Camden Cyclists Sheet-to-Map Tool

Beta Release 3   George Coulouris <george@coulouris.net>   Doc. 19-5-2020

Intro

This web app converts a spreadsheet stored as an online Google Sheet into a map showing a geo-located pin for each row in the spreadsheet. Information in the sheet can be viewed in a pop-up for each pin. As it is a webapp, no installation is required. The Javascript source code can be viewed and cloned on github here. The app can be invoked on Camden Cyclists website or on github here. It can be embedded in other websites using an HTML *iframe* or accessed via a link.

The Sheet

The app is highly configurable to accommodate almost any sheet. The sheet must have a header row (the first row) holding the name of each column. It must include a StreetView column. The StreetView field in each row contains a link to a Google Street View positioned where a pin is required. The last page of this document shows a small Google Sheet with only 4 rows derived from the sheet we are using to produce the map of our suggested Covid-19 interventions.

The app reads the data needed for each pin from a list of named columns. The default list of columns is:

Title   Location Description   Photos   StreetView   Status   Date

But that list of columns can be reconfigured as required, as described below under **Configuring the App**, with the exception of the StreetView column which must be present. The columns in the sheet need not be in the order listed. Columns in the sheet not listed are ignored (so their contents cannot be seen on the map).

A StreetView entry for each row is obtained by opening a Street View image at the required position in Google Maps and copying the contents of the browser's URL address bar (*not* the 'sharing' URL that is available via a menu entry Google Maps).

The Map

The app processes the rows of the Google Sheet placing a pin on the map at the position of each StreetView. The pins have two associated pop-ups, a small pop-up appears when the mouse rolls over a pin showing the contents of the first two columns in the list mentioned above. Clicking on the pin produces a larger pop-up displaying the contents of the specified list of columns.

The pins are coloured according to the contents of the **Category** field. The colours are assigned according to another list. The defaults, which are quite specific to Camden Cyclists Covid-19 interventions map, are:

Shops: red, Filter: green, MainRoad: orange

But they can be configured to most other needs as describe below.

By default the entry COMPLETED in the Status field produces a pin with the icon overlaid by a tick thus . If no Status column is present in the sheet or the Status field never has a value COMPLETED, this feature is dormant. This feature will eventually be extended to support different values and icon styles.

Configuring the App

In this description we access the app at http://camdencyclists.org.uk/uploads/sheet-to-map-release3. That bare link invokes the app and applies it to a Google Sheet listing Camden Cyclists' suggested Covid19 interventions. The app can also be accessed on github here and the examples could have been constructed using that address.

To configure the app for other needs you must append parameters to the URL string as described below. URL parameters are separated from the address part by a '?'. Parameters are appended after the '?' with a '&' separating them. The parameters may be given in any order. We describe below all of the available options to configure the map and the information displayed in the popup boxes. The task of constructing the URL may seem a little complex, but you need only do it once. When you have done it, you can insert it on your website as link, or better, embed it in an *iframe* if your web service provider allows that.

Putting It Together

To start putting a new map together, I recommend starting by making a Google Sheet with columns for the information you want to present and include the columns StreetView and Category. Title and Description will normally be included as well. I recommend then testing it with a URL with the SheetURL as the only parameter, as described in the next subsection.

Once you have got that working, you can tailor the appearance and content of your map using the other URL parameters described below. To enter URLs with several parameters I recommend using this Chrome extension:

> Easy URL Editor - Chrome Web Store
> https://chrome.google.com/webstore/detail/easy-url-editor/kojpdadnbbicdfgfadonheclfpcjpiah
> Type the parameter names and values directly into Easy URL Editor's individual text boxes and it will convert the punctuation correctly to their hexadecimal representations.

To keep things simple you should minimise the use of URL parameters. They are only needed when you want your map's presentation to differ from the one used at
http://camdencyclists.org.uk/suggested-covid-19-highway-interventions/

SheetUrl

To apply the app to any Google Sheet we append a *SheetUrl* parameter.

To make the sheet you have prepared available to the Sheet-to-Map app you must first use the *Publish to the web* operation operation that you will find in the File menu in Google Sheets. The *Publish to the web* operation delivers a URL that you can discard or save for an as-yet unknown purpose. The URL you should use is a copy from the browser address bar, with any trailing characters from the last '/' to the end removed. e.g. if we copy this from the address bar:

https://docs.google.com/spreadsheets/d/103Gcyl_xyu4opdY2QcykCgzKTF-hf3_BJUjrujdreyI/edit#gid=555332164

We should actually use:

> https://docs.google.com/spreadsheets/d/103Gcyl_xyu4opdY2QcykCgzKTF-hf3_BJUjrujdreyI

Thus the parameter string is
SheetUrl=https://docs.google.com/spreadsheets/d/103Gcyl_xyu4opdY2QcykCgzKTF-hf3_BJUjrujdreyI

And this is the full URL to open a map made from this very simple sheet with just 4 rows of data:

http://camdencyclists.org.uk/uploads/sheet-to-map-release3**?SheetUrl=https://docs.google.com/spreadsheets/d/103Gcyl_xyu4opdY2QcykCgzKTF-hf3_BJUjrujdreyI**

FieldsToShow

This parameter specifies which fields will be displayed in the pop-up associated with each pin. Thus:
FieldsToShow='Title','Location','Photos','StreetView'

So this URL opens the same map, but with pop-ups showing just 4 fields:

http://camdencyclists.org.uk/uploads/sheet-to-map-release3?SheetUrl=https://docs.google.com/spreadsheets/d/103Gcyl_xyu4opdY2QcykCgzKTF-hf3_BJUjrujdreyl**&FieldsToShow='Title','Location','Photos','StreetView'**

FieldStyles

This parameter defines *how* fields will be presented in the pop-ups associated with the pins. Thus:
FieldStyles='Title':'H5','Location':'H4','Description':'p','StreetView':'links','Photos':'links'

So this URL loads the same map with some variations to the appearance of the fields in the pop-ups:
http://camdencyclists.org.uk/uploads/sheet-to-map-release3?SheetUrl=https://docs.google.com/spreadsheets/d/103Gcyl_xyu4opdY2QcykCgzKTF-hf3_BJUjrujdreyl/pub&FieldsToShow='Title','Location','Photos','StreetView','Status'**&FieldStyles='Title':'H5','Location':'H4','Description':'p','StreetView':'links','Photos':'links'**

The presentation style of each field is specified with a two-part parameter such as 'Location' : 'H2'. The options for the second part are standard HTML tag values (H1, H2, H3, H4, H5, p, etc.) or the special tag 'links'. The 'links' tag applies to fields containing only one or more web URLs separated by spaces or line breaks. E.g. when applied to a the 'photos' field in our sample Sheet below it results in the conversion of this content:

> https://live.staticflickr.com/65535/49822056197_0b9b88e26c_h.jpg
> https://live.staticflickr.com/65535/49821763321_41a014f52c_h.jpg

into the **Photos-1 Photos-2** line in the this popup:

Gaisford Road – queue and parking
Location: Earth

Photos–1 Photos–2

StreetView

Status: REPORTED

CategoriesToColours

Icons are restricted to standard map markers, but you can choose the colour assignment. You can assign colours to the values in the *Categories* column of your Sheet. Thus:
CategoriesToColours='Shops':'violet','Filter':'green','MainRoad':'pink','Schools':'blue' Any of the standards HTML colour names can be used or the Hexadecimal codes.

http://camdencyclists.org.uk/uploads/sheet-to-map-release3?SheetUrl=https://docs.google.com/spreadsheets/d/103Gcyl_xyu4opdY2QcykCgzKTF-hf3_BJUjrujdreyl/pub&FieldsToShow='Title','Location','Photos','StreetView','Status'&FieldStyles='Title':'H3','Location':'H5','Description':'p','Photos':'links'**&CategoriesToColours='Shops':'violet','Filter':'green','MainRoad':'pink','Schools':'blue'**

FieldsWithLabel

This parameter enables us to choose which fields in popups are labelled with their column name. In the image above, only the Location and Status fields are labelled (because the meaning of the others is obvious). The FieldsWithLabel URL parameter selects explicitly the fields to be labelled. Thus
FieldsWithLabel='Title','Location','Status' forces labels to appear before the three fields named.

Thus:

http://camdencyclists.org.uk/uploads/sheet-to-map-release3?SheetUrl=https://docs.google.com/spreadsheets/d/103Gcyl_xyu4opdY2QcykCgzKTF-hf3_BJUjrujdreyl/pub&FieldsToShow='Title','Location','Photos','StreetVie

w','Status'&FieldStyles='Title':'H3','Location':'H5','Description':'p','Photos':'links'&CategoriesToColours='Shops':'violet','Filter':'green','MainRoad':'pink','Schools':'blue'**&FieldsWithLabel='Title','Location','Status'**

MapboxAccessToken

This web app uses the Mapbox GL mapping API and platform (a Javascript Library and a vector tile server) and an access token is embedded in the app to allow use of the platform. The token is attached to my Mapbox user account which is allowed quite a lot of free use and I'm happy for the early users of Sheet-to-Map to use it on my account. But if/when becomes more popular users will need to obtain a Mapbox account of their own and another URL parameter specifying its use. Thus (this is not a valid access token': **MapboxAccessToken='pk.eyJ1IjoiZ2VvcmdpbbzgiLCJhIjoiY2IoN2dtMmZ5MDAxbnZzbTNrZ2w5aWY4dCJ9.RJxJPq'**

Problems and limitations

- After editing a Google Sheet the relevant changes to the map are often delayed. Try clearing the browser cache or using a different browser.
- The titles for the columns *must be in the first row* of the Google Sheet.
- The COMPLETED icon styling feature should be extended to support different values and icon styles.
- Borough boundaries (and other *admin* boundaries): At present a single boundary shape can be loaded from a GeoJSON file if available. A better solution would be to add an OSM Admin Boundaries layer covering all the boroughs (and more) but I have been unable to find a vector tile server offering a Mapbox-compatible tile set.

Appendix: The Example Google Sheet

A minimal sample sheet can be found here. You can copy it to make a sheet.

Title	Location	Description	Category	StreetView	Status	Date	Photos
Gaisford Road – queue and parking	Earth	The Earth queue is formed along Gaisford Road but it would be necessary to walk in the road or on the other side due to the siting of the tree, the seat and the parked cars.	Shops	https://www.google.com/m	REPORTED		https://live.staticflickr.com/65535/49788792422_f19625cc4c_h.jpg https://live.staticflickr.com/65535/49788477721_25244b3ca9_h.jpg
Kilburn High Road – queue and closure	M and S	Give more space on the pavement for the queue forming to enter the M&S by making a point closure of West End Lane where it meets Kilburn High Road	Filter	https://www.google.com/m	NEW		
Expand cycle l Prince of Wales R		Mark emergency bike lanes for the use of key workers and others during the lockdown.	MainRoad	https://www.google.com/m	NETWORK		