# CSHS Workshop: R for hydrologists - projects
## CWRA 2022

Kevin Shook     Paul Whitfield     Daniel Moore

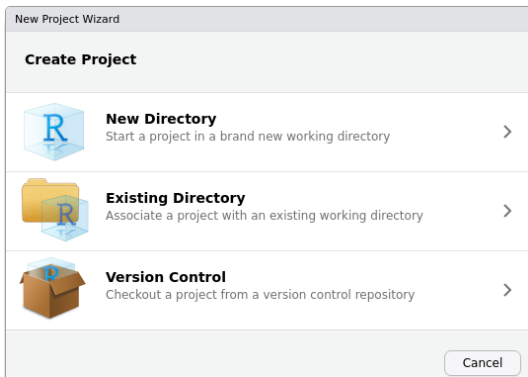Canadian Society for Hydrological Sciences (CSHS)

June 4, 2022

# Why create a project?

- ▶ Makes your code more reproducible
- ▶ Keeps code separate from other projects
- ▶ Lets your code work with `git` and **GitHub**
- ▶ Basis for creating packages

▶ Command is **File** | **New Project**
▶ Several alternatives appear

- New Directory
    - allows you to create any type of project, including packages
    - can use **git** (always a good idea), *but*
    - *won't* work with **GitHub**
- Existing Directory
    - only creates a simple project
    - doesn't set up **git**, but you can add it later
    - *won't* work with **GitHub**
- Version Control
    - clones a project from a repository like **GitHub** or **GitLab**
    - project has to be set up on the repository *first*

# .Rproj file

- ▶ Every project contains a project file (project_name.Rproj)
  - ▶ a text file which contains the project settings
- ▶ Double-clicking on the file in your file manager will load **RStudio** with the project
  - ▶ default directory will be set to the project directory
- ▶ Can also load a project manually in **RStudio** using
  **File | Open Project** or
  **File | Recent Projects**
- ▶ You can only have one project open at a time
  - ▶ opening a project will close your current project

- **git** is a program for version control
- Created by Linus Torvalds (creator of Linux)
- Allows you to manage versions of your documents
- **RStudio** allows you to do most operations without typing commands
  - if you screw up, you *will* have to type **git** commands
- Can sync with **GitHub**

- **git** is based on *branches*
  - each branch is a separate set of files
- There is always a **main** (or **master**) branch
  - best version of the files
- When a branch is ready, it can be merged into the **main** branch
- *ALWAYS* create a new branch before working on a project
  - if you don't it will be a PITA