R workshop prep. instructions

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Instructions

As this is a workshop, you will need a laptop with **R** and **Rstudio** pre-installed. We won't have time to help you with the installation, so please make sure that your system is working ahead of time. This is especially important if you have a computer from work. *Please* talk to your IT people ahead of time to make sure that everything is installed properly!

Installing R

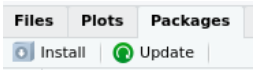
R needs to be installed first. You can get the program here: https://cran.r-project.org/index.html

Next, you need to install **RStudio**. You can get it from here: https://www.rstudio.com/products/rstudio/

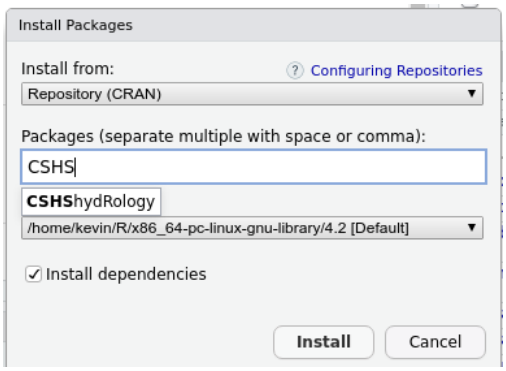
Please run **RStudio** *before* attending the workshop to be sure that everything is working properly.

Minimal installation

The Workshop is based on the `CSHShydRology` package, so you will need to have it installed ahead of time. You can do this inside **RStudio** by selecting the **Packages** tab and clicking the "Install" button.



Now type CSHShydrology into the dialog box. Make sure that the checkbox "Install dependencies" is selected and click the **Install** button.



`CSHShydRology` requires the use of the package `whitebox`. which also requires an executable program to be installed. You can do this inside **RStudio** with the following commands:

```
library(whitebox)
install_whitebox()
```

Other programs and packages

ggplot2

ggplot2 is used very widely for graphs. We have a few exercises which use it, so it would be a good idea to install it.

Rmarkdown

We will be using the package `rmarkdown` to create documents, so you should also install it. This allows you to create html documents. If you want to be able to export .pdf and .docx files, you will also need to install the program **Pandoc**
https://pandoc.org/installing.html
and **LaTeX**. Note that the **Pandoc** installation page also shows where you can obtain **LaTeX** for your system.

git

git is a distributed version control program. We will be showing how to use **git** with **Studio** to manage the versions of your files. You can install **git** from here:
https://git-scm.com/downloads

Building packages

We will be showing how you can build packages in **R**. This requires installing the package `devtools`. Make sure that all the dependencies (there are many!) are installed.