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| **COVID19 Dashboard** |

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| **Owner/ Author:** | Megan McNicol, Senior Information Analyst, Primary Care Team |
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| **Document title** | **Document Filepath** |
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# Basics

## File Location

Dashboard folder is here: [\\nssstats01\PrimaryCare\Megan\COVID-19-Publication-Dashboard2](file:///\\nssstats01\PrimaryCare\Megan\COVID-19-Publication-Dashboard2)

Publication folder is here: [\\freddy\DEPT\PHIBCS\PHI\Publications\Health Topic\HPS\Covid-19](file:///\\freddy\DEPT\PHIBCS\PHI\Publications\Health%20Topic\HPS\Covid-19)

These are separate as the dashboard needs run off the stats drive.

## Dashboard Location

PRA Dashboard (password protected): <https://scotland.shinyapps.io/nhs-covid19-weekly-pra/>

Live Dashboard: <https://scotland.shinyapps.io/nhs-covid19-weekly/>

## Requirements

You need the following libraries installed in R (You can just copy and paste this to install packages):

install.packages (“shiny”)

install.packages (“plotly”)

install.packages (“shinyWidgets”)

install.packages (“dplyr”)

install.packages (“DT”)

install.packages (“shinycssloaders”)

install.packages (“shinyjs”)

install.packages (“readr”)

install.packages (“stringr”)

install.packages (“forcats”)

install.packages (“flextable”)

install.packages (“tidytable”)

install.packages (“shinyBS”)

install.packages (“glue”)

## Shiny Account

Logon details for <https://www.shinyapps.io/> :

Username: phs.isdgeneralpractice@nhs.net

password: WeeklyDashb0ard

## Staff Involved in COVID19 weekly report

|  |  |  |
| --- | --- | --- |
| COVID19 weekly Publication (data questions) | Jade Carruthers (lead) | Principal Information Analyst, Stats Gov |
| Kathryn Burt | Principal Information Analyst, Service Access |
| David Scott | Principal Information Analyst, Primary Care |
| Megan McNicol | Senior Information Analyst, Primary Care |
| COVID19 weekly R Shiny Dashboard (dashboard questions) | Megan McNicol | Senior Information Analyst, Primary Care |
| Grame Gowans | Information Analyst, Stats Gov |
| Deployment/GITHub, Technical questions | Jaime Villacampa | Principal Information Analyst, Quality Indicators |
| Laura Downie | Information Analyst, Quality Indicators |

# Anatomy of the COVID-19 Dashboard

This SOP is only about the actual dashboard and how it works. There is a [separate SOP for how to update the data and deploy the dashboard](SOP%20-%20COVID%20Dashboard%20-%20Updating%20data%20and%20deploying%20dashboard.docx).

This SOP will cover the function of the files in this folder: [\\nssstats01\PrimaryCare\Megan\COVID-19-Publication-Dashboard2\shiny\_app](file:///\\nssstats01\PrimaryCare\Megan\COVID-19-Publication-Dashboard2\shiny_app)

The only reason to go into the folders should be to update the csv files.

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| **Folder** | **Function** |
| [data](file:///\\nssstats01\PrimaryCare\Megan\COVID-19-Publication-Dashboard2\shiny_app\data) | All the data is kept and this is covered in the [“Updating the Dashboard” SOP](SOP%20-%20COVID%20Dashboard%20-%20Updating%20data%20and%20deploying%20dashboard.docx) |
| [rsconnect](file:///\\nssstats01\PrimaryCare\Megan\COVID-19-Publication-Dashboard2\shiny_app\rsconnect) | Connects the dashboard to the shiny.io website. This is used to deploy the dashboard and is covered in the [“Updating the Dashboard” SOP](SOP%20-%20COVID%20Dashboard%20-%20Updating%20data%20and%20deploying%20dashboard.docx) |
| [www](file:///\\nssstats01\PrimaryCare\Megan\COVID-19-Publication-Dashboard2\shiny_app\www) | Icons, images, and the css formatting are kept here. This is where the PHS logo is saved |

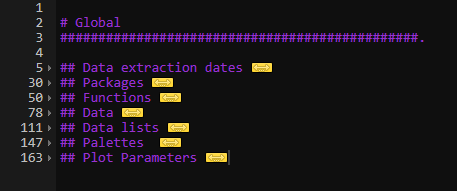
|  |  |
| --- | --- |
| **R Script** | **Function** |
| [AppDeployment](#_AppDeployment) | This is used to deploy the dashboard and is covered in the [“Updating the Dashboard” SOP](SOP%20-%20COVID%20Dashboard%20-%20Updating%20data%20and%20deploying%20dashboard.docx) |
| [Functions\_server](#_Functions_Server) | These are the functions to create the charts for all the different splits |
| [Global](#_Global) | Data processing, loading packages, and load in data. |
| [UI](#_UI) | User Interface. This deals with everything that the user sees and includes the Introduction tab and the users selection boxes on the chart and data tabs |
| [Server](#_Server) | This deals with everything the user doesn’t see. It links up user selections to create the charts |
| [Summary\_tab](#_Summary_tab) | This is the section of Server.R that does everything on the Summary tab |
| [Data\_tab](#_Functions_Server) | This is the section of Server.R that does everything on the Data tab |

## AppDeployment

This is the code used to deploy the dashboard to the PRA site and the live site. This is covered in the [“Updating the Dashboard” SOP](SOP%20-%20COVID%20Dashboard%20-%20Updating%20data%20and%20deploying%20dashboard.docx)

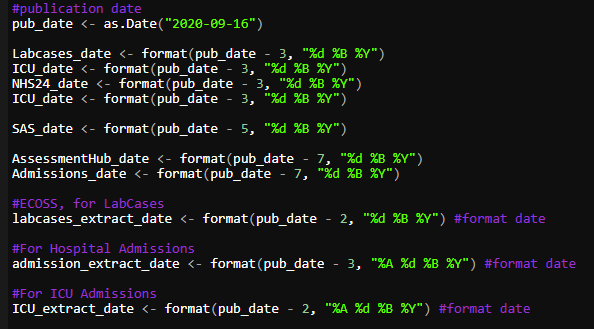
## Global

Global has the following sections:



### Data extraction Dates

This is for dates throughout the dashboard. Publication date can be changed and all the other dates will change based on this.

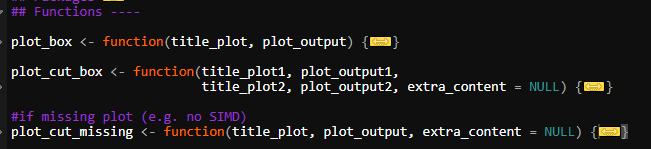


### Packages

This is where we load all the [packages](#_Requirements)

### Functions

Setting defaults for how to display charts. These are for one chart in a row (trend charts), two charts in a row (SIMD and age/sex), or if the chart is missing all data.

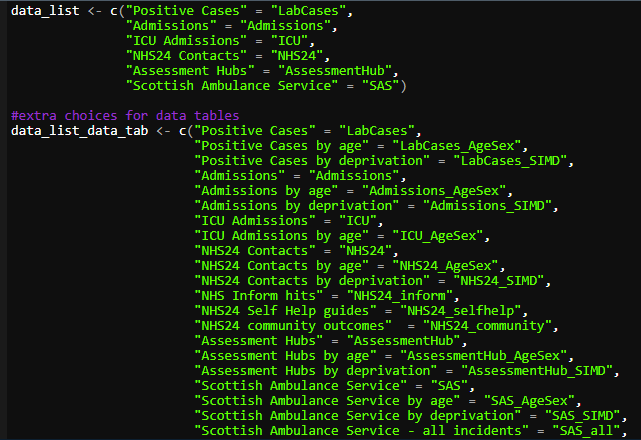


### Data

This is where we load in all the data for the dashboard. These .rds files get updated in the “Updating the Dashboard” SOP.

### Data lists

This creates a list of what to show in the drop down boxes and links it to the dataframes we read in as .rds files. Data\_list is for the Trend Charts tab and Data\_list\_data\_tab is for the data tab.



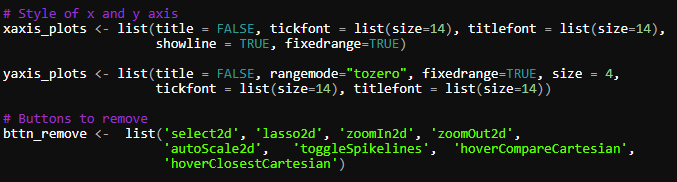
### Palettes

These are the colour palettes used in the charts. You can find the Hex codes here: <https://www.google.com/search?q=color+picker>



### Plot Parameters

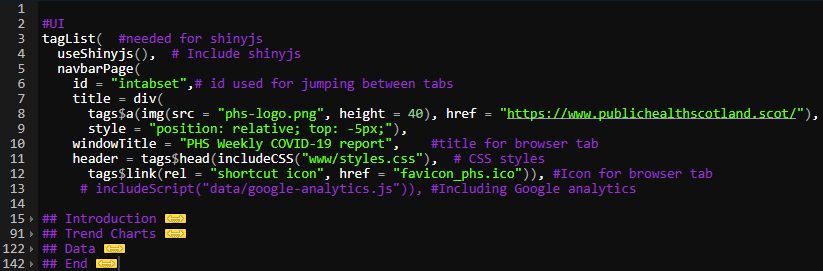
Sets the default formatting for x and y axis for all charts



## UI

The user interface is everything that the user sees and is split into a section for each tab of the dashboard.





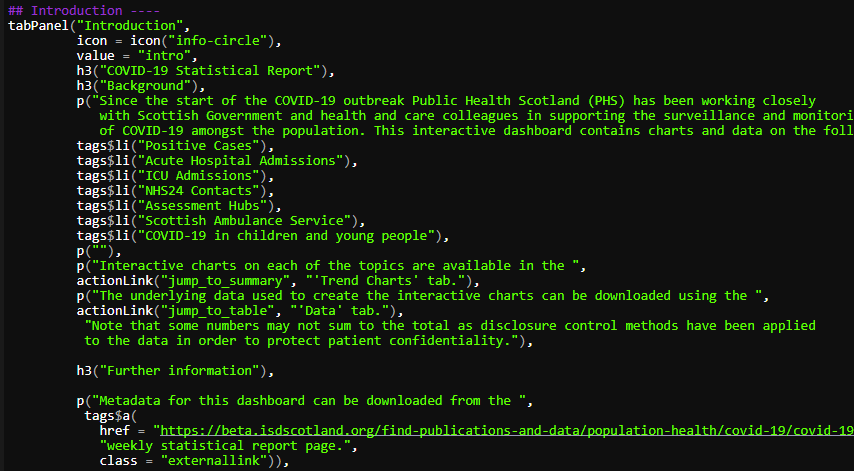
The first section sets the dashboard name and icon for PHS.



### Introduction

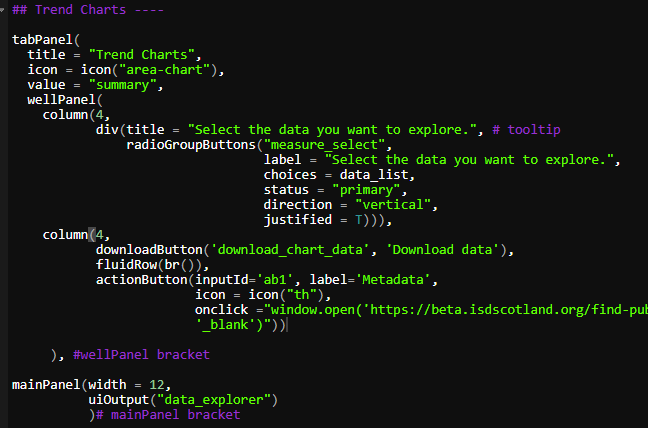
This is where all the text and formatting on the Introduction tab is. The formatting codes can all be found here <https://shiny.rstudio.com/articles/tag-glossary.html>

The most common codes used here are p (new line), h3 (header 3), tags$li (bullet point), tags$a (external link).



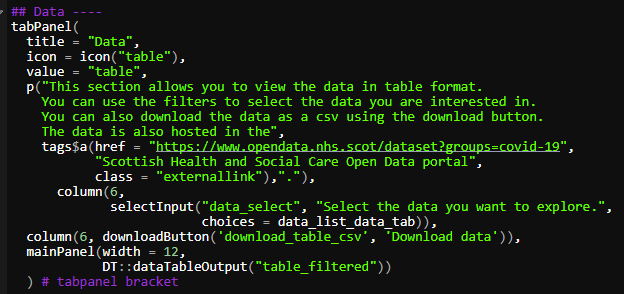
### TrendCharts

This sets the text and formatting for the Trend Charts tab. Code here is for the drop down menu (options are set in [Global](#_Data_lists)) and buttons to download data (set in [Summary Tab](#_Data_downloads)) and see metadata.



### Data

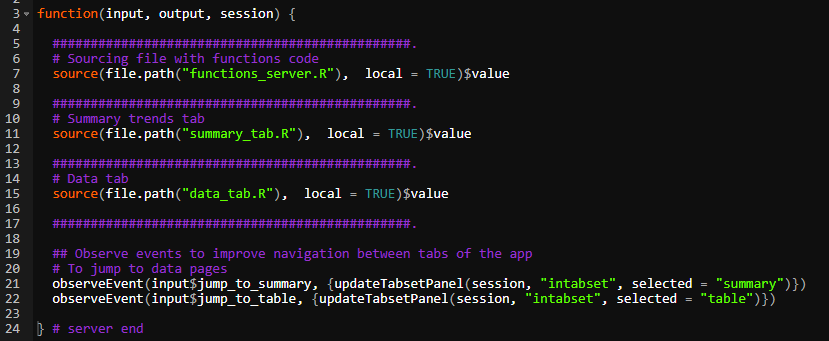
This sets the text and formatting for the Data tab. Code here is for dropdown menu (options are set in [Global](#_Data_lists)) and to download data (set in [Data tab](#_Data_downloads_1))



## Server

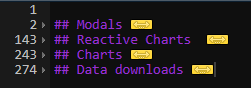
This is a deceptively short bit of syntax. This is because the server code has been split into three sections: [Functions\_server](#_Functions_Server), [Summary\_tab](#_Summary_tab), and [Data\_tab](#_Data_Tab).

The bottom two lines are the code that allows switching to the tabs from the text on the [introduction](#_Introduction) tab.



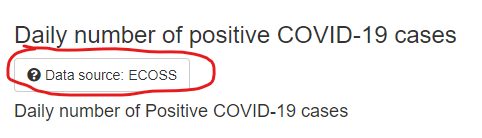
## Summary\_tab

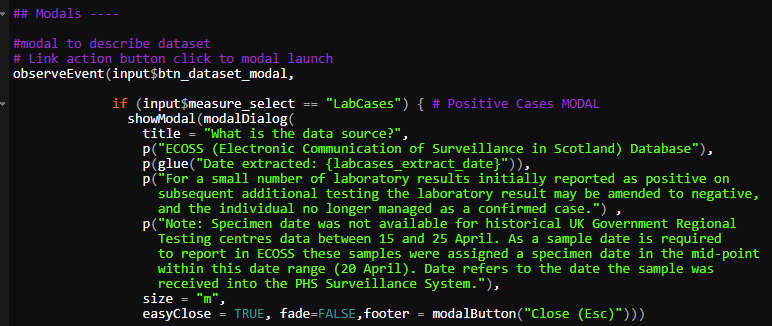
This should be really named “TrendCharts\_tab” but I stole the code from the Wider Impacts dashboard and it’s too much effort to change it. It has the following sections:



### Modals

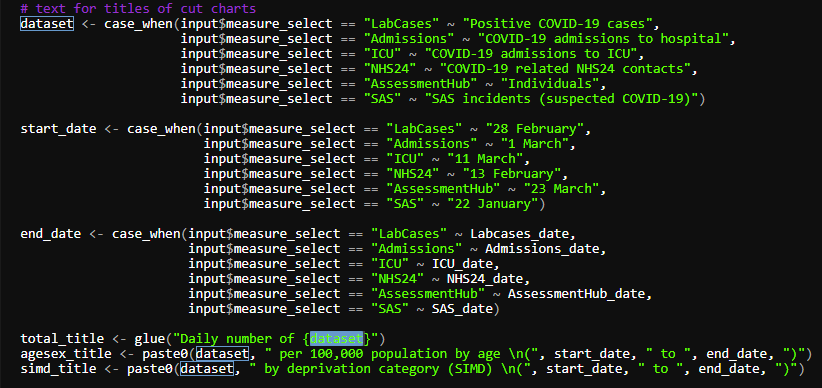
Modals are the extra information pop out boxes. There is one for each dataset but I’ve only posted the Lab Cases one below.



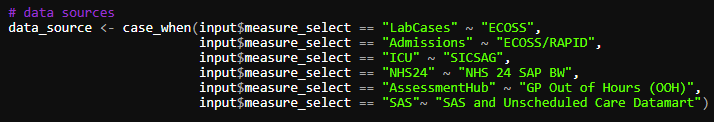


### Reactive Charts

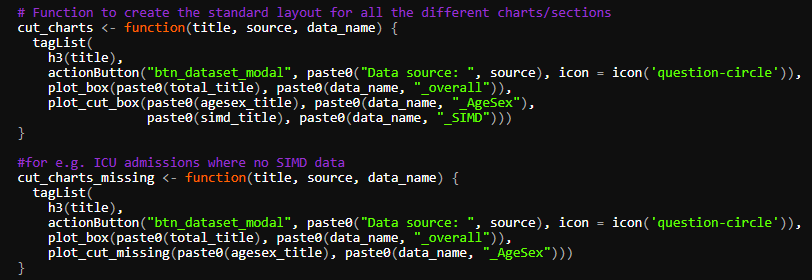
The charts and text shown on the app will depend on what the user wants to see. This first part sets the chart titles based on what the user has selected in the dropdown menu. The end\_dates are set in [Global](#_Data_extraction_Dates).



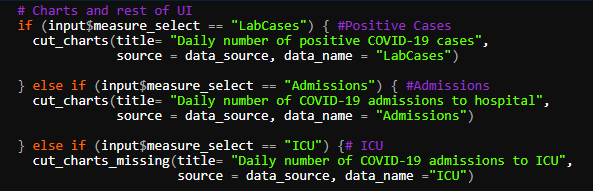
This section changes the text on the [Modal button](#_Modals)



This part sets the layout for charts. It inserts the Chart title, the modal button, the Trend chart, the Age/Sex chart, the SIMD Chart. The second part is the layout for ICU data where there is no SIMD data.

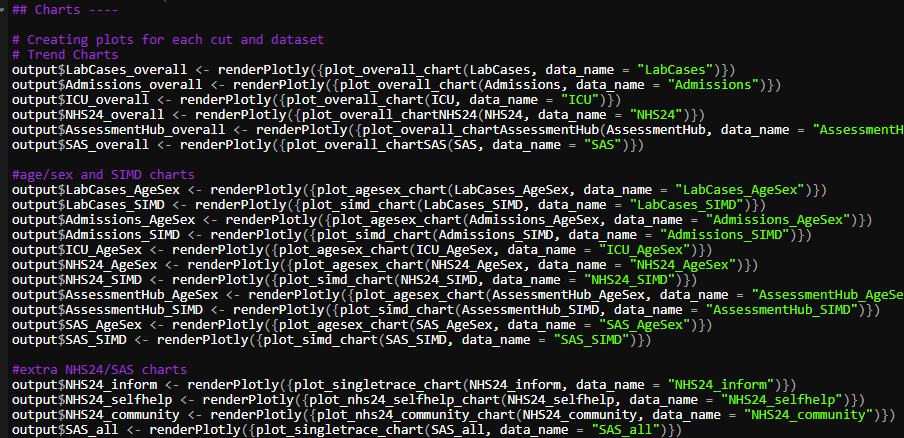


The last part of this section tells it which charts to produce. Only copied Cases, admissions and ICU here but the code has a bit for each dataframe.



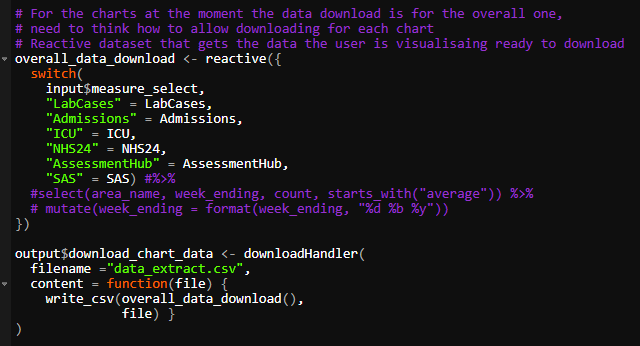
### Charts

This inserts the Charts created by functions\_server. Each chart has its own ID.



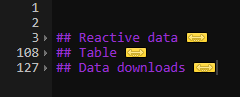
### Data downloads

This will download the data as a csv depending on what has been selected in the drop down menu.



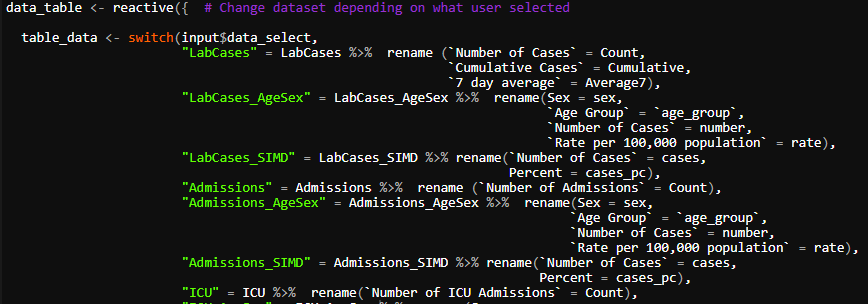
## Data Tab

This is all the code for the Data Tab. It has the following sections:



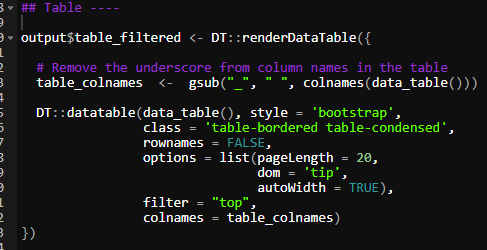
### Reactive data

This will change the data shown based on what the user selects in the drop down menu. Here we are renaming the column headers to be more user friendly (Average7 -> 7 day average)



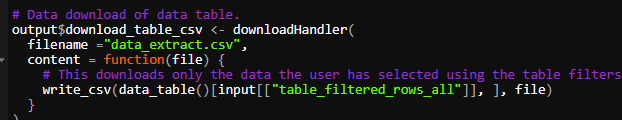
### Table

This sets the layout and formatting of the table.



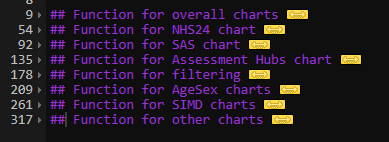
### Data downloads

Downloads data in table as a csv. This will depend on what the user has selected in the drop down menu.



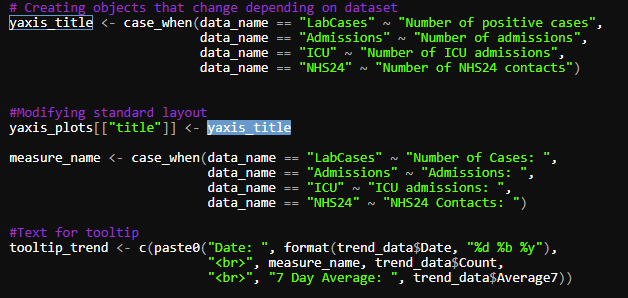
## Functions Server

This is the complicated part. Theirs is where all the charts are created.

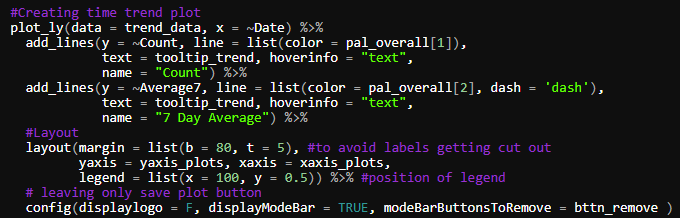


### Function for overall charts

This sets the y axis and tooltip text for Cases, Admissions, ICU charts

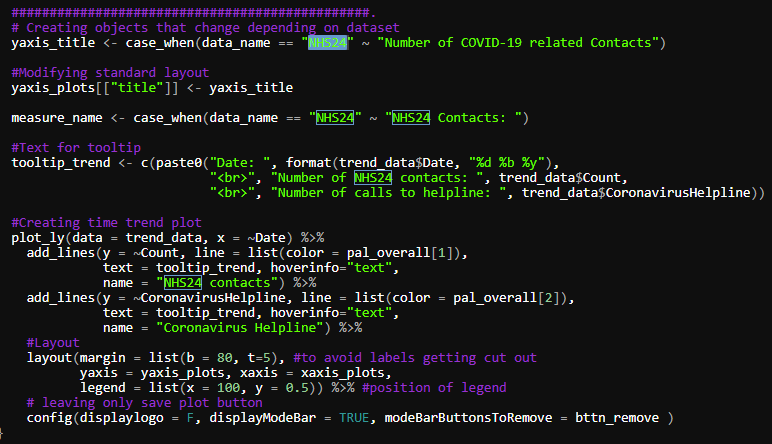


This creates the actual trend charts for Cases, Admissions, ICU.



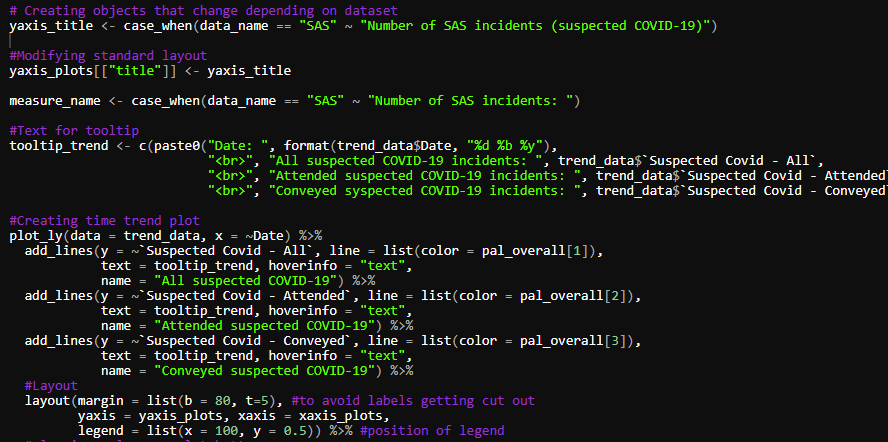
### Function for NHS24 charts

This is similar but creates a trend chart for NHS24 contacts. This sets the text for the y-axis and the tooltip text. The bottom part creates the actual trend chart



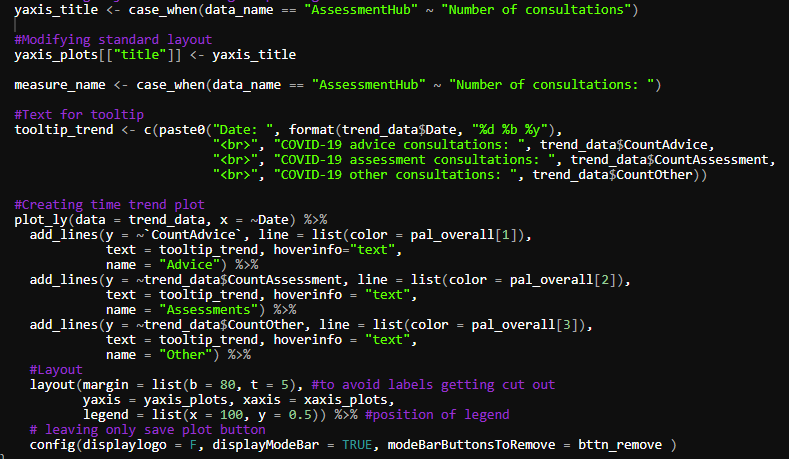
### Function for SAS charts

This is similar but creates a trend chart for SAS. This sets the text for the y-axis and the tooltip text. The bottom part creates the actual trend chart



### Function for Assessment Hubs cart

This is similar but creates a trend chart for Assessment Hubs. This sets the text for the y-axis and the tooltip text. The bottom part creates the actual trend chart

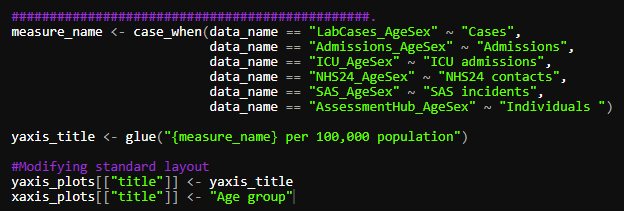


### Function for filtering

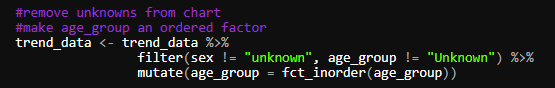
I’m not convinced this bit of code does anything but leaving it in as it works fine. I think this filters the underlying data for the download button.

### Function for AgeSex charts

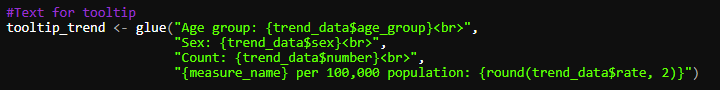
This sets the text for the x and y axis on all the Age/Sex charts.



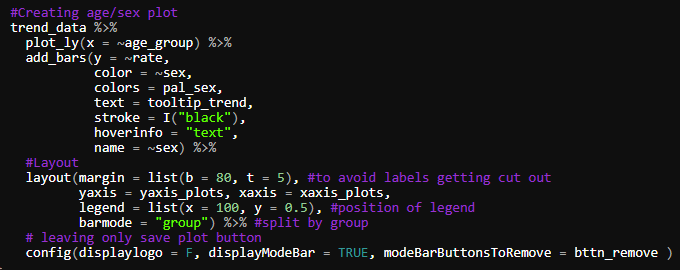
This removes unknowns from the chart.



This sets the tooltip text for all the Age/Sex charts

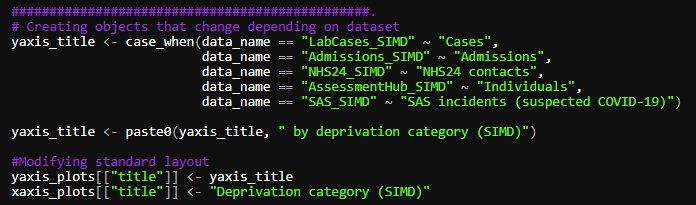


This creates the actual chart.

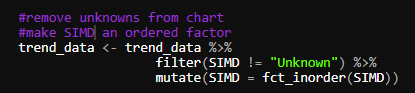


### Function for SIMD charts

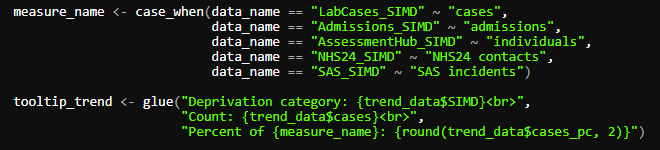
This sets the text for the x and y axis on all the SIMD charts.



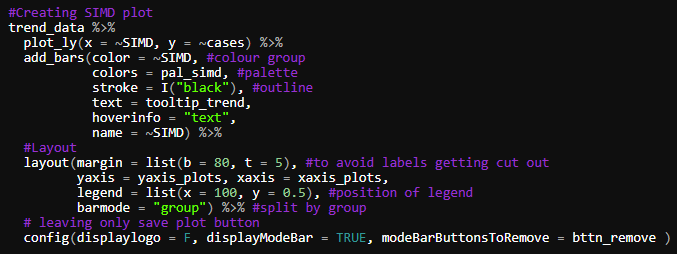
This removes unknowns from the chart.



This sets the tooltip text for all the SIMD charts



This creates the actual chart.

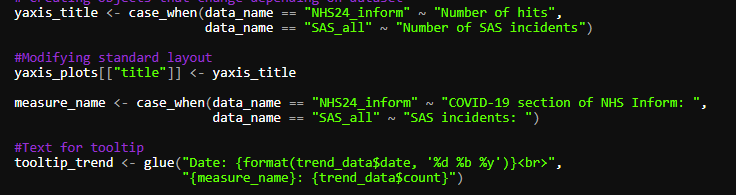


### Function for other charts

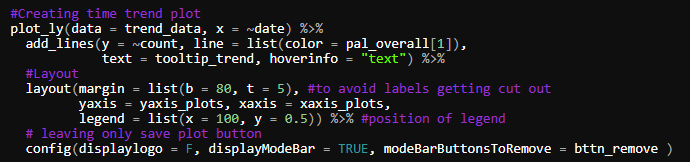
These are the other charts like NHS Inform, NHS24 Outcomes, All SAS.

#### Charts with one line

This applies to NHS24 Inform and All SAS incidents. This part sets the text for the y axis and the tooltip.

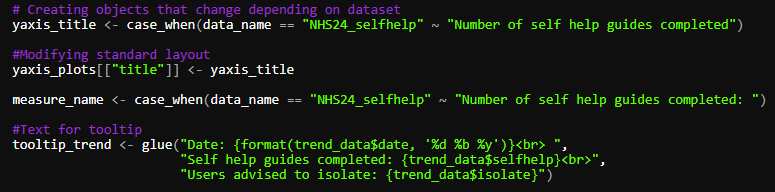


This is the actual chart

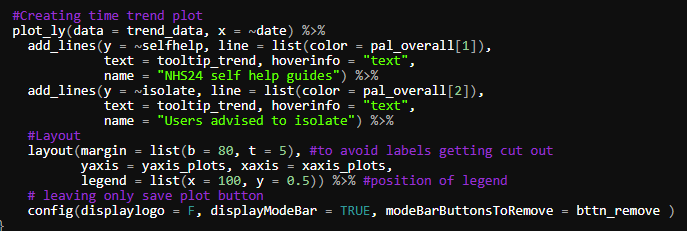


#### Charts with two lines

This is for charts with two lines. This applies to NHS24 Self Help Guides. This part sets the text for the y axis and the tooltip.

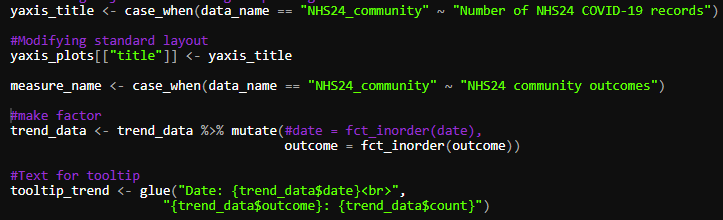


This is the actual chart



#### Stacked bar chart

This is the stacked bar chart for NHS24 Outcomes. This part sets the text for the y axis and the tooltip.



This is the actual chart

