Introduction to Colabs, Binder and R

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THE NATIONAL ARCHIVES

Opening in Google Colabs

There are 3 notebooks which are each linked to on the following page:

https://github.com/nationalarchives/I-CeM-workshop-2022/blob/main/NotebookLinks.md

Notebook 1: Loading and Viewing I-CeM records 

Click the “Open in Colab” button to open a notebook (Hint: right click – open in new tab, to keep Links document open)

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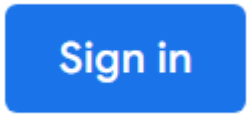
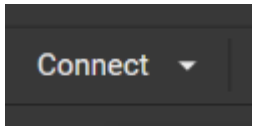
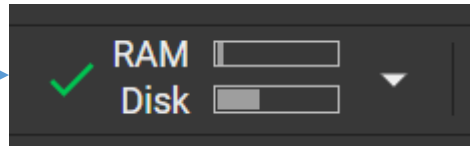
Getting started with Google Colab

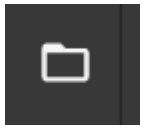


Sign in to your Google account, if not already

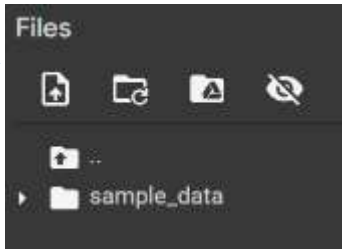


Click the Connect button → Which turns into this

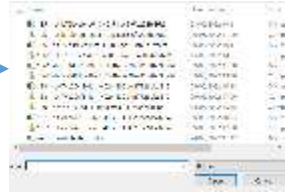


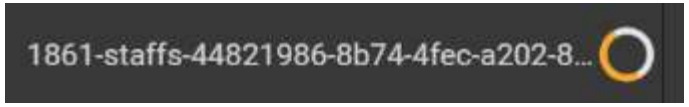


Click the Files button → Which opens this



Click Upload button → Choose I-CeM download file





Wait for this to disappear

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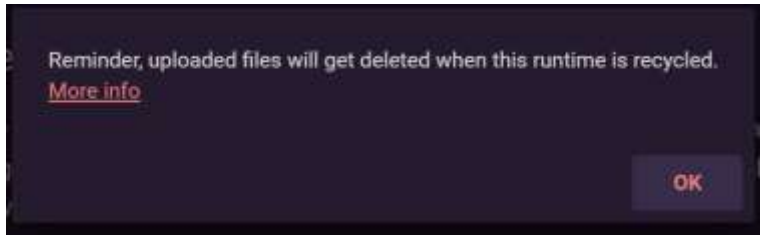
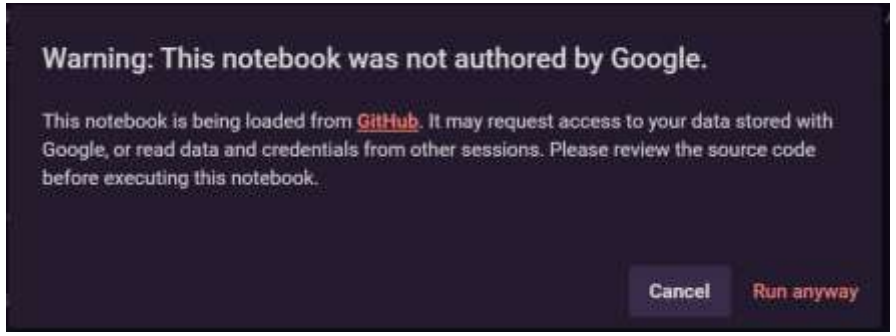
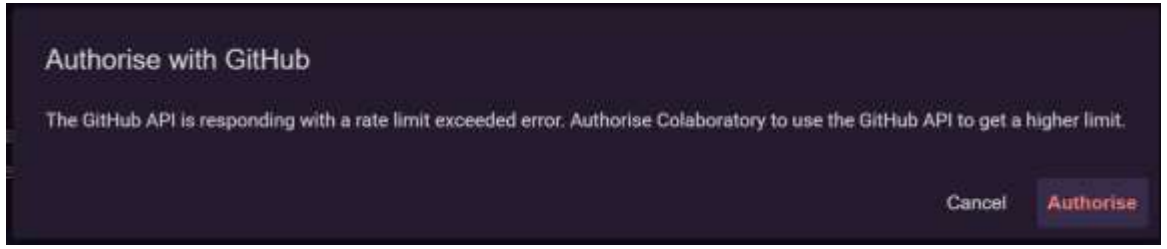
Google Colab messages



Click OK



Click Run anyway



Click Cancel

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Opening in RStudio on MyBinder

The notebooks can also be hosted on the MyBinder service. This link will open the service in Rstudio mode:

RStudio hosted on Binder

launch binder

Wait for a cloud machine to start up:

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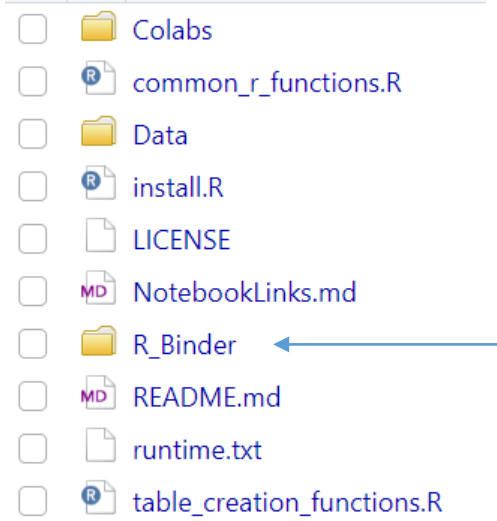
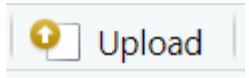
Getting started with RStudio



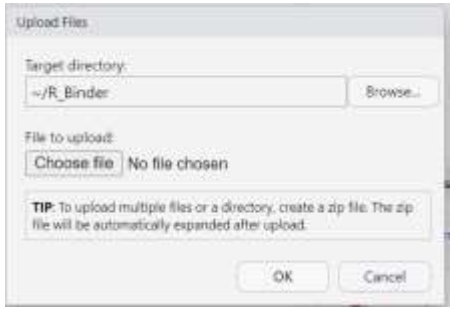
Click on R_Binder to open that folder



Click to upload a data file

Click choose file to browse to I-CeM file

Then click OK



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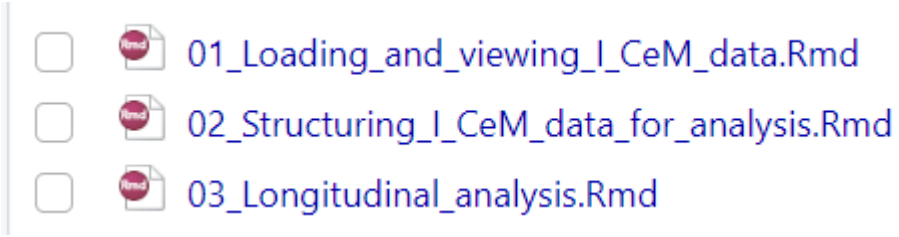
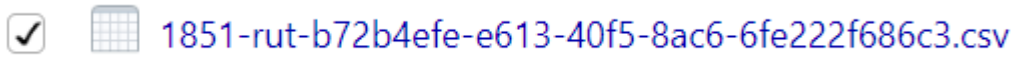
Initialising a notebook

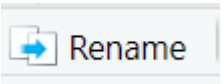


Click on Notebook name to open notebook

Add the I-CeM download file where indicated – 1 & 2 only
(instructions below for copying filename)

```
Replace the text INSERT FILE NAME HERE with the name of your csv file
```{r}
SOURCE_DATA_FILE <- "INSERT FILE NAME HERE"
```
```

Select data file 

and 

Is easiest way to copy file name

Don't forget the .csv part, and to press Cancel after copying

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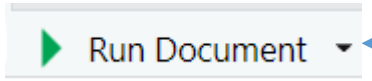
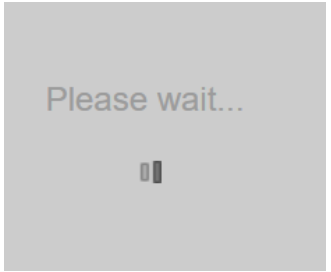
Running a notebook



If name starts ‘Shiny’: Click to run the notebook using specified data file

If name starts ‘Static’: Click to run the notebook using specified data file

New window opens, be patient while it loads.



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A short guide to dplyr

dplyr is a package of functions for processing tabular data

dplyr works as a pipeline of functions which can be chained ad infinitum

Anatomy of a dplyr command:

"Output data" <- "Input data" %>% "Function 1" %>% "Function 2" %>% ...

Optionally write result to a variable using the <- operator

The table of data that is to be processed

Passes data from one command to the next

A data manipulation function

Example dplyr functions

select(Parish, MalePop, FemalePop, Population)	Returns only the named columns
filter(Age >= 18)	Returns only rows meeting the criteria
mutate(Occode = as.numeric(Occode))	Update the values in a column
mutate(AgeBand = as.integer(Age/5))	Create a column based on another
group_by(Sex, AgeBand) **summarise**(count = n())	Count records in groups
inner_join(occode_lookup, by = 'Occode')	Join another table to data. Specify column(s) to join on.

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Tidy Data: pivoting

pivot_wider( )

Year	Sex	Count
1851	M	103
1851	F	100
1881	M	150
1881	F	152
1891	M	130
1891	F	135

Sex	1851	1881	1891
F	100	152	135
M	103	150	130

pivot_longer( )

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