In [4]:

```
import os

import osmium as osm
import pandas as pd
```

In [5]:

```
pd.options.display.max_columns = 120
pd.options.display.max_rows = 120

my_path = os.getcwd()
```

In [7]:

```
class OSMHandler(osm.SimpleHandler):
    def __init__(self):
        osm.SimpleHandler.__init__(self)
        self.osm_data = []

    def node(self, o):
        if o.tags.get('subway') == 'yes' and 'name:ru' in o.tags:
            for tag in o.tags:
                self.osm_data.append([o.id,
                                      o.location.lat,
                                      o.location.lon,
                                      o.tags.get("name:ru")])
```

In [8]:

```
osm_handler = OSMHandler()
osm_handler.apply_file("coord_of_metro.osm")
```

In [9]:

```
data_colnames = ['id', 'lat', 'lon', 'station_name']
df_osm = pd.DataFrame(osm_handler.osm_data, columns=data_colnames)

df_osm = df_osm.drop_duplicates()
```

In [11]:

```
df_osm = df_osm.sort_values(by="lat", ascending=False, ignore_index=True)
```

In [13]:

```
df_osm["coordinates"] = df_osm["lat"].astype(str) + ", " + df_osm["lon"].astype(s
tr)
```

In [15]:

```
df_osm.to_excel(rf"{my_path}\metro_coordinates.xlsx", index=False)
```