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Tutorial 1

Data Types and Structures in Python and R

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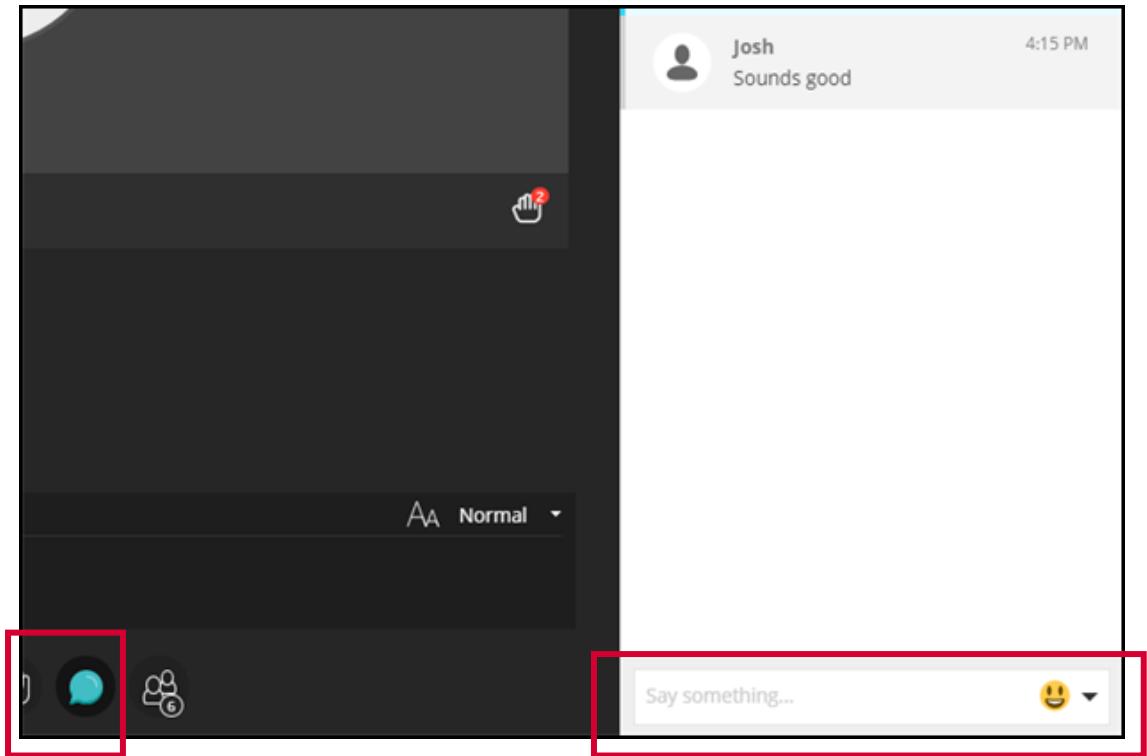
Audio check

Can you hear the presenter talking?

Please type **yes** or **no** in the “Text chat area”

If you can't hear:

- Check your Audio/Visual settings in the Collaborate Panel
- Try signing out and signing back into the session
- Type into the chat box and a moderator will try to assist you



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How are you feeling today on this range of expressive animals?



Agenda

- Teaching team introduction
- Course overview
- Accessing tutorial coding notes and materials
- Error of the week: quick note an a Noteable R warning message
- Practical: Python and R workbooks





The teaching team

+ our wonderful Teaching Fellow
Keith



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Course overview

- Live tutorials **Thursday 5:30pm or Friday 1pm BST**
- Live drop-in/code-along sessions **Wednesday 4:30pm BST**
- Content released each week on Friday
- 3 stars, a wish, and a step mini diaries
- Error of the week
- Assessment released in Week 4 – coding & written components
- Assessment due **30 June May at 2pm BST**

Week	Week Commencing	Topic	Collaborate sessions
1	19 May 2025	Software Introduction	<ul style="list-style-type: none">• Drop-in / Code-along Session 21/05/2025 16:30• Tutorial 22/05/2025 17:30 or 23/05/2025 13:00
2	26 May 2025	Data Types (part 1)	<ul style="list-style-type: none">• Tutorial 28/05/2025 16:30 or 30/05/2025 13:00• Drop-in / Code-along Session 29/05/2025 17:30
3	2 June 2025	Data Types (part 2)	<ul style="list-style-type: none">• Drop-in / Code-along Session 04/06/2025 16:30• Tutorial 05/06/2025 17:30 or 06/06/2025 13:00
4	9 June 2025	Essential Data Structures	<ul style="list-style-type: none">• Drop-in / Code-along Session 11/06/2025 16:30• Tutorial 12/06/2025 17:30 or 13/06/2025 13:00
Assessment released			
5	16 June 2025	Advanced and Less Common Data Structures	<ul style="list-style-type: none">• Drop-in / Code-along Session 18/06/2025 16:30• Tutorial 19/06/2025 17:30 or 20/06/2025 13:00
6	23 June 2025	Course completed; time allocated to work on final assignment	-----
7	30 June 2025	Assignment: Submission deadline 30 June 2025	-----





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Please select a personal notebook server

Standard Python 3

Start

- Use to code in Python
- Use to access the files in your Noteable
 - Noteable runs on Jupyter in the background so the Jupyter Notebook File Browser is your home file directory

See Using Python in Noteable video in Week 1 Topic 2



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Please select a personal notebook server

RStudio

Start

- Use to code in R
- Can import and download files through the files pane, but more steps involved than in the Notebook File Browser

See Using R in Noteable video in Week 1 Topic 3



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How to put files on your computer into your Noteable file directory

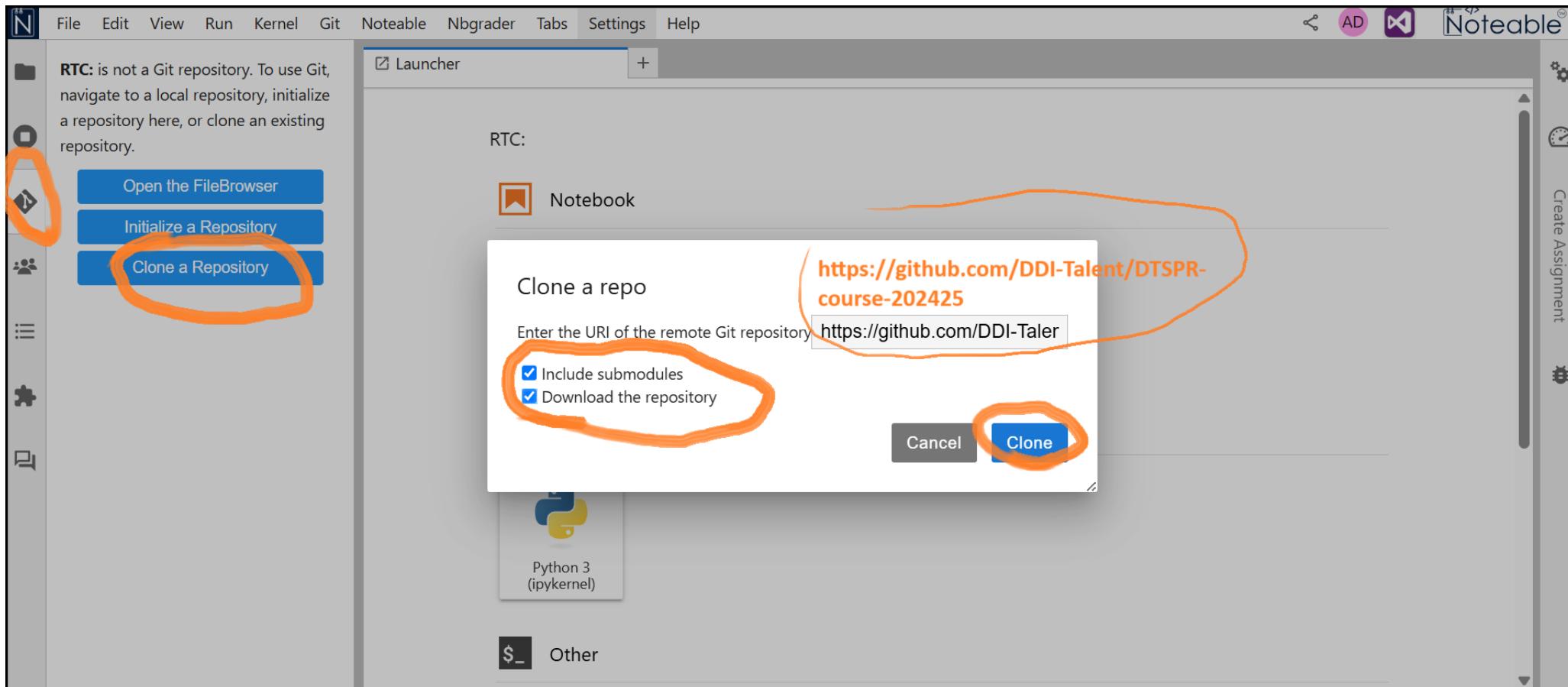
1. Download or identify files of interest
2. Open a Standard Python 3 server
3. [optionally] Launch Jupyter Notebook File Browser (from Help tab)
4. Upload the selected files
5. Have fun coding!



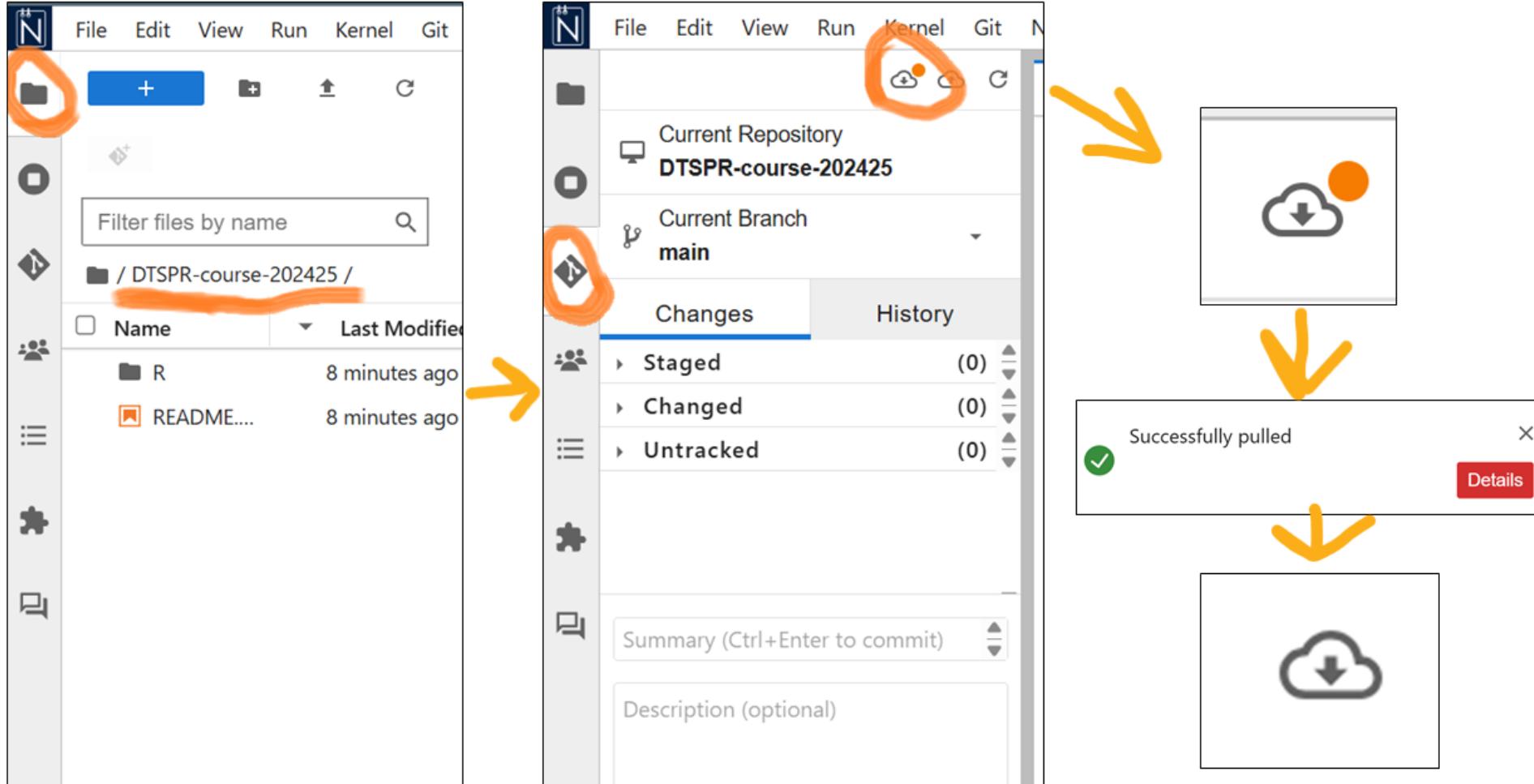
1st time accessing course notes & materials – “Clone” GitHub Repository



<https://github.com/DDI-Talent/DTSPR-course-202425>



All other times – “Pull” GitHub Repository



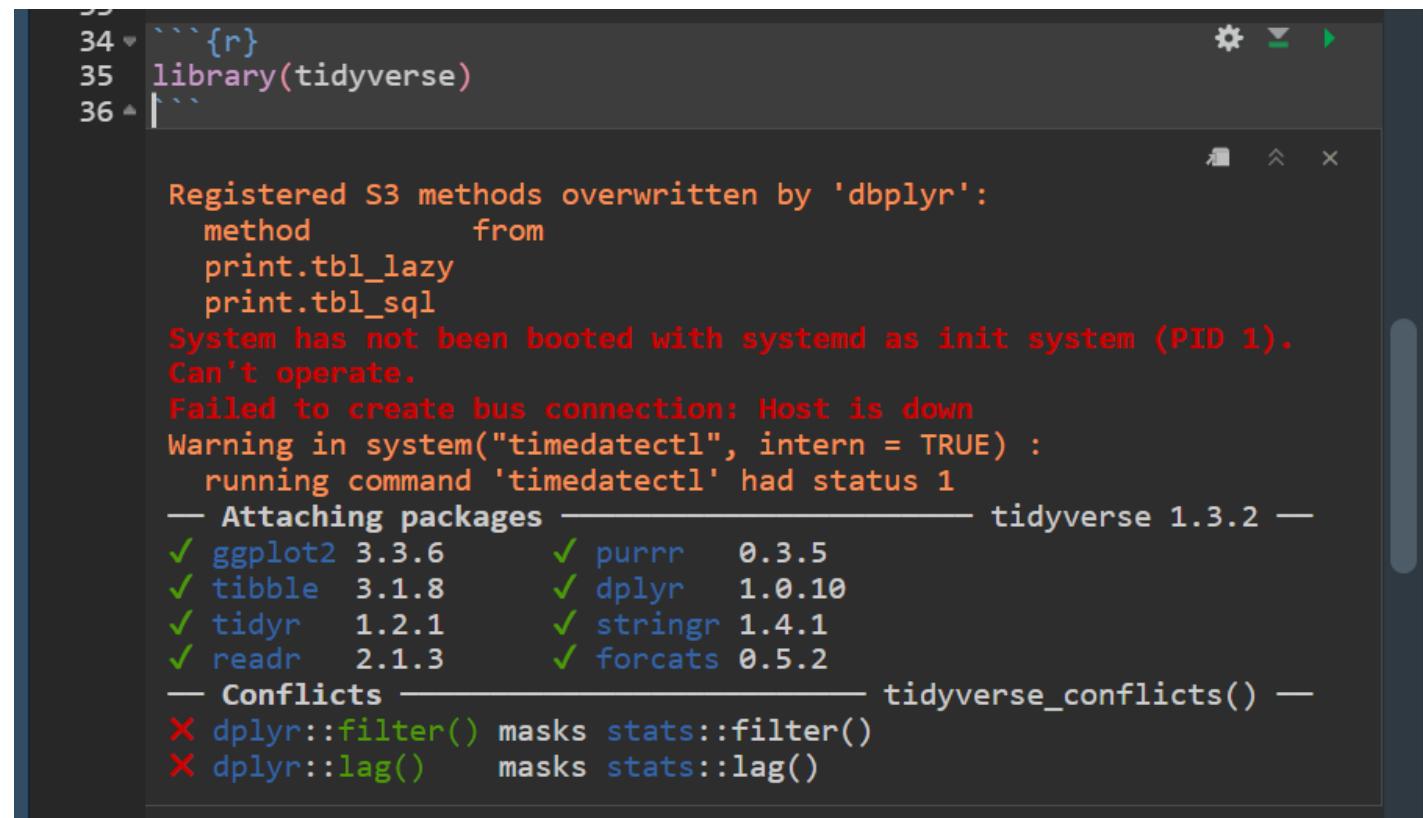
Our first error of the week

Which is a warning not an error, technically



Noteable RStudio warning message (& how to fix it)

- Nothing to be afraid of!
- Noteable is on the cloud, timezone is not guaranteed
 - Tidyverse can do all sort of cool date things (which we will see next week), so it needs to know the time



```
34 ````{r}
35 library(tidyverse)
36 ```

Registered S3 methods overwritten by 'dbplyr':
  method           from
  print.tbl_lazy
  print.tbl_sql

System has not been booted with systemd as init system (PID 1).
Can't operate.

Failed to create bus connection: Host is down
Warning in system("timedatectl", intern = TRUE) :
  running command 'timedatectl' had status 1
— Attaching packages ————— tidyverse 1.3.2 —
✓ ggplot2 3.3.6      ✓ purrr   0.3.5
✓ tibble  3.1.8      ✓ dplyr   1.0.10
✓ tidyr   1.2.1      ✓ stringr 1.4.1
✓ readr   2.1.3      ✓ forcats 0.5.2
— Conflicts ————— tidyverse_conflicts() —
✖ dplyr::filter() masks stats::filter()
✖ dplyr::lag()    masks stats::lag()
```

Solution! Add this line of code first

```
22 ~`~`{r libraries}
23 Sys.setenv(TZ="Europe/London") # set timezone (TZ argument) to whatever timezone
  you may be in, I am in the UK so am using the TZ identifier for London. This allows
  the to packages to work as intended
24
25 library(tidyverse)
26 |
27 ▲
28
```

- You can use a TZ identifier as input from the area you are in
 - See [this Wikipedia page](#) with a list of time zone identifiers from the tz database



Now for some hands-on practice with
Jupyter Lab & Rmarkdown

The tutorial documents have a lot of text to go through, be sure to read carefully!

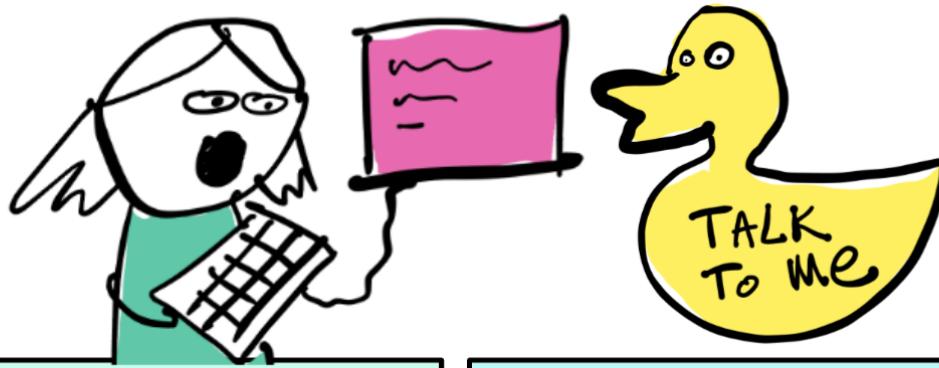


Pair Programming

**programmers talking
through their
code together
and taking turns**



Pair Programming



the Driver = active person,
problem-solving, thinking out loud

the Navigator = reflective person,
looks out for bugs, is a Rubber-Duck*



the Driver = active person,
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