors for the R Workshop.

GROUP MEMBERS

| | | |
|--|---------------------------|------------------------------|
| | Jnet Sperhac | J M Sperhac UB CCR |
| | Jeanette M Sperhac | Sally S Smith |

HUBzero Resources

Resources: Teaching Materials Teaching Materials Go

Tag Resources Sort by Title Info

| | | |
|------------------------|-----------------------------|---|
| [All] | > Introductory R References | > |
| data structures (1) | > Lecture 1 | > |
| data visualization (2) | > Lecture 2 | > |
| R programming (7) | > Lecture 3 | > |
| reference (1) | > Lecture 4 | > |
| statistics (1) | > Lecture 5 | > |
| variables (1) | > Plotting Examples | > |
| | R Workshop Project | |
| | R Workshop Staff Materials | |

[Introductory R References](#)

Reference material: introductory R textbooks

[Learn more >](#)

Download (PDF)

[review\(s\) \(Review this\)](#)

[Add to your favorites!](#)

5 Functions: a Short Programming Example

6 Scalars, Vectors, Arrays and Matrices

- 6.1 "Declarations"
- 6.2 Generating Useful Vectors with ":", seq() and rep()
- 6.3 Vector Arithmetic and Logical Operations
- 6.4 Recycling
- 6.5 Vector Indexing
- 6.6 Vector Element Names
- 6.7 Matrices
 - 6.7.1 General Operations
 - 6.7.2 Matrix Row and Column Names