References

Time series forecasting:

https://github.com/ajitsingh98/Time-Series-Analysis-and-Forecasting-with-Python/blob/master/Time_Series_Forecasting_Traditional_Methods.ipynb

CSS Sources:

Range slider creation: https://www.w3schools.com/howto/howto_js_rangeslider.asp
Button styling: https://www.w3schools.com/css/css3_buttons.asp

MAP API:
https://docs.mapbox.com/mapbox-gl-js/api/map/

MAP DATA LAYERS Reference:
https://deck.gl/docs/api-reference/layers/column-layer

Acknowledgement of the use of AI:

Name and version of the generative AI system used; ChatGPT-3.5
Publisher (company that made the AI system); OpenAI
https://chat.openai.com/
- GPT was used to debug and help with the writing of the time series forecasting code.
- AI helped me to understand why the code was giving an error.
- GPT was used in order to troubleshoot some of the test codes and suggest ideas for more tests

Name and version of the generative AI system used; LocofyAI
Publisher (company that made the AI system); Locofy
https://www.locofy.ai/
- This AI was used to aid the conversion between our figma wireframes and the css/html structure of our pages. However, most of it was rewritten in the final product.

Data set attribution

https://data.london.gov.uk/dataset/modelled-estimates-of-recent-births
Creative Commons Attribution License (cc-by)

https://data.london.gov.uk/dataset/patients-registered-at-a-gp-practice
UK Open Government License V3

EVIDENCE OF TESTING:

```
=================================================================================================== test session starts ==
platform win32 -- Python 3.9.0, pytest-8.1.1, pluggy-1.4.0
rootdir: C:\Users\kajan\OneDrive\Documents\GitHub\Test project\comp0034-cw2g-group10
configfile: pyproject.toml
collected 33 items

test_dashboard_app.py
DevTools listening on ws://127.0.0.1:61728/devtools/browser/284df4ae-fbd6-42c9-b1f5-7b57f459180e
.
DevTools listening on ws://127.0.0.1:61772/devtools/browser/d6d83c4b-b178-4dc3-9d0b-1df99594fe46
.
DevTools listening on ws://127.0.0.1:61833/devtools/browser/b132621f-f8e3-4a9a-9bef-46278ba1cd5d
.
DevTools listening on ws://127.0.0.1:61864/devtools/browser/05f32c2c-fc73-4324-aee1-8f98eab86a21
.
DevTools listening on ws://127.0.0.1:61933/devtools/browser/106461ff-76cc-475a-8706-2c71bbbabc1c
[11692:26316:0405/110548.689:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[11692:26316:0405/110548.807:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -107
.
DevTools listening on ws://127.0.0.1:62015/devtools/browser/80865a57-7566-4568-b7c2-84a398c8e299
[23584:22692:0405/110603.404:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[23584:22692:0405/110603.517:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
.
DevTools listening on ws://127.0.0.1:62086/devtools/browser/903c07d9-7316-484f-b622-ade06dacd46f
.
DevTools listening on ws://127.0.0.1:62155/devtools/browser/d4dc6f87-850d-4931-bce4-8a2ac3ff0405
[15436:18436:0405/110623.618:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[15436:18436:0405/110623.843:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -107
[15436:18436:0405/110633.236:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
.
DevTools listening on ws://127.0.0.1:62228/devtools/browser/ccc0a9d9-7e1f-419b-8149-dfc21adfaede
.
DevTools listening on ws://127.0.0.1:62296/devtools/browser/20071eef-6c85-4dfb-9fc1-c63a112342dd
.
DevTools listening on ws://127.0.0.1:62370/devtools/browser/12e4cd84-cdaf-4e38-8825-d1f8ca08e2a3
.
DevTools listening on ws://127.0.0.1:62440/devtools/browser/f8a38214-a928-4c21-ba76-8a5c8a1e5bbe
.
DevTools listening on ws://127.0.0.1:62509/devtools/browser/d80cc2de-e59d-4cad-8906-93671a3eb2e5
.
DevTools listening on ws://127.0.0.1:62578/devtools/browser/d3805d73-f21b-45ba-8403-e86a249b6d64
[18504:16040:0405/110727.386:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[18504:16040:0405/110727.449:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[18504:16040:0405/110740.872:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -107
.
DevTools listening on ws://127.0.0.1:62676/devtools/browser/1f3080f8-8146-48ae-93e9-814d9fe25ae1
[17080:25384:0405/110759.560:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[17080:25384:0405/110759.631:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -107
```

```
[24280:12096:0405/110803.867:ERROR:device_event_log_impl.cc(195)] [11:08:03.866] USB: usb_service_win.cc:105 SetupDiGetDeviceProperty({{A45C254E-DF1C-4EFD-8020-67D146A850E0}, 6}) failed: Element not found. (0x490)

DevTools listening on ws://127.0.0.1:62778/devtools/browser/ceae7fc9-157a-45b7-b788-bb0f53bf58a9
[26216:26400:0405/110818.804:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[26216:26400:0405/110818.867:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100

DevTools listening on ws://127.0.0.1:62857/devtools/browser/eea5f71b-4eac-4876-839d-25bbcdd11903
[8760:1656:0405/110836.636:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[8760:1656:0405/110836.709:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100

DevTools listening on ws://127.0.0.1:62936/devtools/browser/16e8a4df-fd39-44b8-bcb4-3428a5f6ba64
[26116:11476:0405/110854.066:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100
[26116:11476:0405/110854.149:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100

DevTools listening on ws://127.0.0.1:63033/devtools/browser/0f7bb629-12ef-4632-af7b-d17f25ad59bf

DevTools listening on ws://127.0.0.1:63096/devtools/browser/f91a0304-0a43-4675-8dcb-a997854c2c8a
[13080:7572:0405/110922.927:ERROR:ssl_client_socket_impl.cc(970)] handshake failed; returned -1, SSL error code 1, net_error -100

DevTools listening on ws://127.0.0.1:63171/devtools/browser/8b80ab6f-1b6e-4ce0-80a9-560af56867d9

DevTools listening on ws://127.0.0.1:63240/devtools/browser/1e9cac38-6477-4cc5-8876-dc8e31e9bd34

DevTools listening on ws://127.0.0.1:63305/devtools/browser/d8d0b5d0-2ee8-4565-8134-09f7281a79fd

DevTools listening on ws://127.0.0.1:63369/devtools/browser/c2c25a76-3ec6-404e-84dd-b36642c85e1e

DevTools listening on ws://127.0.0.1:63433/devtools/browser/c130fc10-8f86-4235-96df-81d42ceca065

DevTools listening on ws://127.0.0.1:63495/devtools/browser/4699635b-d45a-478c-97e8-aa35bea040c7

DevTools listening on ws://127.0.0.1:63549/devtools/browser/32927551-57e0-416e-8cc7-ab77ba63d935

DevTools listening on ws://127.0.0.1:63603/devtools/browser/eecdebbb-acc7-48a0-96f3-a0a60069880e
......                                                                                        [100%]
===================================================== 33 passed in 330.72s (0:05:30) =====================================================
```

100% OF TESTS PASSED

EVIDENCE OF TOML

```
PS C:\Users\kajan\OneDrive\Documents\GitHub\Test project\comp0034-cw2g-group10> pip install -e .
Obtaining file:///C:/Users/kajan/OneDrive/Documents/GitHub/Test%20project/comp0034-cw2g-group10
  Installing build dependencies ... done
  Checking if build backend supports build_editable ... done
  Getting requirements to build editable ... done
  Installing backend dependencies ... done
  Preparing editable metadata (pyproject.toml) ... done
Requirement already satisfied: attrs in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (23.2.0)
Requirement already satisfied: blinker in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.7.0)
Requirement already satisfied: certifi in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2023.11.17)
Requirement already satisfied: cffi in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.16.0)
Requirement already satisfied: click in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (8.1.7)
Requirement already satisfied: colorama in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (0.4.6)
Requirement already satisfied: contourpy in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.2.1)
Requirement already satisfied: cycler in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (0.12.1)
Requirement already satisfied: et-xmlfile in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.1.0)
Requirement already satisfied: exceptiongroup in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.2.0)
Requirement already satisfied: Flask in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (3.0.0)
Requirement already satisfied: fonttools in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (4.50.0)
Requirement already satisfied: h11 in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (0.14.0)
Requirement already satisfied: idna in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (3.6)
Requirement already satisfied: iniconfig in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.0.0)
Requirement already satisfied: itsdangerous in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.1.2)
Requirement already satisfied: Jinja2 in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (3.1.2)
Requirement already satisfied: kiwisolver in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.4.5)
Requirement already satisfied: MarkupSafe in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.1.3)
Requirement already satisfied: matplotlib in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (3.8.4)
Requirement already satisfied: numpy in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.26.2)
Requirement already satisfied: openpyxl in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (3.1.2)
Requirement already satisfied: outcome in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.3.0.post0)
Requirement already satisfied: packaging in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (23.2)
Requirement already satisfied: pandas in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.1.4)
Requirement already satisfied: pathlib in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.0.1)
Requirement already satisfied: pillow in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (10.2.0)
Requirement already satisfied: pip in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (23.3.2)
Requirement already satisfied: pluggy in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.4.0)
Requirement already satisfied: pycparser in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.22)
Requirement already satisfied: PyJWT in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.8.0)
Requirement already satisfied: pyparsing in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (3.1.2)
Requirement already satisfied: PySocks in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.7.1)
Requirement already satisfied: pytest in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (8.1.1)
Requirement already satisfied: python-dateutil in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.8.2)
Requirement already satisfied: pytz in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2023.3.post1)
Requirement already satisfied: selenium in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (4.19.0)
Requirement already satisfied: setuptools in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (49.2.1)
Requirement already satisfied: six in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.16.0)
Requirement already satisfied: sniffio in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.3.1)
Requirement already satisfied: sortedcontainers in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.4.0)
Requirement already satisfied: tomli in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.0.1)
Requirement already satisfied: trio in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (0.25.0)
Requirement already satisfied: trio-websocket in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (0.11.1)
Requirement already satisfied: typing-extensions in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (4.9.0)
Requirement already satisfied: tzdata in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2023.4)
Requirement already satisfied: urllib3 in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (2.1.0)
Requirement already satisfied: Werkzeug in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (3.0.1)
Requirement already satisfied: wsproto in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from DashboardApp==1) (1.2.0)
Requirement already satisfied: importlib-metadata>=3.6.0 in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from Flask->DashboardApp==1) (7.0.1)
Requirement already satisfied: importlib-resources>=3.2.0 in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from matplotlib->DashboardApp==1) (6.4.0)
Requirement already satisfied: zipp>=0.5 in c:\users\kajan\appdata\local\programs\python\python39\lib\site-packages (from importlib-metadata>=3.6.0->Flask->DashboardApp==1) (3.17.0)
Building wheels for collected packages: DashboardApp
  Building editable for DashboardApp (pyproject.toml) ... done
  Created wheel for DashboardApp: filename=DashboardApp-1-0.editable-py3-none-any.whl size=2765 sha256=89f1d6fb89093432f516e1814822026cb39703259e53f338005e7b5a30329b0e
  Stored in directory: C:\Users\kajan\AppData\Local\Temp\pip-ephem-wheel-cache-651gtb4c\wheels\15\57\e3\7ec0b4f20f56d2b6b7c7791cc491b48c3a11a772a76c0dc115
Successfully built DashboardApp
Installing collected packages: DashboardApp
Successfully installed DashboardApp-1

[notice] A new release of pip is available: 23.3.2 -> 24.0
[notice] To update, run: python.exe -m pip install --upgrade pip
PS C:\Users\kajan\OneDrive\Documents\GitHub\Test project\comp0034-cw2g-group10> []
```