

Digital humanities

Posit Cloud, RStudio: jak začít

Jindřich Marek

1. Cloudové řešení: Posit Cloud

- <https://posit.cloud/>
- vytvořit účet (Free)

Friction free data science

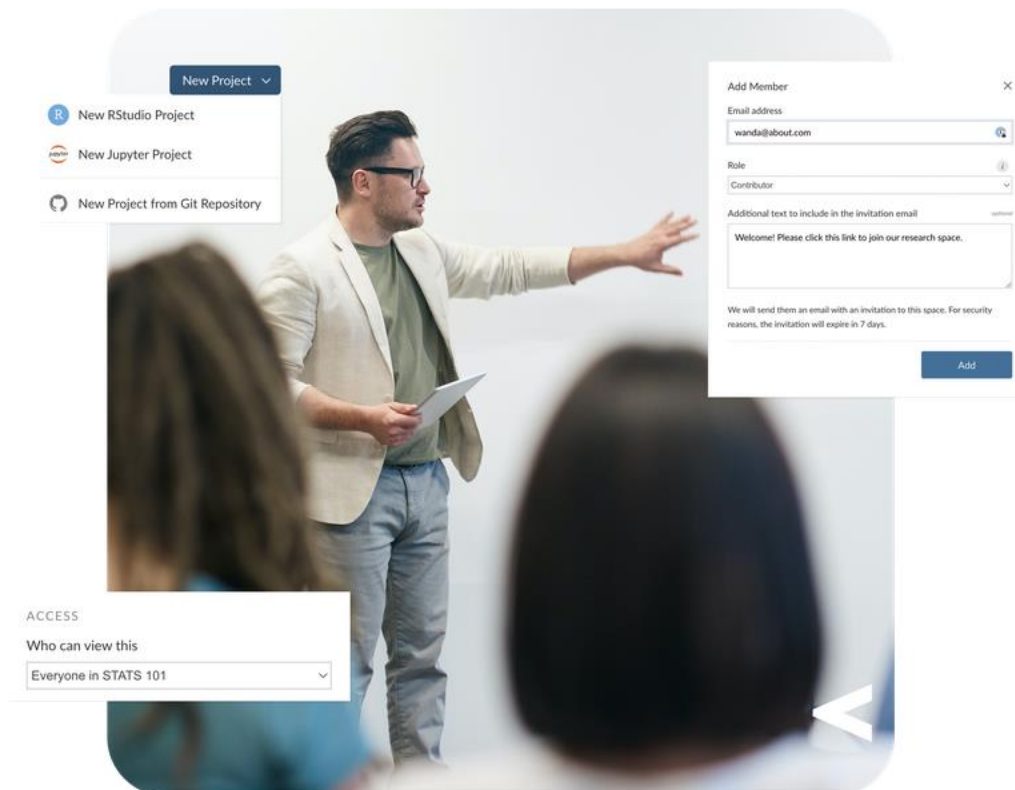
Posit Cloud (formerly RStudio Cloud) lets you access Posit's powerful set of data science tools right in your browser – no installation or complex configuration required.

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If you already have a shinyapps.io account, you can [log in](#) using your existing credentials.

Get to know Cloud

Do, share, teach and learn data science using the RStudio IDE or Jupyter Notebooks, directly from your



Cloud Free Features

SHARED SPACES	1	i
PROJECTS	25	i
OUTPUTS	25	i
COMPUTE HOURS	25 included per month	i
MAX RAM	1 GB	i
MAX CPU	1 CPU	i
MAX EXECUTION	1 hour	i
CONCURRENT PROJECTS	3	i
DATA CONNECTIONS	1 per space	i
PROJECT TEMPLATES	1 per space	i
ONLINE SUPPORT	No	i
BETA FEATURES	No	i
SSO	No	i

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Questions? [Contact Us.](#)

\$0 / forever

If you make limited, occasional use of Posit Cloud, have access to an organization account, or just want to explore Cloud to see if it's right for you, our Cloud Free plan is all you need.

Sign Up

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

R 4.3.2

Untitled1 x

1

1:1 (Top Level) R Script

Console Terminal Background jobs

R 4.3.2 · /cloud/project/

R version 4.3.2 (2023-10-31) -- "Eye Holes"
Copyright (C) 2023 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (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.

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.

> |

Environment History Connections Tutorial

Import Dataset 133 MiB

R Global Environment

Environment is empty

Files Plots Packages Help Viewer Presentation

New Folder New Blank File Upload Delete Rename More

Cloud > project

	Name	Size	Modified
	..		
	.Rhistory	0 B	Mar 5, 2024, 10:22 AM
	project.Rproj	205 B	Mar 5, 2024, 10:23 AM

2. Offline alternativa: R a RStudio desktop



- Interpret języka R
 - <https://mirrors.nic.cz/R/>
- RStudio
 - <https://posit.co/download/rstudio-desktop/>
- Rtools
 - <https://cran.r-project.org/bin/windows/Rtools/>



78:1 Chunk 2 R Markdown

>

R Global Environment

Files | Tools | Packages | Help | View |  

Name	Description	Version		
<input type="checkbox"/> askpass	Safe Password Entry for R, Git, and SSH	1.1		
<input type="checkbox"/> assertthat	Easy Pre and Post Assertions	0.2.1		
<input type="checkbox"/> backports	Reimplementations of Functions Introduced Since R-3.0.0	1.3.0		
<input type="checkbox"/> base64enc	Tools for base64 encoding	0.1-3		
<input type="checkbox"/> bit	Classes and Methods for Fast Memory-Efficient Boolean Selections	4.0.4		
<input type="checkbox"/> bit64	A S3 Class for Vectors of 64bit Integers	4.0.5		
<input type="checkbox"/> blob	A Simple S3 Class for Representing Vectors of Binary Data ('BLOBS')	1.2.2		
<input type="checkbox"/> broom	Convert Statistical Objects into Tidy Tibbles	0.7.10		
<input type="checkbox"/> callr	Call R from R	3.7.0		
<input type="checkbox"/> cellranger	Translate Spreadsheet Cell Ranges to Rows and Columns	1.1.0		
<input type="checkbox"/> classInt	Choose Univariate Class Intervals	0.4-3		
<input type="checkbox"/> cli	Helpers for Developing Command Line Interfaces	3.1.0		
<input type="checkbox"/> clipr	Read and Write from the System Clipboard	0.7.1		
<input type="checkbox"/> colorspace	A Toolbox for Manipulating and Assessing Colors and Palettes	2.0-2		
<input type="checkbox"/> cpp11	A C++11 Interface for R's C Interface	0.4.2		
<input type="checkbox"/> crayon	Colored Terminal Output	1.4.2		
<input type="checkbox"/> crosstalk	Inter-Widget Interactivity for HTML Widgets	1.2.0		
<input type="checkbox"/> curl	A Modern and Flexible Web Client for R	4.3.2		
<input type="checkbox"/> data.table	Extension of 'data.frame'	1.14.2		
<input type="checkbox"/> DBI	R Database Interface	1.1.1		

~/Documents/R/dvdm-correspondence - master - RStudio

Go to file/function Addins

Console Terminal x

~/Documents/R/dvdm-correspondence/

Console

```
R version 3.5.1 (2018-07-02) -- "Feather Spray"
Copyright (C) 2018 The R Foundation for Statistical Computing
Platform: x86_64-apple-darwin15.6.0 (64-bit)

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Natural language support but running in an English locale

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

> |
```

Environment History Connections Git

Import Dataset

Global Environment

Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > Documents > R > dvdm-correspondence

	Name	Size	Modified
	..		
<input type="checkbox"/>	.gitignore	75 B	Aug 7, 201
<input type="checkbox"/>	.Rhistory	17.9 KB	Nov 7, 201
<input type="checkbox"/>	data		
<input type="checkbox"/>	dvdm-correspondence.Rproj	205 B	Nov 9, 201
<input type="checkbox"/>	dvdm-flexdashboard.Rmd	6.4 KB	Oct 2, 201
<input type="checkbox"/>	plots		
<input type="checkbox"/>	README.md	2.1 KB	Jun 24, 20
<input type="checkbox"/>	rmarkdown-docs		
<input type="checkbox"/>	rsconnect		
<input type="checkbox"/>	scripts		
<input type="checkbox"/>	shiny-apps		

Output

~/Documents/R/dvdm-correspondence - master - RStudio

Go to file/function Addins

letters_sf.R x

Source on Save Run Source

Script editor

```
1 ### Make great circles for routes as sf object ###
2
3 # Load libraries
4 library(tidyverse)
5 library(sp)
6 library(sf)
7 library(geosphere)
8
9 # Load letters and geographic data
10 letters <- read_csv("data/dvdm-correspondence-1591.csv")
11 locations <- read_csv("data/locations-1591.csv")
12 geo_data <- select(locations, place:lat) # simplify locations data to only necessary variables
13
14 # Join letters data to locations data
15
16 geo_letters <- letters %>%
17   inner_join(geo_data, by = c("source" = "place")) %>%
18   inner_join(geo_data, by = c("destination" = "place")) %>%
19   rowid_to_column("id")
```

11:1 (Top Level) R Script

Environment History Connections Git

Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > Documents > R > dvdm-correspondence > scripts

	Name	Size	Modified
<input type="checkbox"/>	geocode-data.R	2.4 KB	Sep 27, 20
<input type="checkbox"/>	ggmap-gc_routes.R	2.3 KB	Feb 8, 201
<input type="checkbox"/>	ggplot2-charts.R	1019 B	Jan 10, 20:
<input type="checkbox"/>	ggraph-networks.R	2.6 KB	Feb 8, 201
<input type="checkbox"/>	igraph-network-objects.R	1.7 KB	Feb 8, 201
<input type="checkbox"/>	import-raw-data.R	438 B	Sep 26, 20
<input type="checkbox"/>	leaflet-gc_routes.R	3.4 KB	Feb 8, 201
<input type="checkbox"/>	letters_sf.R	1.6 KB	Feb 8, 201
<input type="checkbox"/>	networkd3-vizualizations.R	1.3 KB	Feb 8, 201
<input type="checkbox"/>	sf-ggplot-map.R	5.2 KB	Mar 17, 20
<input type="checkbox"/>	sf-ggraph-map.R	4 KB	Mar 17, 20
<input type="checkbox"/>	sf-linestring-alternative.R	1.6 KB	Feb 8, 201
<input type="checkbox"/>	sf-linestring.R	2.5 KB	Feb 8, 201

Console Terminal

~/Documents/R/dvdm-correspondence/

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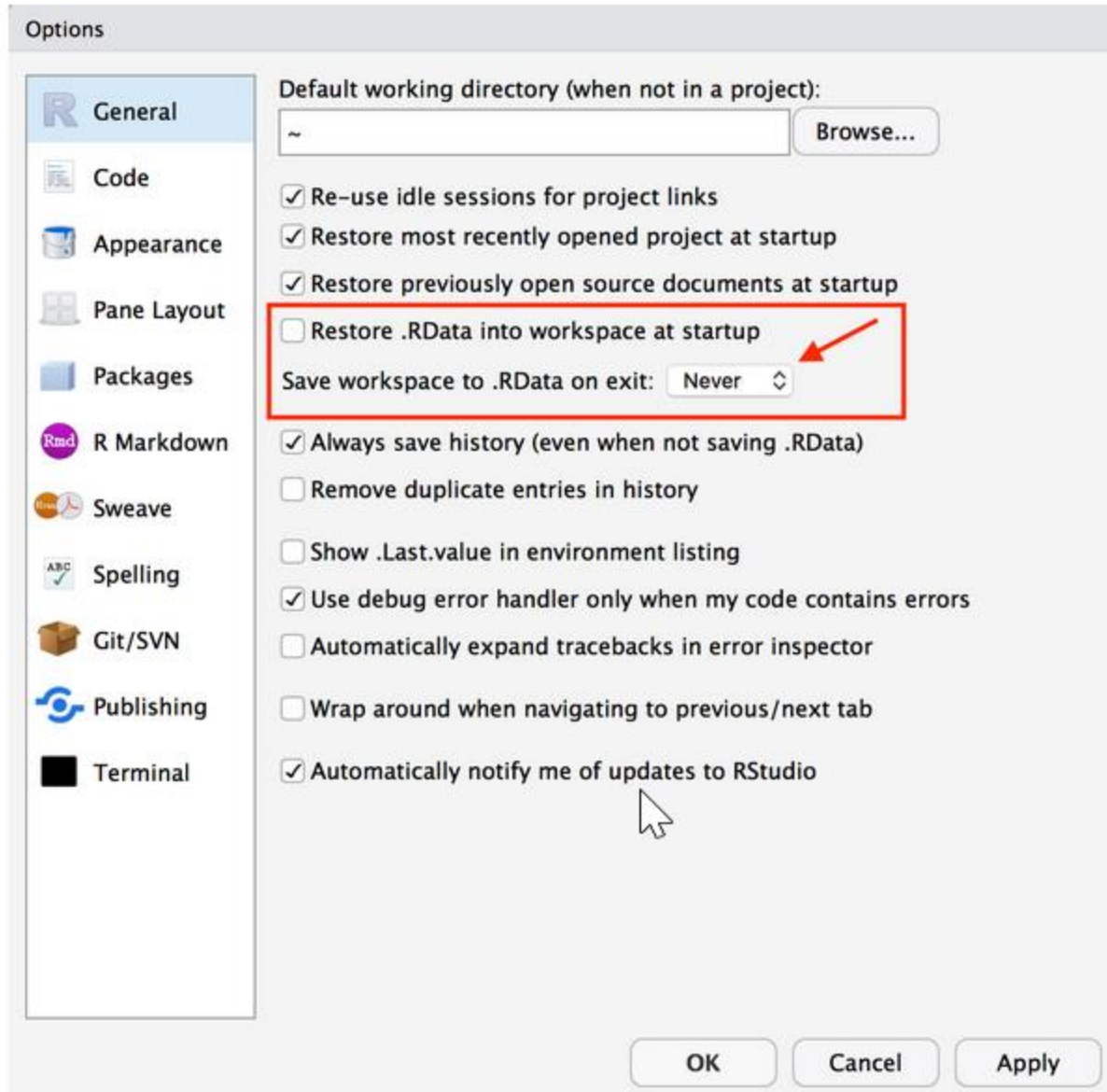
Natural language support but running in an English locale

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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.

> |

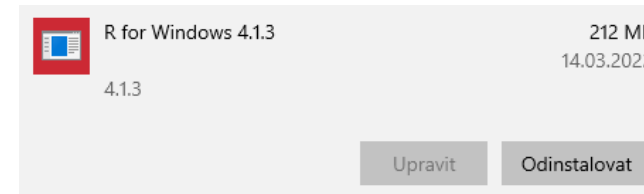
Console



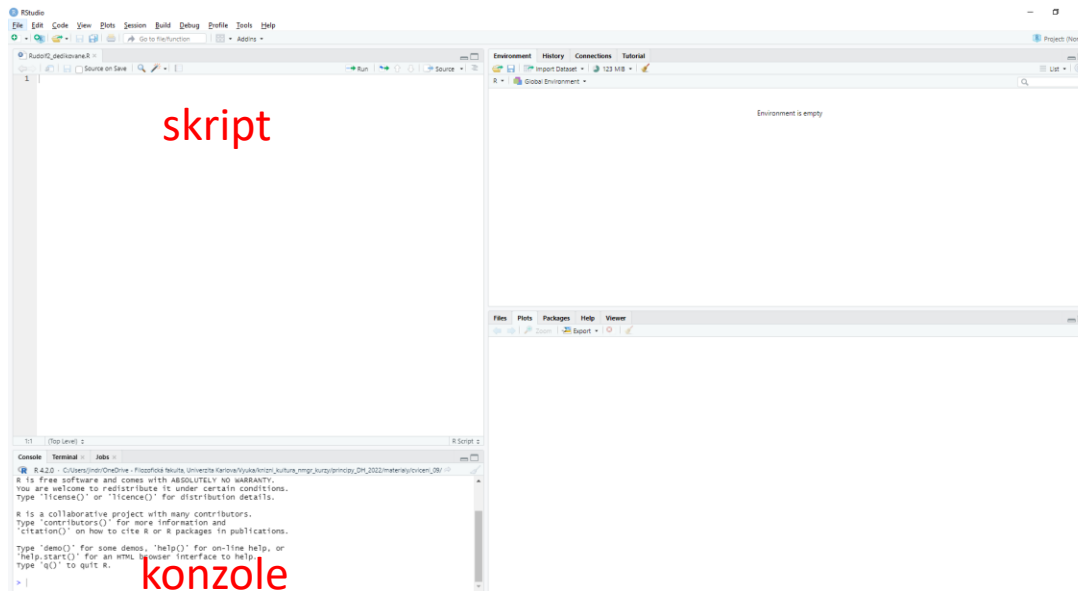
Řešení potíží s R a RStudio (offline)...

Aktuální verze R (důležité)

- poslední verze R
 - pro instalaci knihoven vhodné (někdy nutné)
 - odinstalovat starší verzi (nepovinné)
 - Windows: Přidat nebo odebrat programy
 - instalovat poslední verzi
 - stáhnout z <https://www.r-project.org/>, resp. <https://mirrors.nic.cz/R/>
 - nejlépe i poslední verze RStudio (nepovinné)
- odpovídající verze RTools (pouze Windows)
 - <https://cran.r-project.org/bin/windows/Rtools/>



Skript vs. konzole



- skripty jsou sekvence příkazů
 - např. načtení a vizualizace datasetu
- konzole slouží pro zadání zpravidla jednoho příkazu
 - např. instalace knihoven

Instalované potřebné knihovny/balíčky

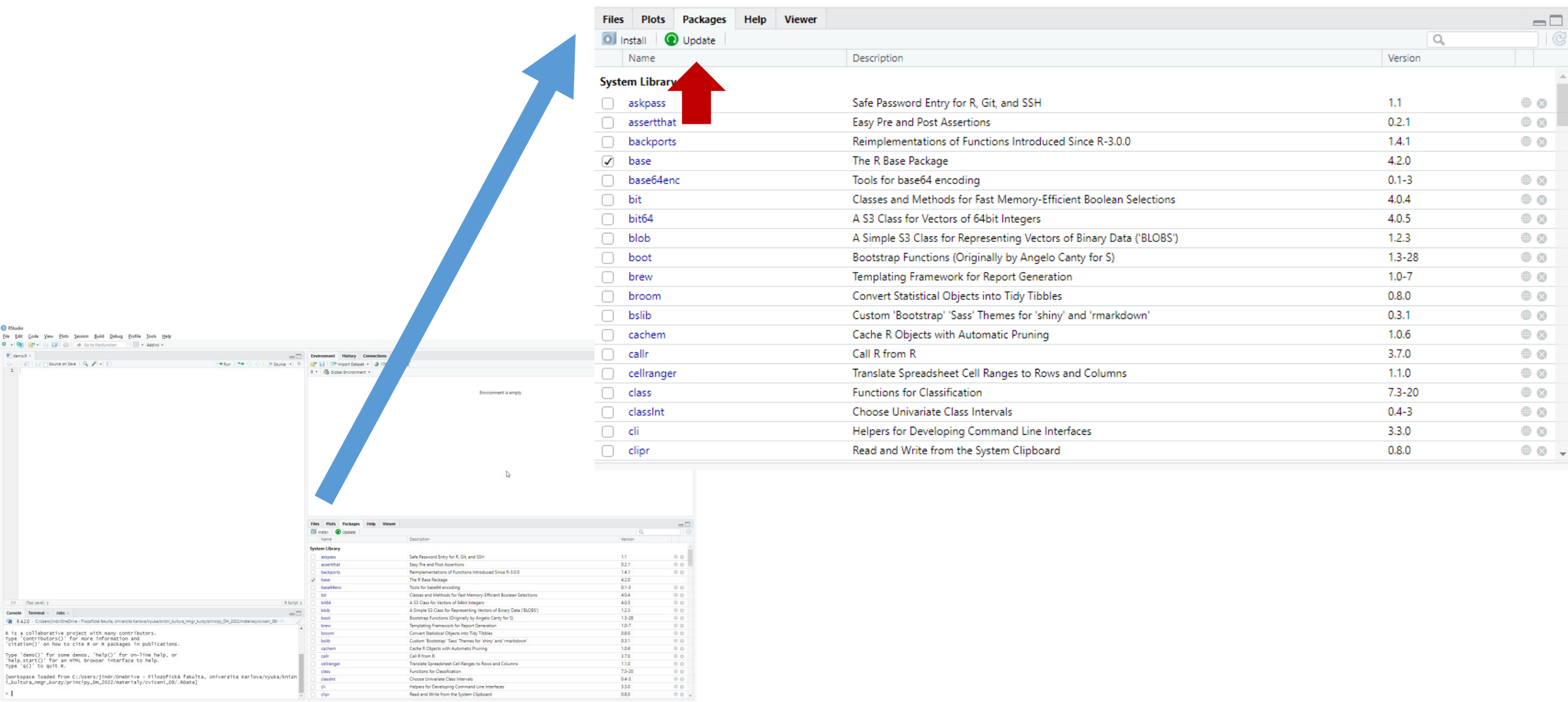
- při přechodu na vyšší verzi R je třeba balíčky instalovat znovu... ☹
 - readxl
 - ggplot2
 - tidyr
 - dplyr
- na konzoli:
 - `install.packages("readxl")`
- je možné instalovat vše v rámci balíčku tidyverse
 - pak dát do záhlaví `library(tidyverse)`
 - funkce volat se jmennými prostory, např. `readxl::read_excel`
 - jinak je možné instalovat jednotlivě a používat jako v tomto dokumentu

Soubor je ve stejné složce jako skript

- ohlídat, do skriptu napsat:

```
this.dir <- dirname(parent.frame(2)$ofile)  
setwd(this.dir)
```

Aktualizace balíčků (v případě potíží)



The screenshot shows the RStudio interface with the 'Packages' pane open. The 'Update' button is highlighted with a red arrow. A blue arrow points from the bottom-left corner of the RStudio window towards the 'Update' button.

Name	Description	Version
<input type="checkbox"/> askpass	Safe Password Entry for R, Git, and SSH	1.1
<input type="checkbox"/> assertthat	Easy Pre and Post Assertions	0.2.1
<input type="checkbox"/> backports	Reimplementations of Functions Introduced Since R-3.0.0	1.4.1
<input checked="" type="checkbox"/> base	The R Base Package	4.2.0
<input type="checkbox"/> base64enc	Tools for base64 encoding	0.1-3
<input type="checkbox"/> bit	Classes and Methods for Fast Memory-Efficient Boolean Selections	4.0.4
<input type="checkbox"/> bit64	A S3 Class for Vectors of 64bit Integers	4.0.5
<input type="checkbox"/> blob	A Simple S3 Class for Representing Vectors of Binary Data ('BLOBS')	1.2.3
<input type="checkbox"/> boot	Bootstrap Functions (Originally by Angelo Canty for S)	1.3-28
<input type="checkbox"/> brew	Templating Framework for Report Generation	1.0-7
<input type="checkbox"/> broom	Convert Statistical Objects into Tidy Tibbles	0.8.0
<input type="checkbox"/> bslib	Custom 'Bootstrap' 'Sass' Themes for 'shiny' and 'rmarkdown'	0.3.1
<input type="checkbox"/> cachem	Cache R Objects with Automatic Pruning	1.0.6
<input type="checkbox"/> callr	Call R from R	3.7.0
<input type="checkbox"/> cellranger	Translate Spreadsheet Cell Ranges to Rows and Columns	1.1.0
<input type="checkbox"/> class	Functions for Classification	7.3-20
<input type="checkbox"/> classInt	Choose Univariate Class Intervals	0.4-3
<input type="checkbox"/> cli	Helpers for Developing Command Line Interfaces	3.3.0
<input type="checkbox"/> clipr	Read and Write from the System Clipboard	0.8.0

Obnova balíčků (v případě potíží)

- smazat složku se staženými balíčky
 - typicky (verze R: 4.2, Windows):
C:/Users/**Uzivatelске_jmeno**/AppData/Local/R/win-library/4.2
 - možné zjistit příkazem: `.libPaths()`
- balíčky instalovat znovu