



Ellis Hughes

Associate Director Data
Science, GSK

NETFLIX

FORMULA 1

DRIVE TO SURVIVE



Image Source: <https://www.tvguide.com/a/img/catalog/provider/1/1/1-8562731548.jpg>





Image Source: <https://www.catapult.com/wp-content/uploads/2023/06/Racewatch-Every-Angle-BG-1024x525.jpg>

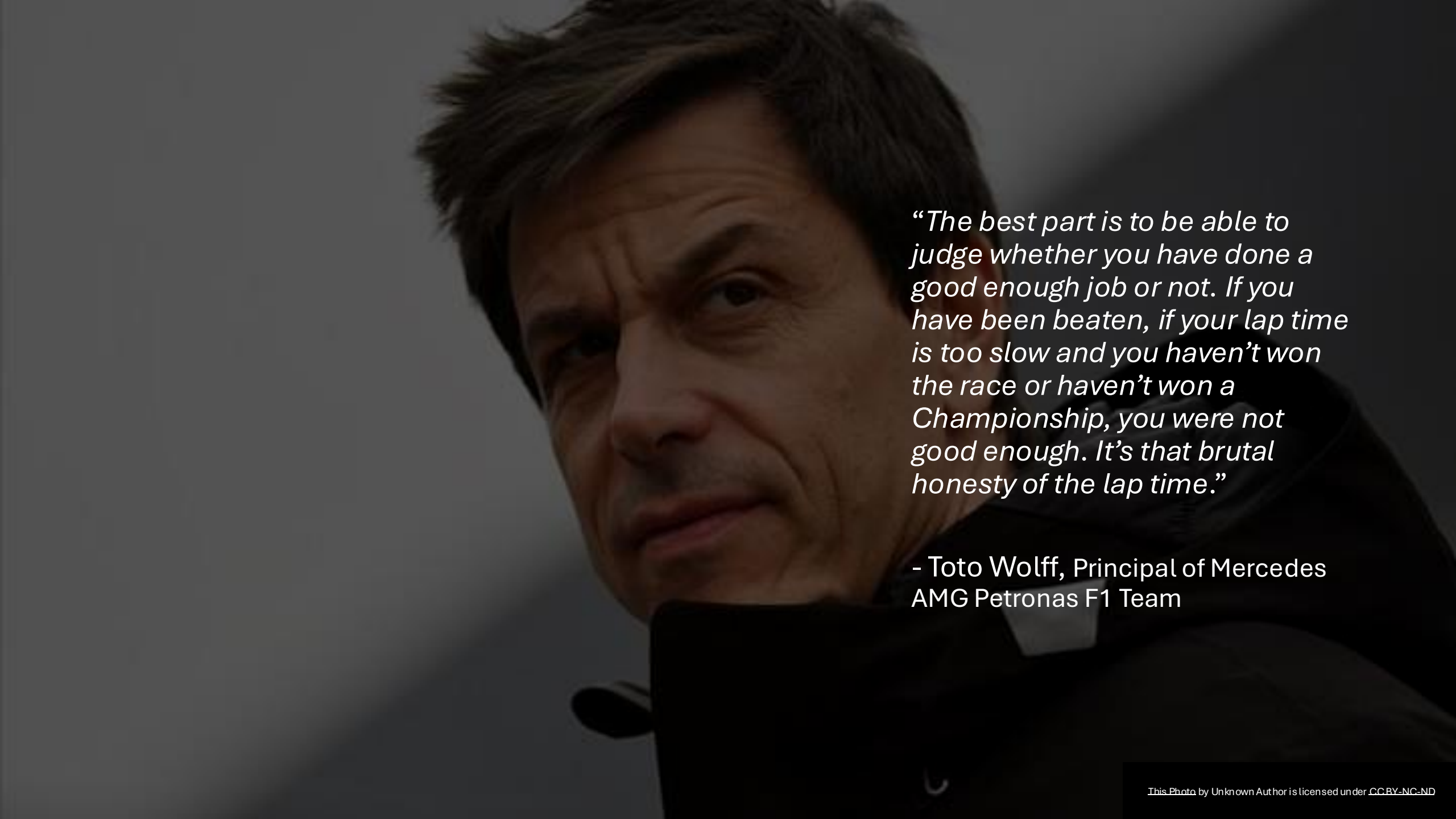




Image Source: <https://nypost.com/wp-content/uploads/sites/2/2021/12/Max-Verstappen-F1-title.jpg?quality=90&strip=all>



Image Source: <https://i.redd.it/oi9eico5emob1.jpg>



“The best part is to be able to judge whether you have done a good enough job or not. If you have been beaten, if your lap time is too slow and you haven’t won the race or haven’t won a Championship, you were not good enough. It’s that brutal honesty of the lap time.”

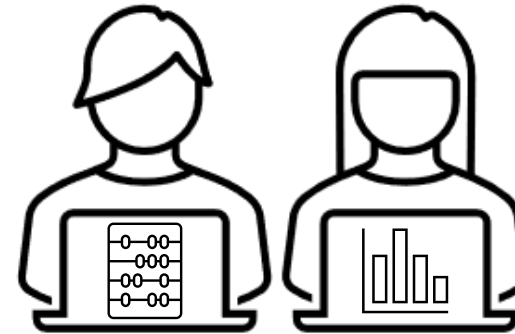
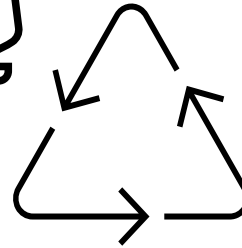
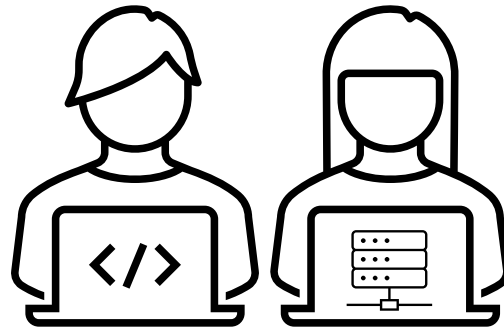
- Toto Wolff, Principal of Mercedes AMG Petronas F1 Team



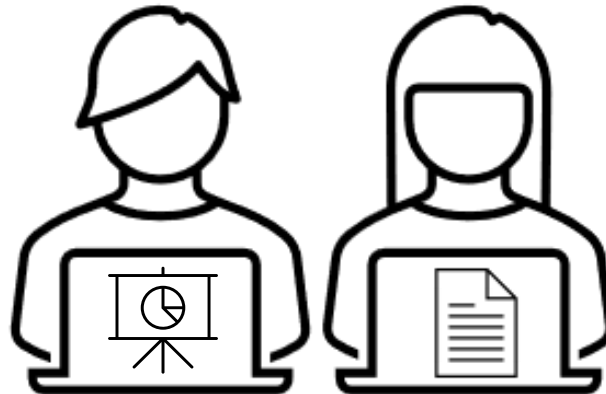
Pharmaceutical Industry

- Pharma is incredibly advanced
 - Science
 - Technology
- Pharma can be incredibly slow
 - Many long trials
 - Analysis
 - Report creation and validation
- Safe and effective treatments

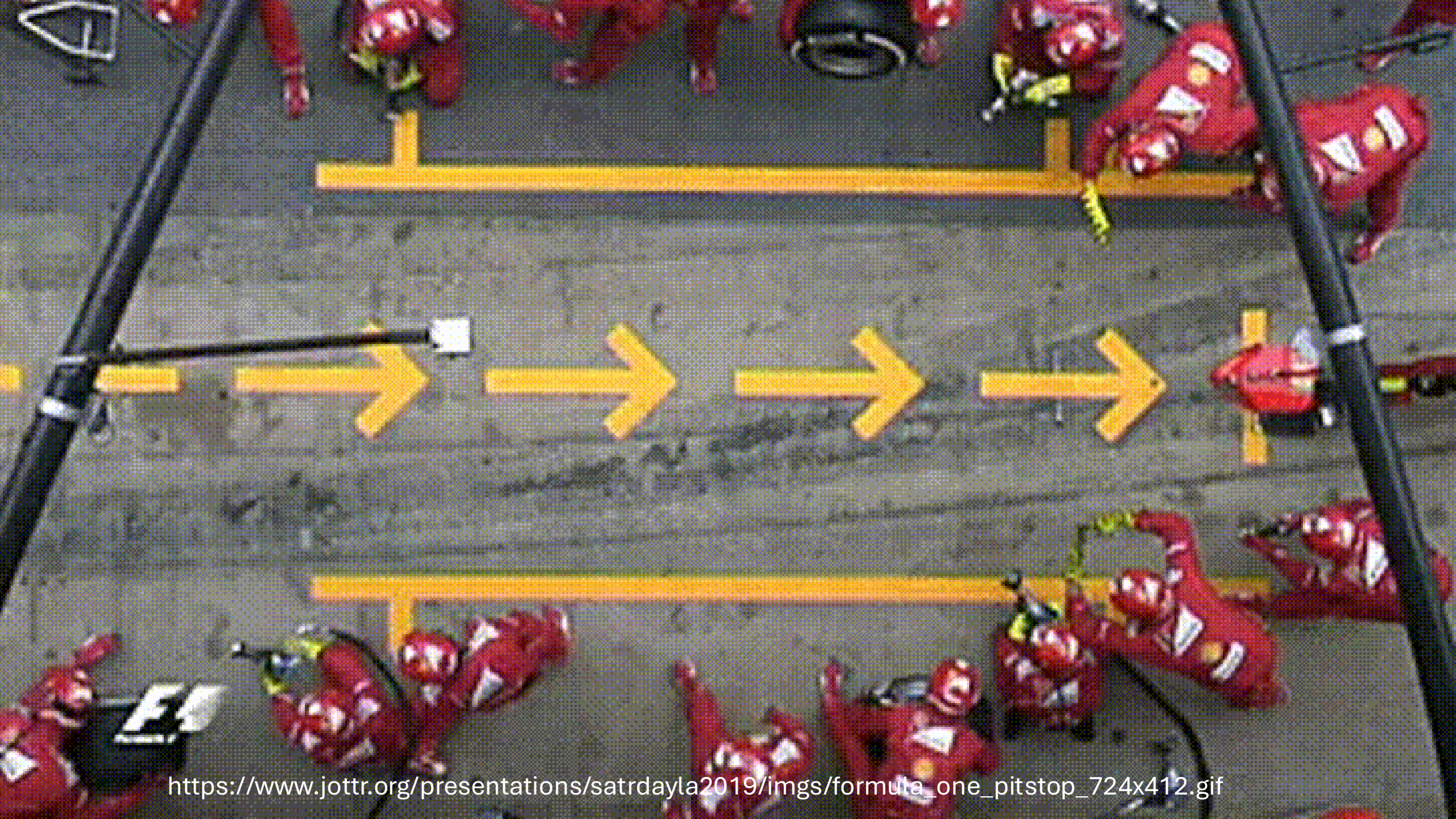
Programmers



Statisticians



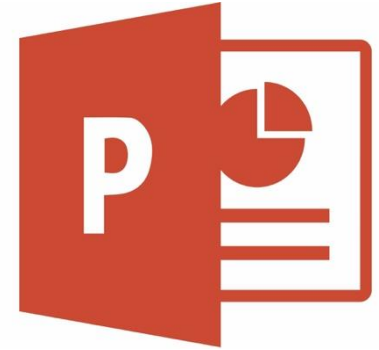
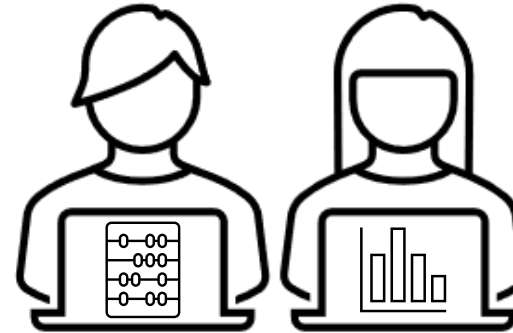
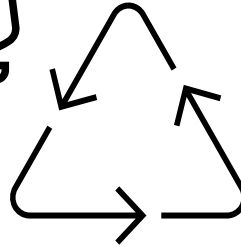
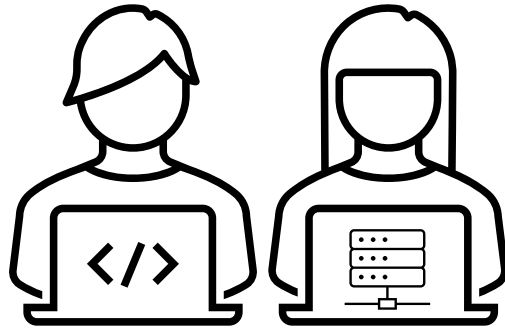
Medical Writers



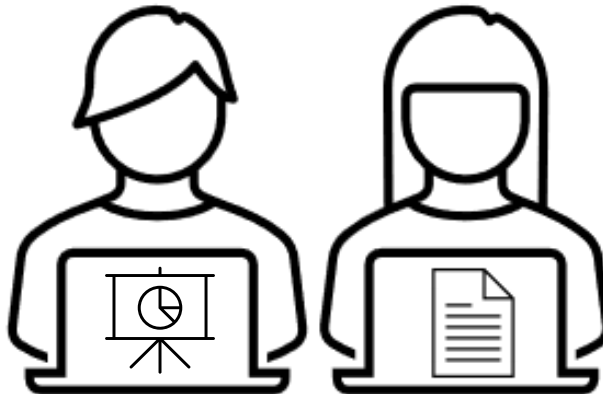


<https://tenor.com/view/wheels-fall-off-f1-formula-one-gif-12823690>

Programmers



Statisticians



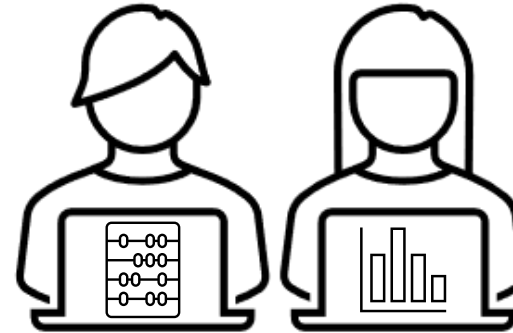
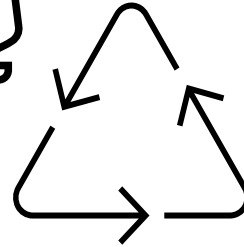
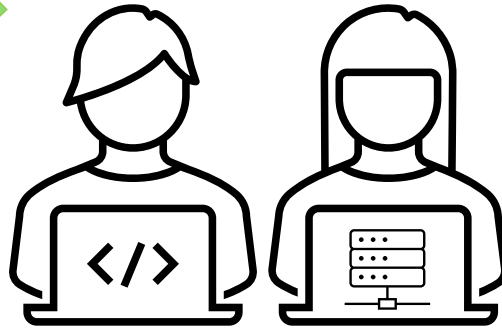
Medical Writers



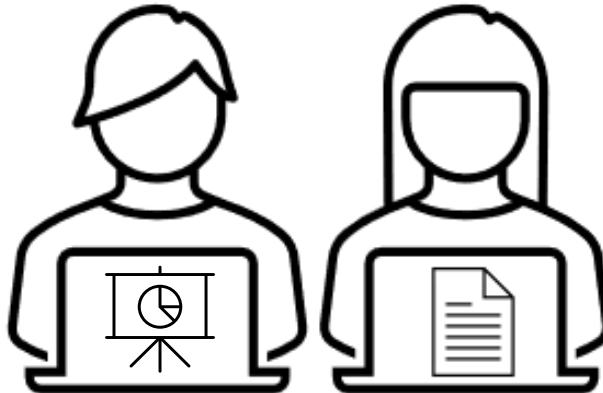
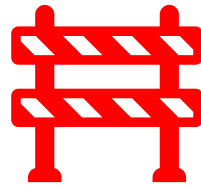
Mark 1

- R Package
- Based on {officer} and {flextable}
- Work with existing systems to
 - Extract data
 - Generate reports (pptx/docx)

Programmers



Statisticians



Medical Writers



F1 Hasn't Stopped Innovating

- Every year, constructors try to improve on what was done before
 - Improve safety
 - Improve handling
 - Improve overall speed
 - Improve efficiency



Mark 2

- R Package Ecosystem
- Separate roles for different packages
- Simple functions, good defaults, extensible



This is a test of {sparkle}

Below the data.frame contents of mtcars should be inserted.

[REDACTED]



```
library(sparkle)
library(ggplot2)

load_docx("input_document.docx") |>
  add_sparkle(comment_id = 0, mtcars[1:2,1:3]) |>
  add_sparkle(comment_id = 2, ggplot(diamonds, aes(x = carat)) + geom_histogram()) |>
  add_sparkle(comment_id = 4, 1.0) |>
  save_docx("my_document.docx")
```



Ellis Hughes





```
library(mirage)
library(ggplot2)
```

```
load_pptx() |>
```

```
  add_slide(
    layout = "Title and Content",
    content( mtcars[1:2,1:3], ph = ph_body() )
  ) |>
```

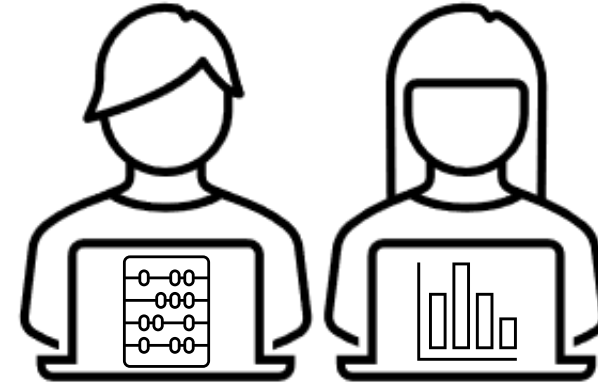
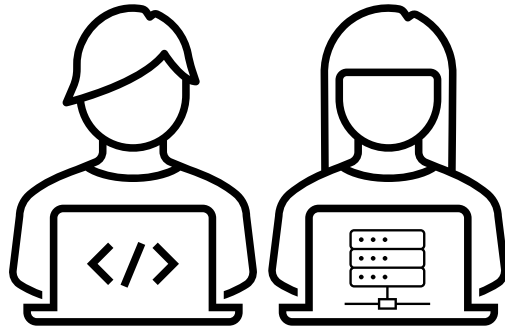
```
  add_slide(
    layout = "Title and Content",
    content("diamonds data plot", ph = ph_title()),
    content(ggplot(diamonds, aes(x = carat)) + geom_histogram(), ph = ph_body())
  ) |>
```

```
  add_slide(
    layout = "Title and Content"
    content(as_md("Make This BOLD"), ph = ph_body() )
  ) |>
```

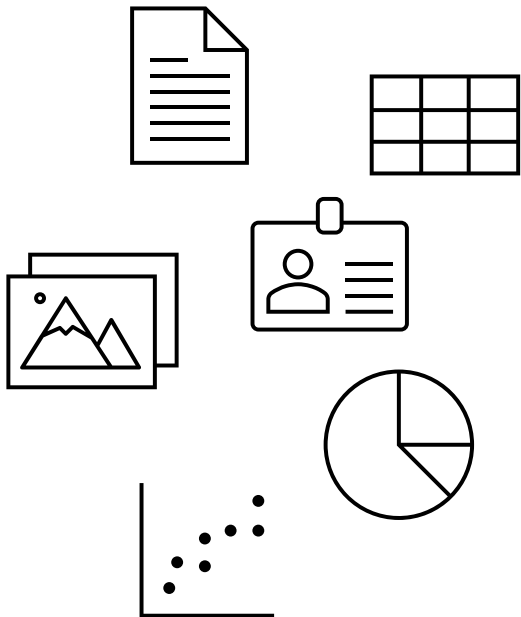
```
save_pptx("my_presentation.pptx")
```



Programmers

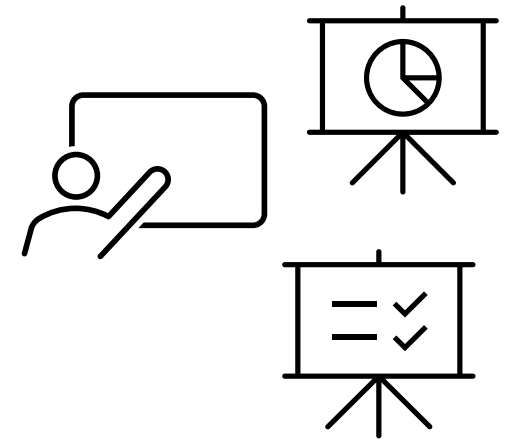


Statisticians

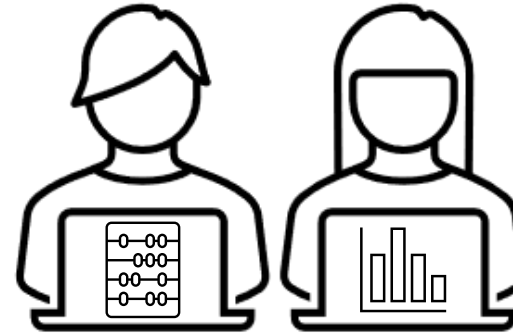
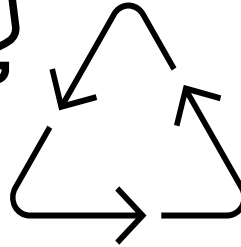
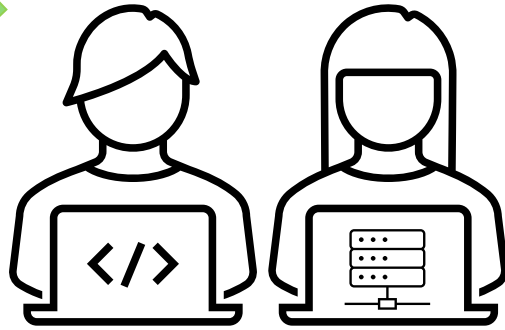


```
library(mirage)

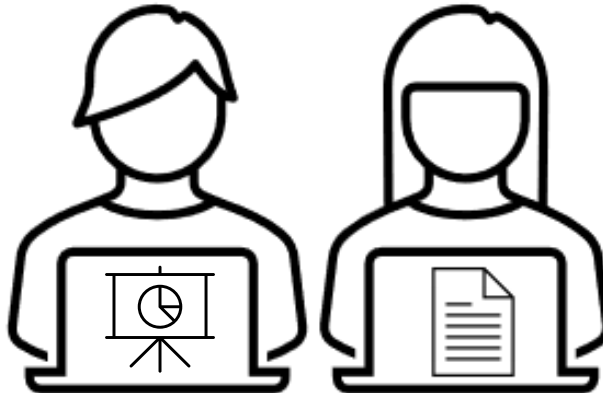
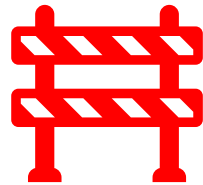
load_pptx() |>
  add_slide(
    layout = "Title and Content",
    content("Hello World", ph = ph_body())
  ) |>
  save_pptx("my_presentation.pptx")
```



Programmers



Statisticians



Medical Writers

1989 – Ferrari introduced the Semi-Automatic Gear Box

Drivers Focus on Driving,
less likely to make a
mistake on a gear change

Increased reliability of
transmission

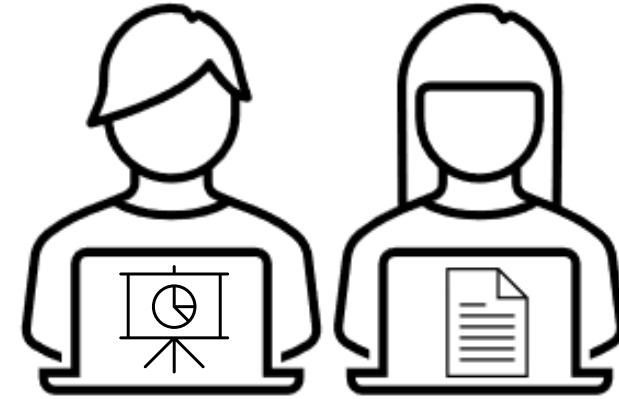
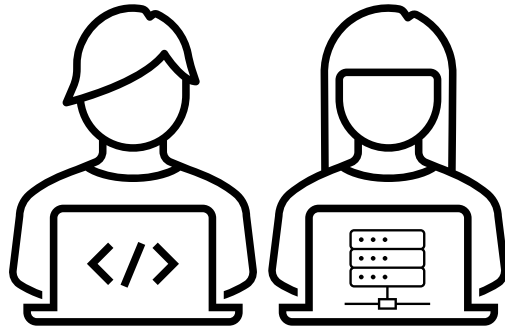




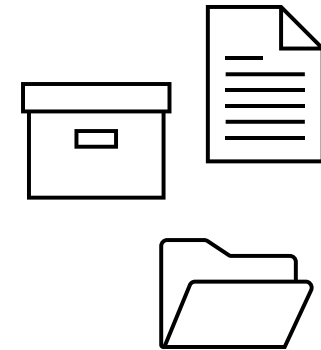
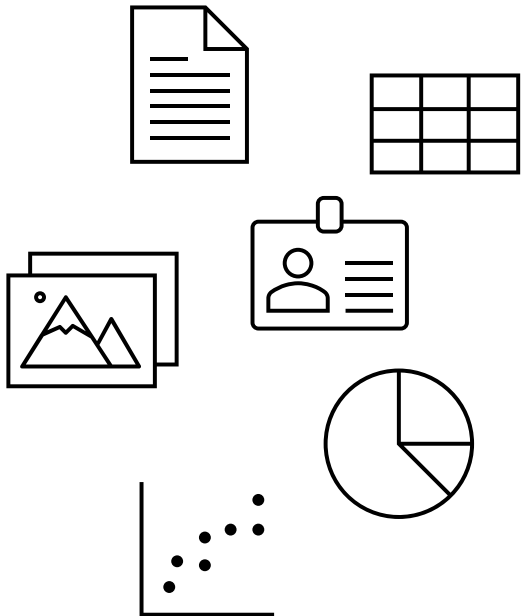
Mark 3

- GUI interface to execute R code for non-programming staff
- Hosted on Posit Connect
- Expandable to different data types and sources

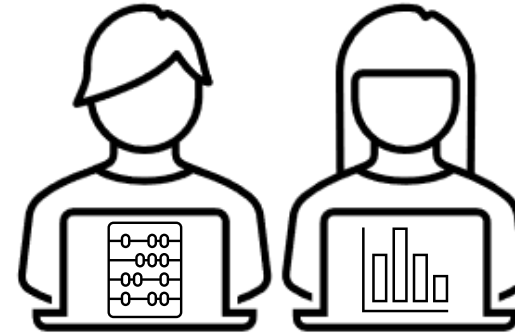
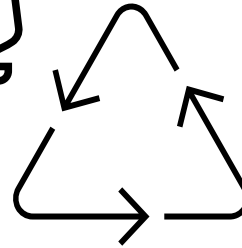
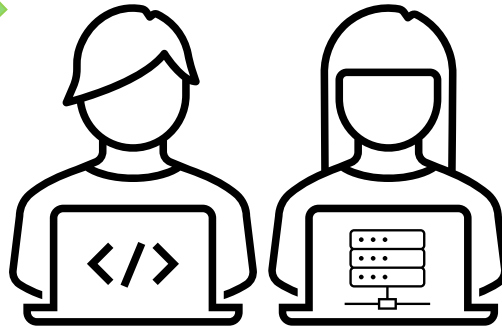
Programmers



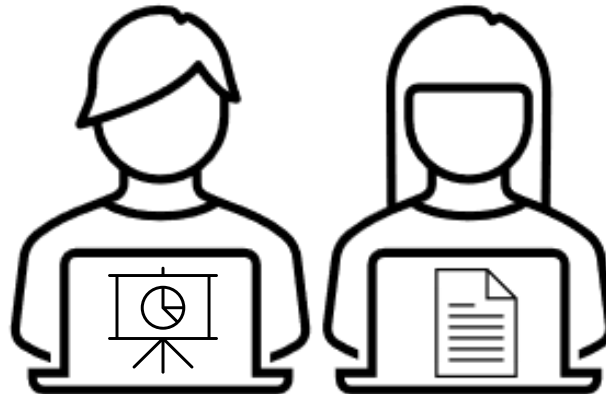
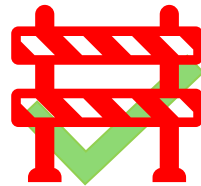
Medical Writers



Programmers



Statisticians



Medical Writers





Pharmula 1

<https://github.com/GSK-Biostatistics/polish>
<https://github.com/GSK-Biostatistics/sparkle>
<https://github.com/GSK-Biostatistics/mirage>