

REGIONAL TRAINING ON CAPACITY DEVELOPMENT OF DATA ANALYTICS AND DISSEMINATION USING “R” SOFTWARE

AMMAN, JORDAN, 3 - 7 DECEMBER, 2023

Day #5

Final wrap-up exercise

Session 5 Agenda

- 9:00 – 9:30 (30 min): **Wrap-up**
- 9:30 – 10:00 (30 min): **Presentation “final wrap-up exercise”**
- 10:00 – 10:20 (20 min): **Demonstration**
- 10:20 – 10:40 (20 min): **stretching/coffee break**
- 10:40 – 12:30 (2.5 hr): **Practice/Exercise**
- 12:30 – 13:00 (30 min): **quick debrief/ Q&A**
- 13:00 – 14:00 (60 min): **Lunch**
- 14:00 – 15:00 (60 min): Practice/Exercise
- 15:00 – 15:30 (30 min): quick debrief/ Q&A
- 15:30 – 16:00 (30 min): Closing and way forward

Outline

- Wrap-up
- RMarkdown revisit
- Final wrap-up exercise
- Q & A
- Way forward

RMarkdown

Produce the output document (final report)



YAML metadata

R-code chunk

Report Content
(markdown text)

```
1 ---
2 title: "Untitled"
3 author: "Basma AbdElGawad"
4 date: "2023-07-04"
5 output: html_document
6 ---
7
8 ```{r setup, include=FALSE}
9 knitr::opts_chunk$set(echo = TRUE)
10 ```
11
12 ## R Markdown
13
14 This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS
15 Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.
16
17 when you click the Knit button a document will be generated that includes both content as well as
18 the output of any embedded R code chunks within the document. You can embed an R code chunk like this:
19
20 ```{r cars}
21 summary(cars)
22 ```
23
24 ## Including plots
25
26 You can also embed plots, for example:
27
28 ```{r pressure, echo=FALSE}
29 plot(pressure)
30 ```
31
32 Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code
33 that generated the plot. In line code can be inserted as follow `r max(cars$pressure, na.rm=T)`
```

In-line code

RMarkdown revisit

- Works with 2 main packages; {rmarkdown} and {knitr} + pandoc
- **YAML:** the top part that guides the way of output production
 - is case- and indentation- sensitive
 - YAML format, key: value (key in lowercase, space after colon)
- **Code chunk:**
 - if named, should each have a **unique name**
 - {r chunkname, chunk options = TRUE/FALSE}
 - Chunk options (eval, echo,..) can be configured from the setting icon in each chunk

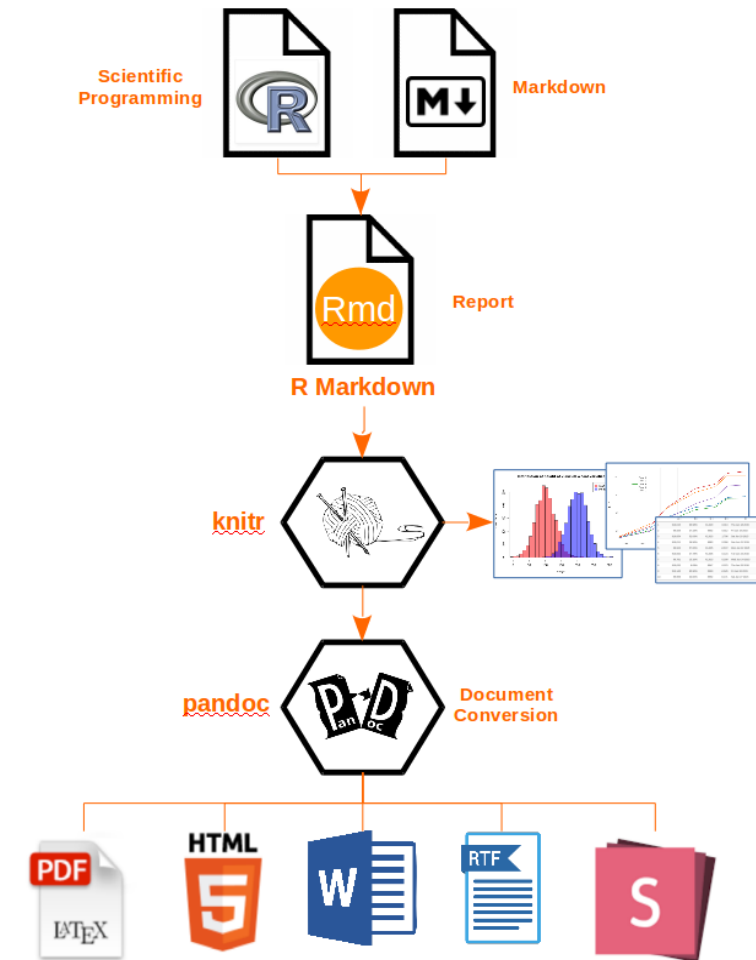
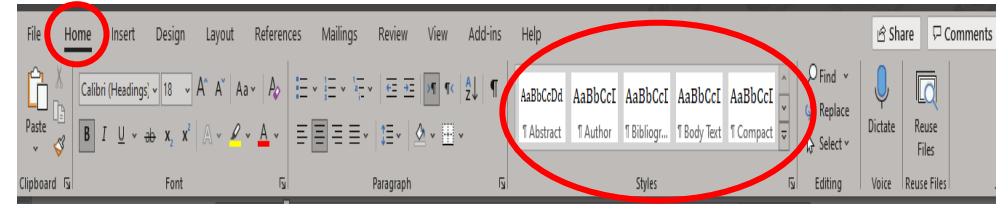


Image source: [Make your research reproducible](#)

Creating template word document

- Standardize your report formatting
- You can add your organization's logo to it
- To change the style: "home" tab >> "styles" section>> right click to modify style
- You can use new Word doc or the one rendered
- Once you are fine with the format;
 - Name the file: template.docx
 - Save it in the folder where Rmd present
 - Reference it in your YAML as below



```
---
title: "Word template example"
author: "Basma AbdElGawad"
date: "2023-07-12"
output:
  word_document:
    reference_docx: "template.docx"
    toc: true
---
```

 *Indentation is crucial in YAML!!*

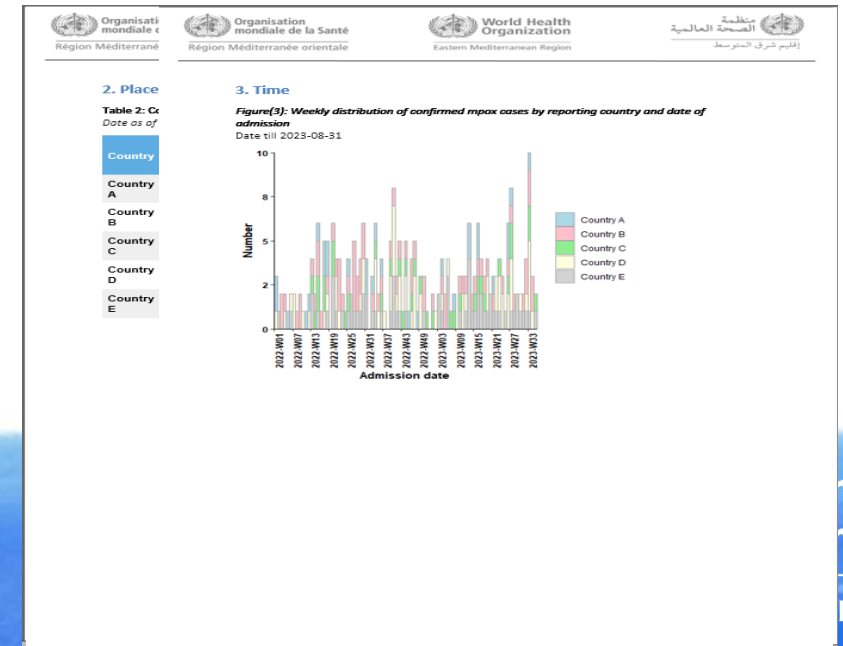
Demonstration

Exercise

- Open your training R project
- Create a new RMarkdown report for “Monkeypox situation report till 2023-08-31”
- Add your code chunks for the following steps;
 1. Load required packages (give chunks simple meaningful names)
 2. Import dataset “`mpox_20231012.csv`”
 3. Explore your data and variables
 4. Continue adding code chunks for tables and graphs as required to develop the final report as the one shared **Link** (some hints in the next slide 😊)

Hint: no space or “_” are allowed!

Do you want this to appear in your final report!!



Exercise cont.

Hints:

- Do not forget to make use of the inline code ``r`` in the Rmarkdown
- Some new variables will be created (💡 mutate function), each in its relevant chunk, like:
 - Epiweeks &/or epiweek start date: (💡 `aweek::date2week` or `lubridate::floor_date()`)
 - Age group
- **To summarize data in a table**, you may use any of the following options:
 - **Option 1:** dplyr package (`group_by`, `summarize`) ... you may make it nicer with Flextable package
 - **Option 2:** crosstable package ... you may make it nicer with Flextable package
 - **Option 3:** gtsummary package
- Use **ggplot()** to plot figure 2 & 3
 - Do not forget “+” is used to link different layers of graph
 - **geom_histogram**: for the epi curve
 - **geom_bar**: for bar plot

Bonus!!

- Plot the age-sex pyramid for the positive cases (figure 1)

Help us!!

To gauge the effectiveness of the training and identify areas for future improvement

* The survey is anonymized



a call for
solidarity
and action



World Health
Organization

REGIONAL OFFICE FOR THE Eastern Mediterranean

Way forward...

Jan 2024: Follow-up call
(facilitator: country participants)
Troubleshooting, progress follow-up

01

Mar 2024: Follow-up call
(facilitator: country participants)
Finalization, national sitrep

02

Feb 2024: Refresher call
(All facilitators & participants)

03

SUCCESS

