

Workshop - Hackathon!

Andrew Stewart

Andrew.Stewart@manchester.ac.uk



@ajstewart_lang

Today

- In one large group you are going to work on hacking a large dataset - the World Happiness Report Data. I want you to tidy and wrangle as necessary, visualise components, run appropriate statistical tests, and then put all this in a markdown document (rendered as a .html file)
- You can split into smaller groups if you like (or work individually) on a specific aspect of the above - you decide.

Why?

- Real world data is messy - I want you to experience making sense of that.
- Real world research involves collaborating with others - again, this is good practice for managing that.
- One of the best ways to learn new coding/data/statistical tricks/techniques is to see how others do things!
- The Hackathon! assignment (which you will each do individually) will be much easier once you've gone through an actual Hackathon.

For the assignment

- You need to do a Hackathon individually on a new dataset (i.e., not the one you're looking at as a group today).
- The dataset could be an open dataset from an area you research (or are interested in) - perhaps it was published with a paper.
- Or you could use an open dataset on any topic that interests you.
- Whatever set you choose, I want to see evidence of data wrangling and tidying, visualisation, and modelling - with a summary of what meaning you have extracted from the data (and any caveats about the interpretation that you think are worth raising).

Good places to start looking for open data sets

- In your research area, there are likely to be large datasets that have already been published - or you could check out and use data from...

- The Google dataset search toolbox:

<https://toolbox.google.com/datasetsearch>

- The Tidy Tuesday datasets:

<https://github.com/rfordatascience/tidytuesday>

- The gapminder datasets:

<https://www.gapminder.org/data/>

- The Kaggle datasets:

<https://www.kaggle.com/datasets>

- Or any other source you might want to use! The data don't have to be psychological in nature.

A dataset

Using the Google dataset search, I looked for the World Happiness data - to download it, I had to create a free account (not always required):

<https://data.world/laurel/world-happiness-report-data>

The screenshot shows a web browser window displaying the dataset page for 'laurel/world-happiness-report-data' on the data.world platform. The page includes a header with navigation links, a main content area with a description and data dictionary, and a table of data files. The table shows two files: 'online-data-chapter-2-whr-2017.xlsx' and 'data_behind_table_2_1_whr_2017'. The 'data_behind_table_2_1_whr_2017' file is expanded, showing a table with columns for country, year, life_ladder, log_gdp_per_capita, and social_support. The table contains data for Afghanistan from 2008 to 2012. The right sidebar shows recent comments from users like @kieroneil and @noahbohnson.

data.world/laurel/world-happiness-report-data

Dataset Search World Happiness Report Data - dataset b... World Happiness Report Data - dataset... World Happiness Report Data - dataset... Home | data.world

laurel/world-happiness-report-data

+ Add to project Download Launch workspace

Overview Contributors Discussion Activity 326

2 Coverage, Summary Statistics and Regression Tables

Source: Helliwell, J., Layard, R., & Sachs, J. (2017). World Happiness Report 2017, New York: Sustainable Development Solutions Network.

DATA DICTIONARY View
View all definitions for the 2 files and the 59 columns in this dataset.

2 files Sort

online-data-chapter-2-whr-2017.xlsx Explore

	data_behind_table_2_1_whr_2017	figure_2_1_whr2017	figure2_2_whr_2017	figure2_3_whr_2017
	wp5_country	country	year	# life_ladder # log_gdp_per_capita # social_support
1	Afghanistan	Afghanistan	2008	3.7236 7.1971 0.4507
2	Afghanistan	Afghanistan	2009	4.4018 7.3627 0.5523
3	Afghanistan	Afghanistan	2010	4.7584 7.4163 0.5391
4	Afghanistan	Afghanistan	2011	3.8317 7.4458 0.5211
5	Afghanistan	Afghanistan	2012	3.7829 7.5492 0.5206

Showing 1-5 of 1,420 rows, 27 columns See all Switch to column overview

RECENT COMMENTS

@kieroneil · 9 months ago
Nevermind, I see that Life Ladder is the Happiness Score
Continue reading

@kieroneil · 9 months ago
Is the 2016 data in the first sheet used to determine the 2017 scores i
Continue reading

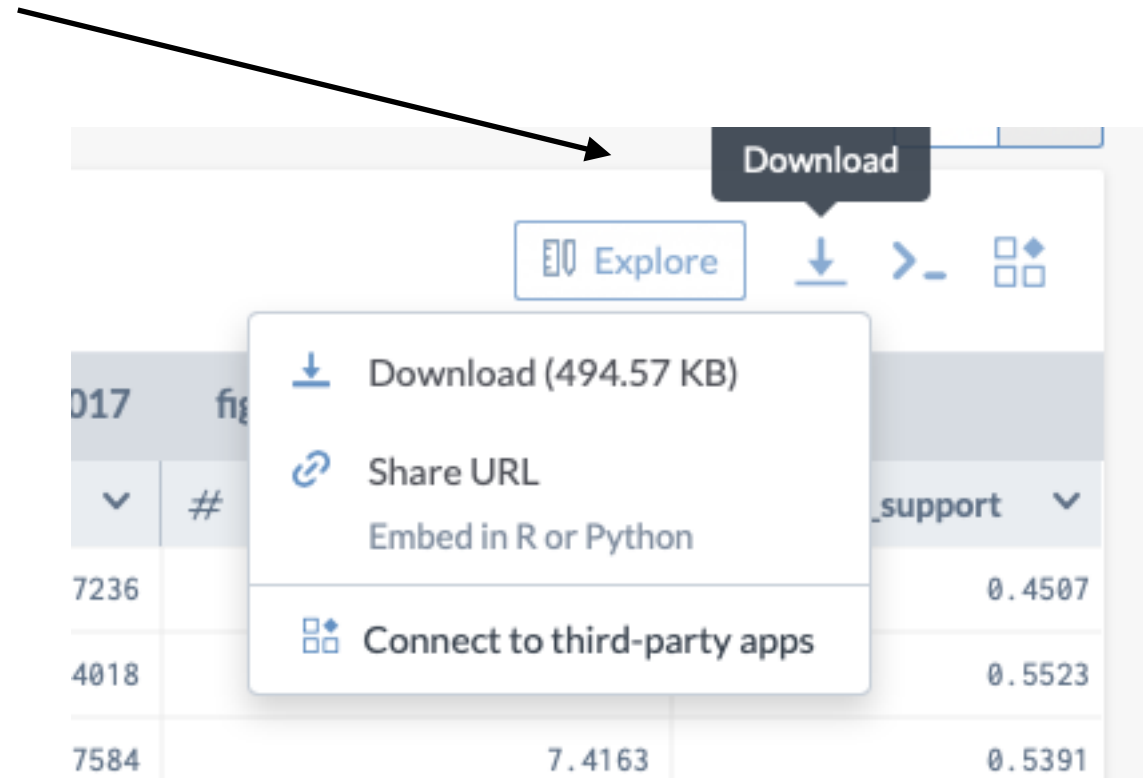
@quanticdata · last year
https://public.tableau.com/profile/st
Continue reading

@noahbohnson · last year
Zoomed in a bit on Eurasia/Africa
Continue reading















@noahbohnson · last year
Average Life Ladder by Country from Tableau
Continue reading

View comments

Click the download icon and you can either download the file, or copy the link to open in R:



Click on the Data Dictionary button for an explanation as to what each column represents.

  Data dictionary 		
Data dictionary		
data_behind_table_2_1_whr_2017		
 wp5_country 	string	WP5 is GWP's coding of countries, including some sub-country territories such as Hong Kong.
 country 	string	Country
 year 	year	Year
# life_ladder 	decimal	Happiness score or subjective well-being (variable name ladder).
# log_gdp_per_capita 	decimal	Statistics of GDP per capita (variable name gdp) in purchasing power parity (PPP) at constant 2011 int. dollar prices
# social_support 	decimal	Social support (or having someone to count on in times of trouble) is the national avg of the binary responses (0 or 1)
# healthy_life_expectancy_at_birth 	decimal	The time series of healthy life expectancy at birth calculated by WHO, WDI, and other published stats
# freedom_to_make_life_choices 	decimal	National avg responses to "Are you satisfied or dissatisfied with your freedom to choose what you do with your life?"

If you copy the link, then you can read an Excel file from a website into R like:

```
library(tidyverse)
library(readxl)

url1 <- "https://query.data.world/s/tw3oaknxjlqods27xzzbpa3do4rmfr"
p1f <- tempfile()
download.file(url1, p1f, mode="wb")
happy_data <- read_excel(path = p1f)
```

Just replace the url1 link with the one that you've copied via (in this case) the Share URL option...

Here are some tasks you need to do:

1. tidy and wrangle
2. visualise - there are lots of variables to visualise
3. model - there are several factors and DVs you could look at
4. report back - bring together the above to create a markdown file which brings all of the above together

Each group should put their group or individual names alongside what activities you are going to engage with. I suspect you'll mainly be working on visualising or modelling. Make it clear which variables you will be working with when you write your information below.

Towards the end of the day (at around 1500) I will knit a markdown file as an .html file that presents the classes work today. Give you're doing this in .html it would be nice to see an animation or two!

- All activity will be co-ordinated via this site:

https://hackmd.io/_2008xkVSiGtELYQXoEqHg

- Get into your groups (or decide to work individually).
- Load the Happiness data file into R.
- Decide what each of you (individually or in pairs) is going to do (e.g., mainly developing visualisation or mainly doing stats modelling) and write that down on the hackmd.io page so people don't end up all doing the same thing.
- Work from now until 1500 - at 1500 I'll knit all your code together.
- Each time you complete a task - email me your R script.

hackmd.io/_2008xkVSiGtELYQXoEqHg?both

HackMD

+

?

New! New Feature: account merge!

...

Sign in

1 ONLINE

B I S H

</> “ ≡ ≡ ✓ 🔗 🖼️ 📊 - 💬

1 # Psychology MRes Hackathon 4/4/19

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3

4 Download the Happiness survey data (or use a different dataset of your own choosing if you like) - note, for the assignment you CANNOT use the Happiness survey data.

5

6 > library(tidyverse)

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8 >

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"https://query.data.world/s/tw3oaknxj1qods27xzzbpa3do4rmfr"

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18 4. report back - bring together the above to create a markdown file which brings all of the above together

19

20 Each group should put their group or individual names alongside what activities you are going to

Line 23, Columns 1 — 28 Lines

✓

○

Spaces: 4

SUBLIME

✎

Length: 1354

⌚ CHANGED A FEW SECONDS AGO

Psychology MRes Hackathon 4/4/19

Download the Happiness survey data (or use a different dataset of your own choosing if you like) - note, for the assignment you CANNOT use the Happiness survey data.

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Handy hints

- Co-ordinate activity - do this via making it clear on hackmd.io what it is you are doing - make sure you all update the hackmd.io document as you go along - if you've completed an activity that you've put beside your name, write "COMPLETED".
- Remember I will bring all your code together at the end so if you are changing variable names make sure that's captured in the code you email to me.
- Any questions?