

Pip install

```
In [1]: !pip install keplergl==0.3.2
```

```
Requirement already satisfied: keplergl==0.3.2 in /usr/local/lib/python3.7/dist-packages (0.3.2)
Requirement already satisfied: traitlets>=0.2.1 in /usr/local/lib/python3.7/dist-packages (from keplergl==0.3.2) (0.2.1)
Requirement already satisfied: Shapely>=1.6.4.post2 in /usr/local/lib/python3.7/dist-packages (from keplergl==0.3.2) (1.8.0)
Requirement already satisfied: pandas>=0.23.0 in /usr/local/lib/python3.7/dist-packages (from keplergl==0.3.2) (1.1.5)
Requirement already satisfied: ipywidgets<8,>=7.0.0 in /usr/local/lib/python3.7/dist-packages (from keplergl==0.3.2) (7.6.5)
Requirement already satisfied: geopandas>=0.5.0 in /usr/local/lib/python3.7/dist-packages (from keplergl==0.3.2) (0.10.2)
Requirement already satisfied: pyproj>=2.2.0 in /usr/local/lib/python3.7/dist-packages (from geopandas>=0.5.0->keplergl==0.3.2) (3.2.1)
Requirement already satisfied: fiona>=1.8 in /usr/local/lib/python3.7/dist-packages (from geopandas>=0.5.0->keplergl==0.3.2) (1.8.20)
Requirement already satisfied: click>=4.0 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas>=0.5.0->keplergl==0.3.2) (7.1.2)
Requirement already satisfied: attrs>=17 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas>=0.5.0->keplergl==0.3.2) (21.4.0)
Requirement already satisfied: six>=1.7 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas>=0.5.0->keplergl==0.3.2) (1.15.0)
Requirement already satisfied: munch in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas>=0.5.0->keplergl==0.3.2) (2.5.0)
Requirement already satisfied: certifi in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas>=0.5.0->keplergl==0.3.2) (2021.10.8)
Requirement already satisfied: setuptools in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas>=0.5.0->keplergl==0.3.2) (57.4.0)
Requirement already satisfied: click-plugins>=1.0 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas>=0.5.0->keplergl==0.3.2) (1.1.1)
Requirement already satisfied: cligj>=0.5 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas>=0.5.0->keplergl==0.3.2) (0.7.2)
Requirement already satisfied: ipython>=4.0.0 in /usr/local/lib/python3.7/dist-packages (from ipywidgets<8,>=7.0.0->keplergl==0.3.2) (5.5.0)
Requirement already satisfied: ipykernel>=4.5.1 in /usr/local/lib/python3.7/dist-packages (from ipywidgets<8,>=7.0.0->keplergl==0.3.2) (4.10.1)
Requirement already satisfied: ipython-genutils<=0.2.0 in /usr/local/lib/python3.7/dist-packages (from ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.2.0)
Requirement already satisfied: traitlets>=4.3.1 in /usr/local/lib/python3.7/dist-packages (from ipywidgets<8,>=7.0.0->keplergl==0.3.2) (5.1.1)
Requirement already satisfied: widgetsnbextension<=3.5.0 in /usr/local/lib/python3.7/dist-packages (from ipywidgets<8,>=7.0.0->keplergl==0.3.2) (3.5.2)
Requirement already satisfied: nbformat>=4.2.0 in /usr/local/lib/python3.7/dist-packages (from ipywidgets<8,>=7.0.0->keplergl==0.3.2) (5.1.3)
Requirement already satisfied: jupyterlab-widgets>=1.0.0 in /usr/local/lib/python3.7/dist-packages (from ipywidgets<8,>=7.0.0->keplergl==0.3.2) (1.0.2)
Requirement already satisfied: jupyter-client in /usr/local/lib/python3.7/dist-packages (from ipykernel>=4.5.1->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (5.3.5)
Requirement already satisfied: tornado>=4.0 in /usr/local/lib/python3.7/dist-packages (from ipykernel>=4.5.1->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (5.1.1)
Requirement already satisfied: simplegeneric<0.8 in /usr/local/lib/python3.7/dist-packages (from ipython>=4.0.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.8.1)
Requirement already satisfied: pygments in /usr/local/lib/python3.7/dist-packages (from ipython>=4.0.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (2.6.1)
Requirement already satisfied: pickleshare in /usr/local/lib/python3.7/dist-packages (from ipython>=4.0.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.7.5)
Requirement already satisfied: pexpect in /usr/local/lib/python3.7/dist-packages (from ipython>=4.0.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (4.8.0)
Requirement already satisfied: decorator in /usr/local/lib/python3.7/dist-packages (from ipython>=4.0.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (4.4.2)
Requirement already satisfied: prompt-toolkit<2.0.0,>=1.0.4 in /usr/local/lib/python3.7/dist-packages (from ipython>=4.0.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (1.0.18)
Requirement already satisfied: jsonschema<=2.5.0,>=2.4 in /usr/local/lib/python3.7/dist-packages (from nbformat>=4.2.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (4.3.3)
Requirement already satisfied: jupyter-core in /usr/local/lib/python3.7/dist-packages (from nbformat>=4.2.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (4.9.1)
```

Requirement already satisfied: pyparsing!=0.17.0,!>0.17.1,!>0.17.2,>=0.14.0 in /usr/local/lib/python3.7/dist-packages (from jsonschema!=2.5.0,>=2.4->nbformat>=4.2.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.18.0)

Requirement already satisfied: importlib-metadata in /usr/local/lib/python3.7/dist-packages (from jsonschema!=2.5.0,>=2.4->nbformat>=4.2.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (4.10.0)

Requirement already satisfied: importlib-resources>=1.4.0 in /usr/local/lib/python3.7/dist-packages (from jsonschema!=2.5.0,>=2.4->nbformat>=4.2.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (5.4.0)

Requirement already satisfied: typing-extensions in /usr/local/lib/python3.7/dist-packages (from jsonschema!=2.5.0,>=2.4->nbformat>=4.2.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (3.10.0.2)

Requirement already satisfied: zipp>=3.1.0 in /usr/local/lib/python3.7/dist-packages (from importlib-resources>=1.4.0->jsonschema!=2.5.0,>=2.4->nbformat>=4.2.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (3.7.0)

Requirement already satisfied: pytz>=2017.2 in /usr/local/lib/python3.7/dist-packages (from pandas>=0.23.0->keplergl==0.3.2) (2018.9)

Requirement already satisfied: python-dateutil>=2.7.3 in /usr/local/lib/python3.7/dist-packages (from pandas>=0.23.0->keplergl==0.3.2) (2.8.2)

Requirement already satisfied: numpy>=1.15.4 in /usr/local/lib/python3.7/dist-packages (from pandas>=0.23.0->keplergl==0.3.2) (1.19.5)

Requirement already satisfied: wcwidth in /usr/local/lib/python3.7/dist-packages (from prompt-toolkit<2.0.0,>=1.0.4->ipython>=4.0.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.2.5)

Requirement already satisfied: notebook>=4.4.1 in /usr/local/lib/python3.7/dist-packages (from widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (5.3.1)

Requirement already satisfied: nbconvert in /usr/local/lib/python3.7/dist-packages (from notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (5.6.1)

Requirement already satisfied: terminado>=0.8.1 in /usr/local/lib/python3.7/dist-packages (from notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.12.1)

Requirement already satisfied: Send2Trash in /usr/local/lib/python3.7/dist-packages (from notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (1.8.0)

Requirement already satisfied: jinja2 in /usr/local/lib/python3.7/dist-packages (from notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (2.11.3)

Requirement already satisfied: pyzmq>=13 in /usr/local/lib/python3.7/dist-packages (from jupyter-client->ipykernel>=4.5.1->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (22.3.0)

Requirement already satisfied: ptyprocess in /usr/local/lib/python3.7/dist-packages (from terminado>=0.8.1->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.7.0)

Requirement already satisfied: MarkupSafe>=0.23 in /usr/local/lib/python3.7/dist-packages (from jinja2->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (2.0.1)

Requirement already satisfied: mistune<2,>=0.8.1 in /usr/local/lib/python3.7/dist-packages (from nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.8.4)

Requirement already satisfied: defusedxml in /usr/local/lib/python3.7/dist-packages (from nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.7.1)

Requirement already satisfied: bleach in /usr/local/lib/python3.7/dist-packages (from nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (4.1.0)

Requirement already satisfied: testpath in /usr/local/lib/python3.7/dist-packages (from nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.5.0)

Requirement already satisfied: entrypoints>=0.2.2 in /usr/local/lib/python3.7/dist-packages (from nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.3)

Requirement already satisfied: pandocfilters>=1.4.1 in /usr/local/lib/python3.7/dist-packages (from nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (1.5.0)

Requirement already satisfied: webencodings in /usr/local/lib/python3.7/dist-packages (from bleach->nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (0.5.1)

Requirement already satisfied: packaging in /usr/local/lib/python3.7/dist-packages (from bleach->nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (21.3)

Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in /usr/local/lib/python3.7/dist-packages (from packaging->bleach->nbconvert->notebook>=4.4.1->widgetsnbextension~3.5.0->ipywidgets<8,>=7.0.0->keplergl==0.3.2) (3.0.6)

In [2]: `!pip install geopandas`

Requirement already satisfied: geopandas in /usr/local/lib/python3.7/dist-packages (0.10.2)

Requirement already satisfied: pyproj>=2.2.0 in /usr/local/lib/python3.7/dist-packages (from geopandas) (3.2.1)

Requirement already satisfied: shapely>=1.6 in /usr/local/lib/python3.7/dist-packages (from geopandas) (1.8.0)

Requirement already satisfied: pandas>=0.25.0 in /usr/local/lib/python3.7/dist-packages (from g

eopandas) (1.1.5)
 Requirement already satisfied: fiona>=1.8 in /usr/local/lib/python3.7/dist-packages (from geopandas) (1.8.20)
 Requirement already satisfied: certifi in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas) (2021.10.8)
 Requirement already satisfied: click>=4.0 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas) (7.1.2)
 Requirement already satisfied: six>=1.7 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas) (1.15.0)
 Requirement already satisfied: munch in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas) (2.5.0)
 Requirement already satisfied: click-plugins>=1.0 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas) (1.1.1)
 Requirement already satisfied: cligj>=0.5 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas) (0.7.2)
 Requirement already satisfied: setuptools in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas) (57.4.0)
 Requirement already satisfied: attrs>=17 in /usr/local/lib/python3.7/dist-packages (from fiona>=1.8->geopandas) (21.4.0)
 Requirement already satisfied: numpy>=1.15.4 in /usr/local/lib/python3.7/dist-packages (from pandas>=0.25.0->geopandas) (1.19.5)
 Requirement already satisfied: pytz>=2017.2 in /usr/local/lib/python3.7/dist-packages (from pandas>=0.25.0->geopandas) (2018.9)
 Requirement already satisfied: python-dateutil>=2.7.3 in /usr/local/lib/python3.7/dist-packages (from pandas>=0.25.0->geopandas) (2.8.2)

Libraries

```
In [3]: import numpy as np
import pandas as pd
from keplergl import KeplerGl
import matplotlib
import json
import geopandas as gpd
import matplotlib.pyplot as plt
```

```
In [4]: from google.colab import output
output.enable_custom_widget_manager()
```

```
In [5]: from google.colab import drive
drive.mount('/content/drive')
```

Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remount=True).

```
In [6]: df_waarneming = pd.read_csv('/content/drive/MyDrive/Project/Data/waarneming.csv', nrows=199000)
```

```
In [7]: df_waarneming.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 199000 entries, 0 to 198999
Data columns (total 13 columns):
#   Column                                Non-Null Count  Dtype
---  ---                                -
0   observation_id                        199000 non-null int64
1   species_id                           199000 non-null int64
2   species_name_scientific              199000 non-null object
3   species_name_en                      181386 non-null object
4   species_group_id                     199000 non-null int64
5   species_group_name_en                199000 non-null object
6   observation_date                     199000 non-null object
7   lng                                  199000 non-null float64
8   lat                                  199000 non-null float64
9   observer_user_id                     199000 non-null int64
10  woonplaats                           199000 non-null object
```



```

9   observer_user_id      199000 non-null int64
10  woonplaats            199000 non-null object
11  gemeente              198988 non-null object
12  provincie             199000 non-null object
13  observations_made      199000 non-null int64
14  different cities visited 199000 non-null int64
15  different species observed 199000 non-null int64
16  species observed in different cities 199000 non-null int64
17  Timestamp             199000 non-null int64
dtypes: datetime64[ns](1), float64(2), int64(9), object(6)
memory usage: 28.8+ MB

```

```
In [20]: df_final['species_name_en'] = df_final['species_name_en'].fillna('Unknown')
```

```
In [21]: del df_final['species_id']
del df_final['species_group_id']
del df_final['observer_user_id']
```

When done adjusting the visual run the wl2.config and copy the result below

```
In [22]: config = {'config': {'mapState': {'bearing': 0,
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'pitch': 0,
'zoom': 6.603411644221366},
'mapStyle': {'mapStyles': {}},
'styleType': 'dark',
'threeDBuildingColor': [9.665468314072013,
17.18305478057247,
31.1442867897876],
'topLayerGroups': {},
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'border': False,
'building': True,
'label': True,
'land': True,
'road': True,
'water': True}},
'visState': {'animationConfig': {'currentTime': None, 'speed': 1},
'filters': [{'animationWindow': 'free',
'dataId': ['Waarnemingen'],
'enlarged': False,
'id': 'r2qpw0v',
'name': ['Timestamp'],
'plotType': 'histogram',
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'type': 'timeRange',
'value': [1293840000000, 1334016000000],
'yAxis': None},
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'enlarged': False,
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'name': ['observations_made'],
'plotType': 'histogram',
'speed': 1,
'type': 'range',
'value': [1, 4475],
'yAxis': None},
{'animationWindow': 'free',
'dataId': ['Waarnemingen'],
```

```

    'enlarged': False,
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    'type': 'range',
    'value': [1, 512],
    'yAxis': None},
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    'enlarged': False,
    'id': 'p4s6rwwsa',
    'name': ['different cities visited'],
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    'type': 'range',
    'value': [1, 142],
    'yAxis': None},
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    'name': ['species observed in different cities'],
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    'yAxis': None},
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    'dataId': ['Waarnemingen'],
    'enlarged': False,
    'id': 'w3sg7cfjp',
    'name': ['species_group_name_en'],
    'plotType': 'histogram',
    'speed': 1,
    'type': 'multiSelect',
    'value': [],
    'yAxis': None},
    {'animationWindow': 'free',
    'dataId': ['Waarnemingen'],
    'enlarged': False,
    'id': 'wijoe0kmc',
    'name': ['species_name_en'],
    'plotType': 'histogram',
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    'value': [],
    'yAxis': None}],
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    'coordinate': {'enabled': False},
    'geocoder': {'enabled': False},
    'tooltip': {'compareMode': False,
    'compareType': 'absolute',
    'enabled': True,
    'fieldsToShow': {'Waarnemingen': [{'format': None,
    'name': 'species_name_scientific'},
    {'format': None, 'name': 'species_name_en'},
    {'format': None, 'name': 'woonplaats'},
    {'format': None, 'name': 'gemeente'},
    {'format': None, 'name': 'observation_date'}]}]},
    'layerBlending': 'normal',
    'layers': [{'config': {'color': [30, 150, 190],
    'columns': {'altitude': None, 'lat': 'lat', 'lng': 'lng'},
    'dataId': 'Waarnemingen',
    'hidden': False,
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    'label': 'Data Points',
    'textLabel': [{'alignment': 'center',

```

```

    'anchor': 'start',
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    'size': 18}],
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    'colors': ['#12939A',
    '#DDB27C',
    '#88572C',
    '#FF991F',
    '#F15C17',
    '#223F9A',
    '#DA70BF',
    '#125C77',
    '#4DC19C',
    '#776E57',
    '#17B8BE',
    '#F6D18A',
    '#B7885E',
    '#FFCB99',
    '#F89570',
    '#829AE3',
    '#E79FD5',
    '#1E96BE',
    '#89DAC1',
    '#B3AD9E'],
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    'type': 'qualitative'},
    'filled': True,
    'fixedRadius': False,
    'opacity': 0.8,
    'outline': False,
    'radius': 10,
    'radiusRange': [0, 50],
    'strokeColor': None,
    'strokeColorRange': {'category': 'Uber',
    'colors': ['#5A1846',
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    '#C70039',
    '#E3611C',
    '#F1920E',
    '#FFC300'],
    'name': 'Global Warming',
    'type': 'sequential'},
    'thickness': 2}},
    'id': 'lgz0e56',
    'type': 'point',
    'visualChannels': {'colorField': {'name': 'species_group_name_en',
    'type': 'string'},
    'colorScale': 'ordinal',
    'sizeField': None,
    'sizeScale': 'linear',
    'strokeColorField': None,
    'strokeColorScale': 'quantile'}}},
    { 'config': {'color': [18, 147, 154],
    'columns': {'lat': 'lat', 'lng': 'lng'},
    'dataId': 'Waarnemingen',
    'hidden': False,
    'highlightColor': [252, 242, 26, 255],
    'isVisible': False,
    'label': 'GridView',
    'textLabel': [{ 'alignment': 'center',
    'anchor': 'start',
    'color': [255, 255, 255],
    'field': None,
    'offset': [0, 0],
    'size': 18}],
    'visConfig': {'colorAggregation': 'count unique',
    'colorRange': {'category': 'ColorBrewer',

```

```

    'colors': ['#ffffcc',
    '#d9f0a3',
    '#add8e6',
    '#78c679',
    '#31a354',
    '#006837'],
    'name': 'ColorBrewer YlGn-6',
    'type': 'sequential'},
    'coverage': 1,
    'elevationPercentile': [0, 100],
    'elevationScale': 12.4,
    'enable3d': True,
    'enableElevationZoomFactor': True,
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    'sizeAggregation': 'count',
    'sizeRange': [0, 1000],
    'worldUnitSize': 5}},
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    'sizeField': None,
    'sizeScale': 'linear'}},
{'config': {'color': [183, 136, 94],
    'columns': {'lat': 'lat', 'lng': 'lng'},
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    'hidden': False,
    'highlightColor': [252, 242, 26, 255],
    'isVisible': False,
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    'textLabel': [{'alignment': 'center',
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    'color': [255, 255, 255],
    'field': None,
    'offset': [0, 0],
    'size': 18}],
    'visConfig': {'colorRange': {'category': 'Uber',
    'colors': ['#213E9A',
    '#551EAD',
    '#C019BD',
    '#D31256',
    '#E6470A',
    '#F9E200'],
    'name': 'UberPool 6',
    'reversed': False,
    'type': 'diverging'},
    'opacity': 0.8,
    'radius': 0.2}},
'id': 'gsc001',
'type': 'heatmap',
'visualChannels': {'weightField': None, 'weightScale': 'linear'}},
{'config': {'color': [18, 147, 154],
    'columns': {'lat': 'lat', 'lng': 'lng'},
    'dataId': 'Waarnemingen',
    'hidden': False,
    'highlightColor': [252, 242, 26, 255],
    'isVisible': False,
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    'color': [255, 255, 255],
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    'offset': [0, 0],
    'size': 18}],
    'visConfig': {'clusterRadius': 31.9,
    'colorAggregation': 'count',
    'colorRange': {'category': 'ColorBrewer',

```

```

        'colors': ['#d73027',
                    '#fc8d59',
                    '#fee08b',
                    '#d9ef8b',
                    '#91cf60',
                    '#1a9850'],
        'name': 'ColorBrewer RdYlGn-6',
        'type': 'diverging'},
        'opacity': 0.47,
        'radiusRange': [5.4, 45.3]]},
        'id': '9w04x1',
        'type': 'cluster',
        'visualChannels': {'colorField': None, 'colorScale': 'quantile'}}],
        'splitMaps': []}},
        'version': 'v1'}

```

```

In [23]: w12 = KeplerGl(height=500, data={'Waarnemingen' : df_final},config=config)
w12

```

User Guide: <https://docs.kepler.gl/docs/keplergl-jupyter>

Copy result when done changing to code config variable above and below so changes are saved when exporting and you can continue from where you were last time.

```

In [27]: w12.config

```

```

Out[27]: {'config': {'mapState': {'bearing': 0,
    'dragRotate': False,
    'isSplit': False,
    'latitude': 51.98239785919556,
    'longitude': 4.64908857279011,
    'pitch': 0,
    'zoom': 7.665619767059414},
    'mapStyle': {'mapStyles': {},
    'styleType': 'dark',
    'threeDBuildingColor': [9.665468314072013,
    17.18305478057247,
    31.1442867897876],
    'topLayerGroups': {},
    'visibleLayerGroups': {'3d building': False,
    'border': False,
    'building': True,
    'label': True,
    'land': True,
    'road': True,
    'water': True}},
    'visState': {'animationConfig': {'currentTime': None, 'speed': 1},
    'filters': [{'animationWindow': 'free',
    'dataId': ['Waarnemingen'],
    'enlarged': False,
    'id': 'r2qpx0v',
    'name': ['Timestamp'],
    'plotType': 'histogram',
    'speed': 1,
    'type': 'timeRange',
    'value': [1293840000000, 1334016000000],
    'yAxis': None},
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    'dataId': ['Waarnemingen'],
    'enlarged': False,
    'id': 'fd9cqdiw',
    'name': ['observations_made'],
    'plotType': 'histogram',

```

```

'speed': 1,
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'enlarged': False,
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'name': ['different species observed'],
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'speed': 1,
'type': 'range',
'value': [1, 512],
'yAxis': None},
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'name': ['different cities visited'],
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'name': ['species observed in different cities'],
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'speed': 1,
'type': 'range',
'value': [1, 1360],
'yAxis': None},
{'animationWindow': 'free',
'dataId': ['Waarnemingen'],
'enlarged': False,
'id': 'w3sg7cfjp',
'name': ['species_group_name_en'],
'plotType': 'histogram',
'speed': 1,
'type': 'multiSelect',
'value': [],
'yAxis': None},
{'animationWindow': 'free',
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'id': 'wijoe0kmc',
'name': ['species_name_en'],
'plotType': 'histogram',
'speed': 1,
'type': 'multiSelect',
'value': [],
'yAxis': None}],
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'geocoder': {'enabled': False},
'tooltip': {'compareMode': False,
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'enabled': True,
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{'format': None, 'name': 'species_name_en'},
{'format': None, 'name': 'woonplaats'},
{'format': None, 'name': 'gemeente'},
{'format': None, 'name': 'observation_date'}]}]},
'layerBlending': 'normal',
'layers': [{'config': {'color': [30, 150, 190],
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'dataId': 'Waarnemingen',
'hidden': False,
'highlightColor': [252, 242, 26, 255],
'isVisible': True,
'label': 'Data Points',

```

```
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'#DDB27C',
'#88572C',
'#FF991F',
'#F15C17',
'#223F9A',
'#DA70BF',
'#125C77',
'#4DC19C',
'#776E57',
'#17B8BE',
'#F6D18A',
'#B7885E',
'#FFCB99',
'#F89570',
'#829AE3',
'#E79FD5',
'#1E96BE',
'#89DAC1',
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'opacity': 0.8,
'outline': False,
'radius': 10,
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'colors': ['#5A1846',
'#900C3F',
'#C70039',
'#E3611C',
'#F1920E',
'#FFC300'],
'name': 'Global Warming',
'type': 'sequential'},
'thickness': 2}},
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'type': 'point',
'visualChannels': { 'colorField': { 'name': 'species_group_name_en',
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'colorScale': 'ordinal',
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'strokeColorScale': 'quantile'}}},
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'size': 18}],
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'colorRange': { 'category': 'ColorBrewer',
'colors': ['#ffffcc',
'#d9f0a3',
'#add8e6',
'#78c679']
```

```

    '#31a354',
    '#006837'],
    'name': 'ColorBrewer YlGn-6',
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    'coverage': 1,
    'elevationPercentile': [0, 100],
    'elevationScale': 12.4,
    'enable3d': True,
    'enableElevationZoomFactor': True,
    'opacity': 0.8,
    'percentile': [0, 100],
    'sizeAggregation': 'count',
    'sizeRange': [0, 1000],
    'worldUnitSize': 5}},
'id': 'hhe5hg',
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    'sizeField': None,
    'sizeScale': 'linear'}},
{'config': {'color': [183, 136, 94],
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    'highlightColor': [252, 242, 26, 255],
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        'offset': [0, 0],
        'size': 18}]},
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            '#C019BD',
            '#D31256',
            '#E6470A',
            '#F9E200'],
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        'reversed': False,
        'type': 'diverging'},
        'opacity': 0.8,
        'radius': 0.2}},
'id': 'gsc001',
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        'offset': [0, 0],
        'size': 18}]},
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                '#d9ef8b',
                '#91cf60',
                '#1a9850'],
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        'opacity': 0.47,

```

```

    'radiusRange': [5.4, 45.3]}},
    'id': '9w04x1',
    'type': 'cluster',
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    'splitMaps': []}},
    'version': 'v1'}

```

In [28]:

```

config = {'config': {'mapState': {'bearing': 0,
    'dragRotate': False,
    'isSplit': False,
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    'pitch': 0,
    'zoom': 7.665619767059414},
    'mapStyle': {'mapStyles': {},
    'styleType': 'dark',
    'threeDBuildingColor': [9.665468314072013,
    17.18305478057247,
    31.1442867897876],
    'topLayerGroups': {},
    'visibleLayerGroups': {'3d building': False,
    'border': False,
    'building': True,
    'label': True,
    'land': True,
    'road': True,
    'water': True}},
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    'filters': [{'animationWindow': 'free',
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    'enlarged': False,
    'id': 'r2qpwx0v',
    'name': ['Timestamp'],
    'plotType': 'histogram',
    'speed': 1,
    'type': 'timeRange',
    'value': [1293840000000, 1334016000000],
    'yAxis': None},
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    'dataId': ['Waarnemingen'],
    'enlarged': False,
    'id': 'fd9cqdiw',
    'name': ['observations_made'],
    'plotType': 'histogram',
    'speed': 1,
    'type': 'range',
    'value': [1, 4475],
    'yAxis': None},
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    'dataId': ['Waarnemingen'],
    'enlarged': False,
    'id': '2rfh3paha',
    'name': ['different species observed'],
    'plotType': 'histogram',
    'speed': 1,
    'type': 'range',
    'value': [1, 512],
    'yAxis': None},
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    'dataId': ['Waarnemingen'],
    'enlarged': False,
    'id': 'p4s6rwwsa',
    'name': ['different cities visited'],
    'plotType': 'histogram',
    'speed': 1,
    'type': 'range',
    'value': [1, 142],
    'yAxis': None},
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```

```

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'yAxis': None},
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'type': 'multiSelect',
'value': [],
'yAxis': None}],
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'geocoder': {'enabled': False},
'tooltip': {'compareMode': False,
'compareType': 'absolute',
'enabled': True,
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{'format': None, 'name': 'species_name_en'},
{'format': None, 'name': 'woonplaats'},
{'format': None, 'name': 'gemeente'},
{'format': None, 'name': 'observation_date'}]}]}},
'layerBlending': 'normal',
'layers': [{'config': {'color': [30, 150, 190],
'columns': {'altitude': None, 'lat': 'lat', 'lng': 'lng'},
'dataId': 'Waarnemingen',
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'field': None,
'offset': [0, 0],
'size': 18}]},
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'#88572C',
'#FF991F',
'#F15C17',
'#223F9A',
'#DA70BF',
'#125C77',
'#4DC19C',
'#776E57',
'#17B8BE',
'#F6D18A',
'#B7885E',

```

```

        '#FCB99',
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        '#829AE3',
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        '#89DAC1',
        '#B3AD9E'],
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    'filled': True,
    'fixedRadius': False,
    'opacity': 0.8,
    'outline': False,
    'radius': 10,
    'radiusRange': [0, 50],
    'strokeColor': None,
    'strokeColorRange': {'category': 'Uber',
    'colors': ['#5A1846',
    '#900C3F',
    '#C70039',
    '#E3611C',
    '#F1920E',
    '#FFC300'],
    'name': 'Global Warming',
    'type': 'sequential'},
    'thickness': 2}},
'id': 'lgz0e56',
'type': 'point',
'visualChannels': {'colorField': {'name': 'species_group_name_en',
    'type': 'string'},
    'colorScale': 'ordinal',
    'sizeField': None,
    'sizeScale': 'linear',
    'strokeColorField': None,
    'strokeColorScale': 'quantile'}},
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    'dataId': 'Waarnemingen',
    'hidden': False,
    'highlightColor': [252, 242, 26, 255],
    'isVisible': False,
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    'anchor': 'start',
    'color': [255, 255, 255],
    'field': None,
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    '#31a354',
    '#006837'],
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    'type': 'sequential'},
    'coverage': 1,
    'elevationPercentile': [0, 100],
    'elevationScale': 12.4,
    'enable3d': True,
    'enableElevationZoomFactor': True,
    'opacity': 0.8,
    'percentile': [0, 100],
    'sizeAggregation': 'count',
    'sizeRange': [0, 1000],
    'worldUnitSize': 5}},
'id': 'hhe5hg',

```

```

    'type': 'grid',
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    'type': 'string'},
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    'sizeScale': 'linear'}}},
    {'config': {'color': [183, 136, 94],
    'columns': {'lat': 'lat', 'lng': 'lng'},
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    'hidden': False,
    'highlightColor': [252, 242, 26, 255],
    'isVisible': False,
    'label': 'Heatmap',
    'textLabel': [{'alignment': 'center',
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    'color': [255, 255, 255],
    'field': None,
    'offset': [0, 0],
    'size': 18}]},
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    '#551EAD',
    '#C019BD',
    '#D31256',
    '#E6470A',
    '#F9E200'],
    'name': 'UberPool 6',
    'reversed': False,
    'type': 'diverging'},
    'opacity': 0.8,
    'radius': 0.2}}},
    'id': 'gsc001',
    'type': 'heatmap',
    'visualChannels': {'weightField': None, 'weightScale': 'linear'}}},
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    'columns': {'lat': 'lat', 'lng': 'lng'},
    'dataId': 'Waarnemingen',
    'hidden': False,
    'highlightColor': [252, 242, 26, 255],
    'isVisible': False,
    'label': 'Cluster',
    'textLabel': [{'alignment': 'center',
    'anchor': 'start',
    'color': [255, 255, 255],
    'field': None,
    'offset': [0, 0],
    'size': 18}]},
    'visConfig': {'clusterRadius': 31.9,
    'colorAggregation': 'count',
    'colorRange': {'category': 'ColorBrewer',
    'colors': ['#d73027',
    '#fc8d59',
    '#fee08b',
    '#d9ef8b',
    '#91cf60',
    '#1a9850'],
    'name': 'ColorBrewer RdYlGn-6',
    'type': 'diverging'},
    'opacity': 0.47,
    'radiusRange': [5.4, 45.3]}}},
    'id': '9w04x1',
    'type': 'cluster',
    'visualChannels': {'colorField': None, 'colorScale': 'quantile'}}},
    'splitMaps': []}},
    'version': 'v1'}

```

In [30]:

```
df_final['observation_date'] = df_final['observation_date'].astype(str)
```

In [31]:

```
wl2.save_to_html(data={'Waarnemingen': df_final}, config=config, file_name='Kepler12.html')
```

Map saved to Kepler12.html!