Министерство науки и высшего образования РФ
Федеральное государственное автономное
образовательное учреждение высшего образования
«СИБИРСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ»
Институт космических и информационных технологий

ОТЧЕТ О ПРАКТИЧЕСКОЙ РАБОТЕ

Python, как инструмент получения данных для оперативной аналитики. Колоночная СУБД.

Преподаватель _____ Полякова А.С.
дата, подпись

Студент КИ20-13Б, № з/к 031940535 _____ Панкратов М.Е.
дата, подпись

Красноярск 2023

ОСНОВНАЯ ЧАСТЬ

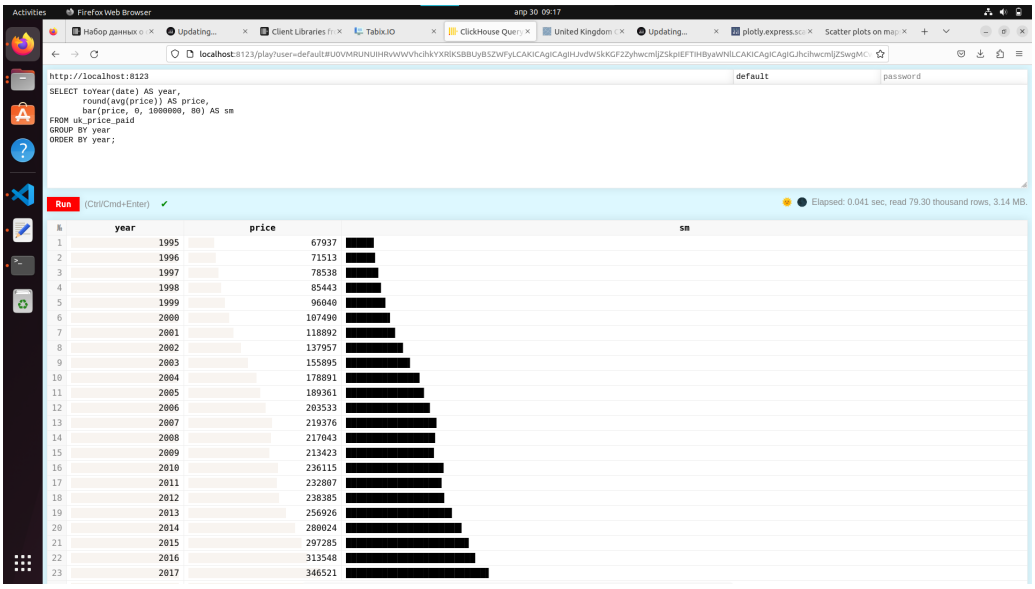

Рисунок 1.1

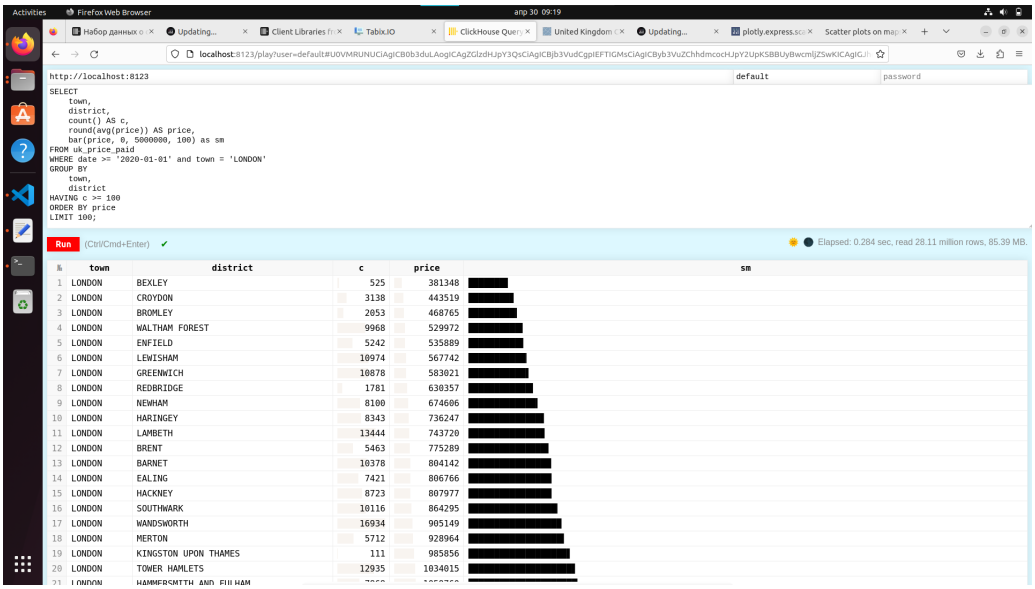

Рисунок 1.2

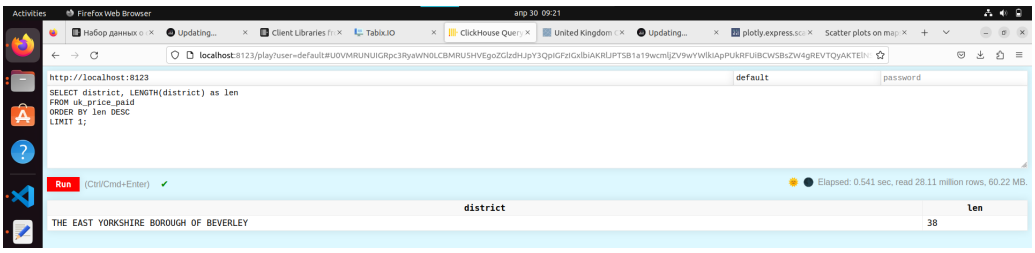

Рисунок 1.3

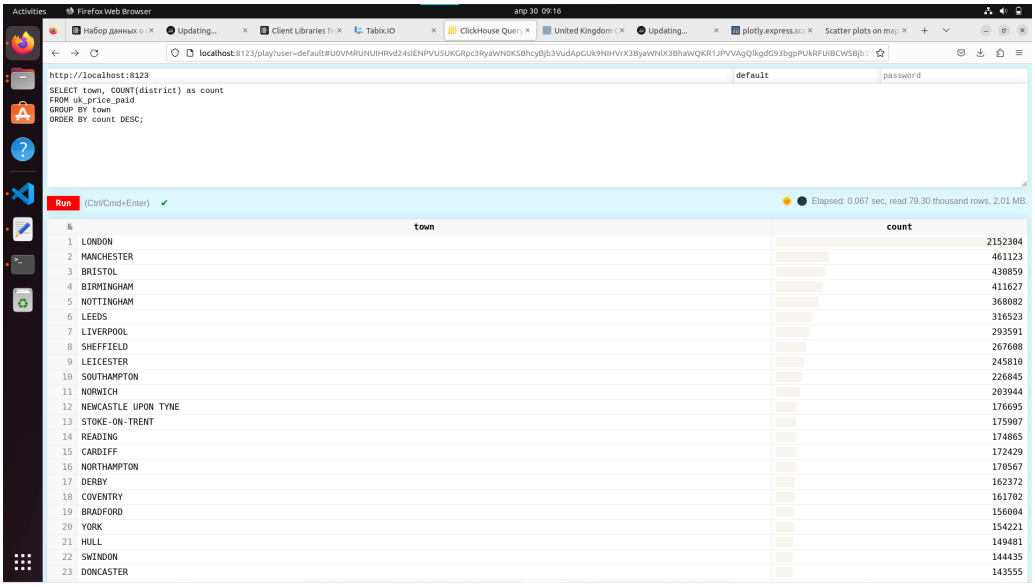

Рисунок 1.4

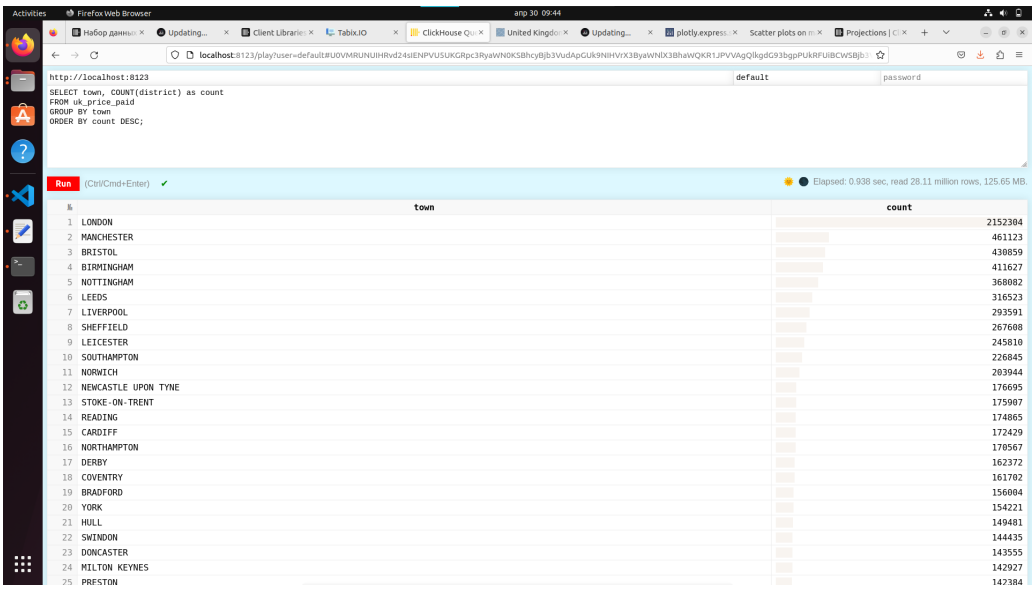

Рисунок 1.5 – Без проекции;

English is the Caiptal of Great Britain

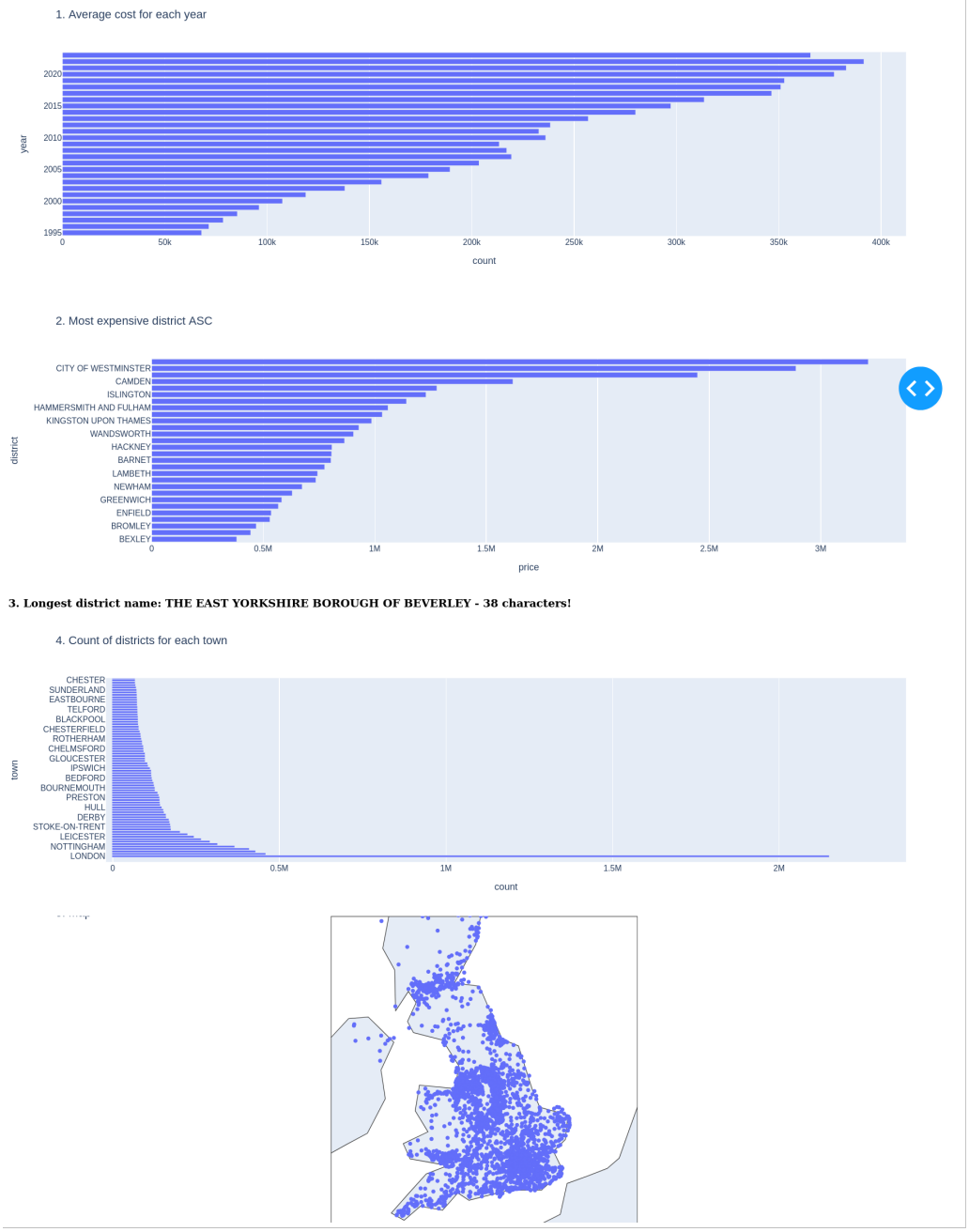

Рисунок 1.6 – Диаграммы;

```
from dash import Dash, html, dcc
import plotly.express as px
import plotly.graph_objects as go
import pandas as pd
from clickhouse_driver import Client
from queries import *
```

```
7
8     client = Client('localhost')
9
10    request1 = client.execute(query1)
11    request2 = client.execute(query2)
12    request3 = client.execute(query3)
13    request4 = client.execute(query4)
14
15    app = Dash(__name__)
16
17    dt1 = {'year':[],
18           'count':[],
19           'sm':[]
20           }
21
22    for i in request1:
23        dt1['year'].append(i[0])
24        dt1['count'].append(i[1])
25        dt1['sm'].append(i[2])
26    df = pd.DataFrame(dt1)
27
28    dt2 ={'town':[],
29          'district':[],
30          'count':[],
31          'price':[],
32          'sm':[]}
33    for i in request2:
34        dt2['town'].append(i[0])
35        dt2['district'].append(i[1])
36        dt2['count'].append(i[2])
37        dt2['price'].append(i[3])
38        dt2['sm'].append(i[4])
39    df2 = pd.DataFrame(dt2)
40    dt4 ={'town':[],
41          'count':[],}
42    for i in request4:
43        dt4['town'].append(i[0])
44        dt4['count'].append(i[1])
45    df4 = pd.DataFrame(dt4)
46
47    # print(df) ,projection='mercator'
48    fig = px.bar(df, x="count", y="year", orientation='h',
49                 title='1. Average cost for each year')
50    fig2 = px.bar(df2, x="price", y="district", orientation='h',
```

```
                  title='2. Most expensive district ASC')
    fig4 = px.bar(df4, x="count", y="town", orientation='h',
                  title='4. Count of districts for each town')
    df = pd.read_json('gb.json')
    fig5 = px.scatter_geo(df,
                          lat=df.lat,
                          lon=df.lng,
                          hover_name="city",
                          center={'lat':55,'lon':-3},
                          title='5. Map',
                          projection='mercator')
    fig5.update_layout(margin={"r":0,"t":0,"l":0,"b":0})

    app.layout = html.Div(children=[
        html.H1(children='English is the Caiptal of Great Britain'),
        html.Div(children='''

        '''),
        dcc.Graph(
            id='first-gr',
            figure=fig
        ),
        html.Div(children='''

        '''),
        dcc.Graph(
        id='second-gr',
        figure=fig2
        ),
        html.B(children=f'''
        3. Longest district name: {request3[0][0]} - {request3[0][1]} characters!
        '''),
        html.Div(children='''

        '''),
        dcc.Graph(
        id='fourth-gr',
        figure=fig4
        ),
        dcc.Graph(id="graph",
                  figure=fig5),

    ])

```

```
95      if __name__ == '__main__':
96          app.run_server(debug=True, port=12891)
```

Листинг 1.1 – Код;