Week 5 Assignment - Week 5: Cloud and API deployment

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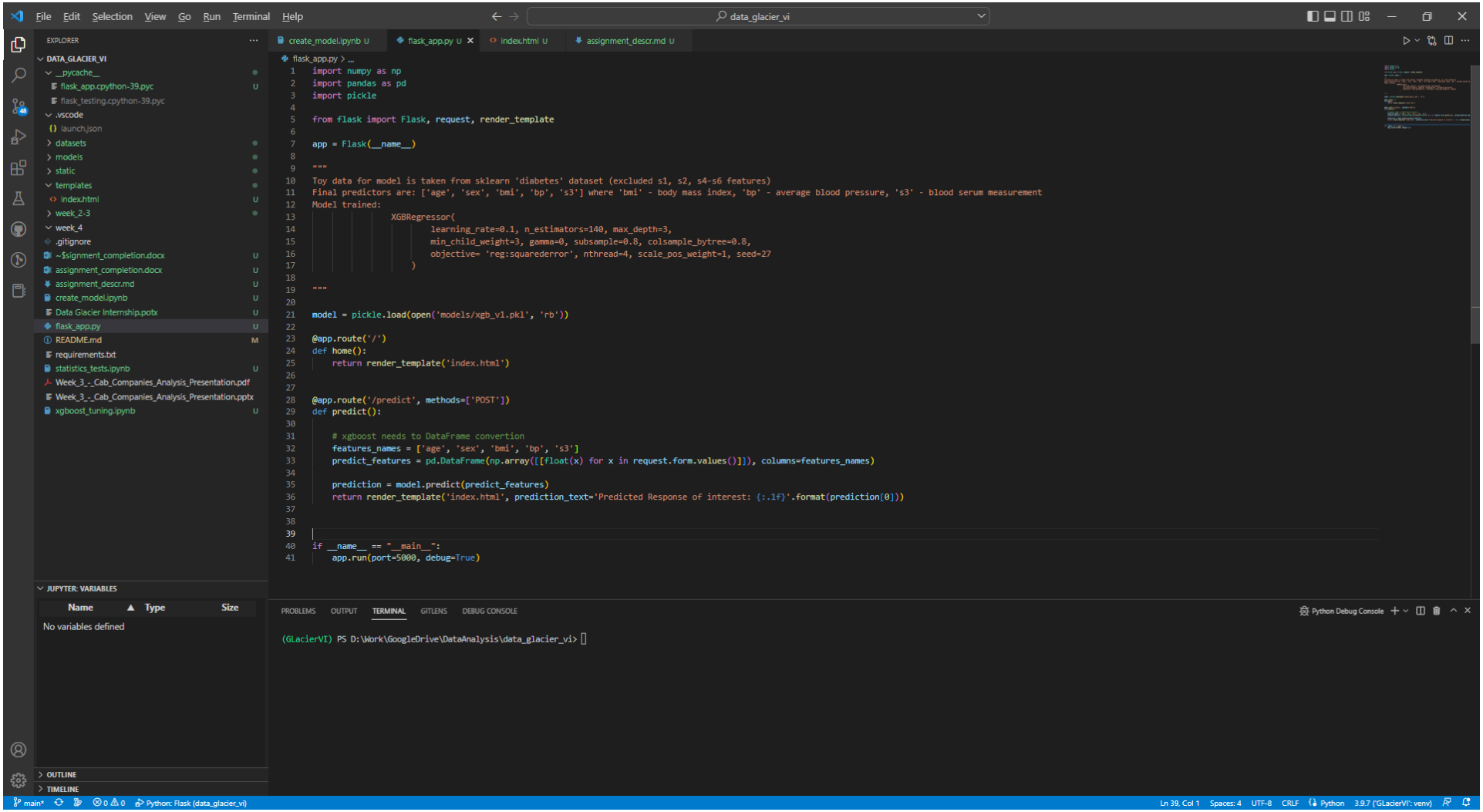
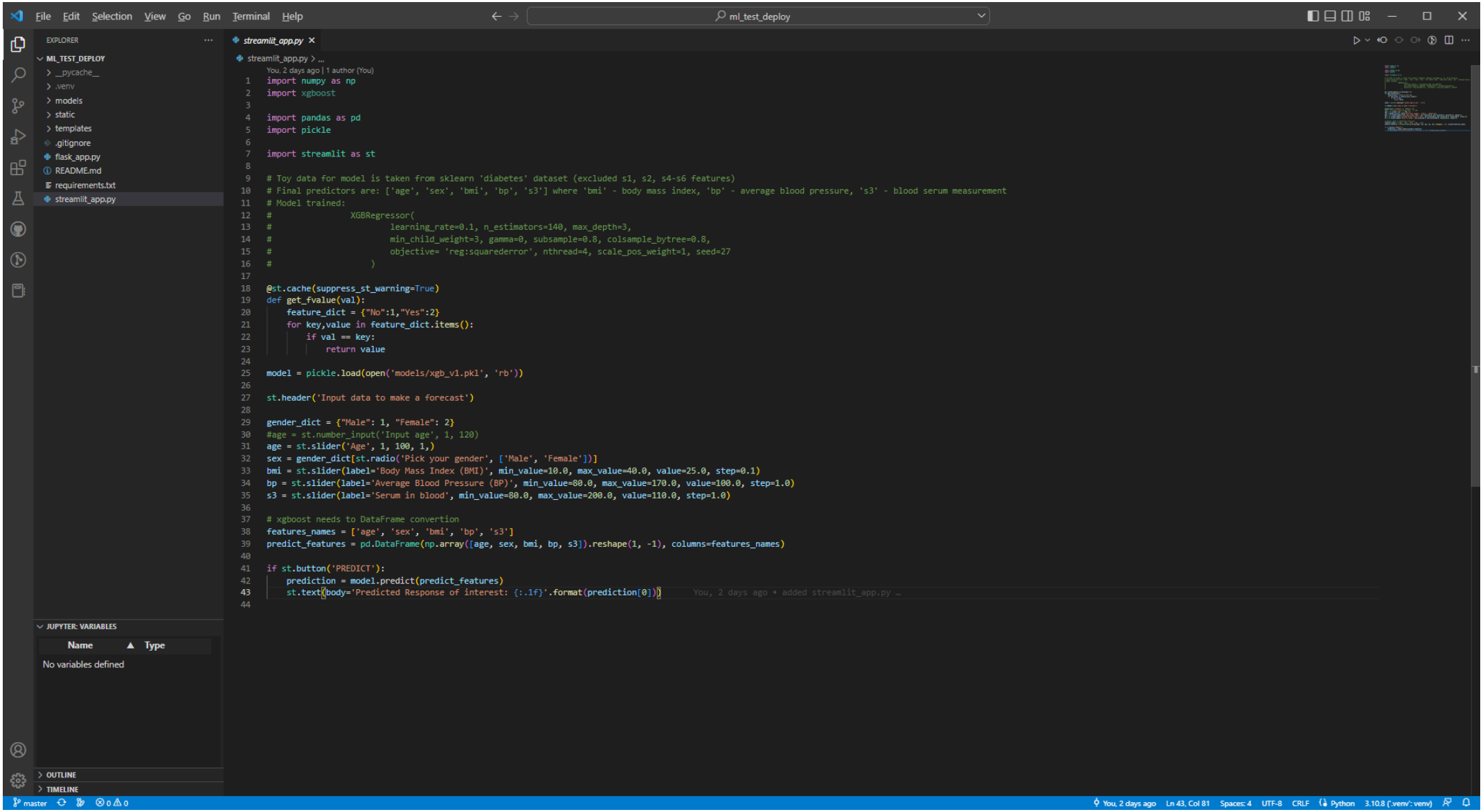
Batch code: LISUM15
Submission date: Nov 28, 2022
Submitted to: Data Glacier

1. Initial code of Flask app

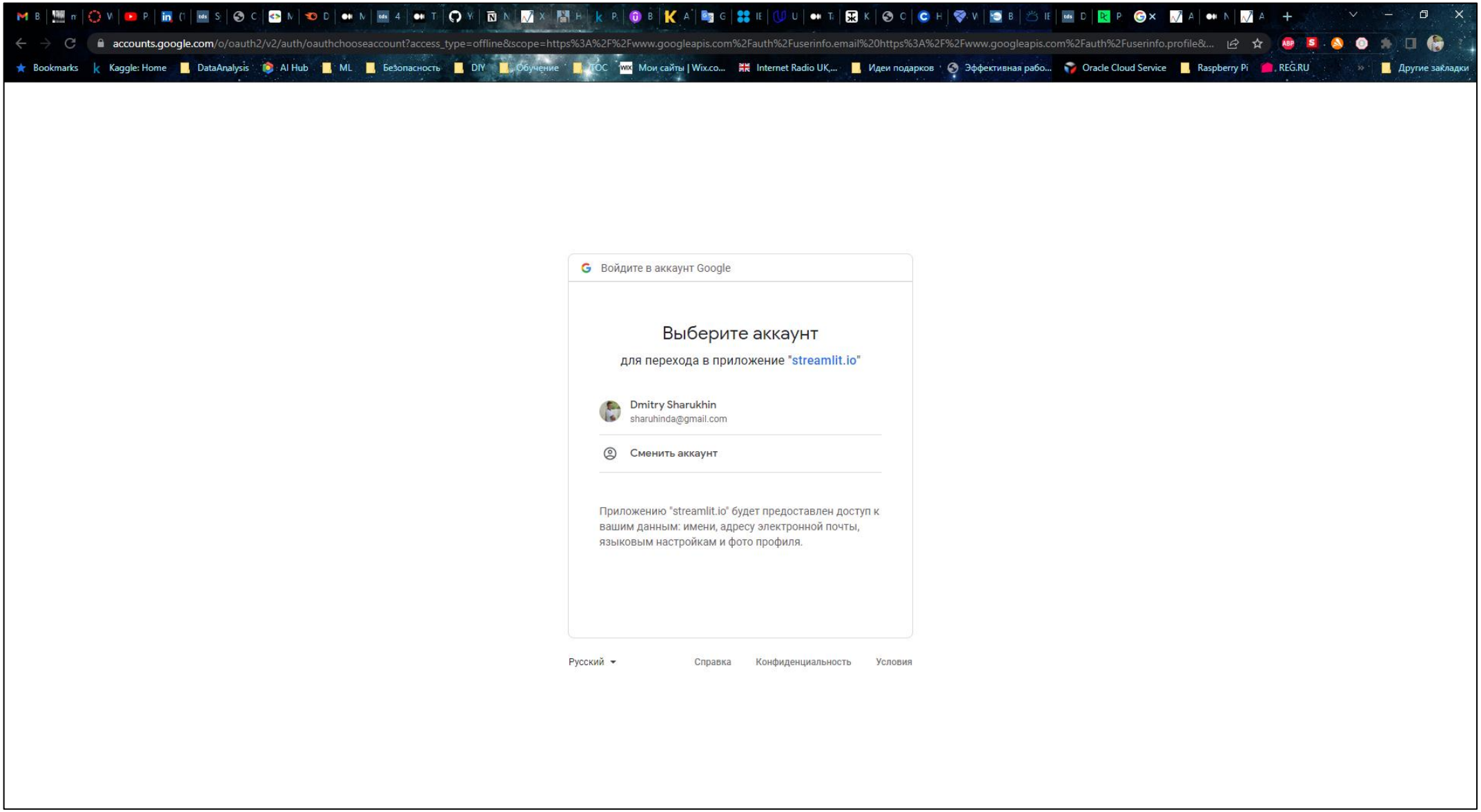


2. Changed app code to use streamlit library (necessary condition to deploy app in StreamlitCloud)

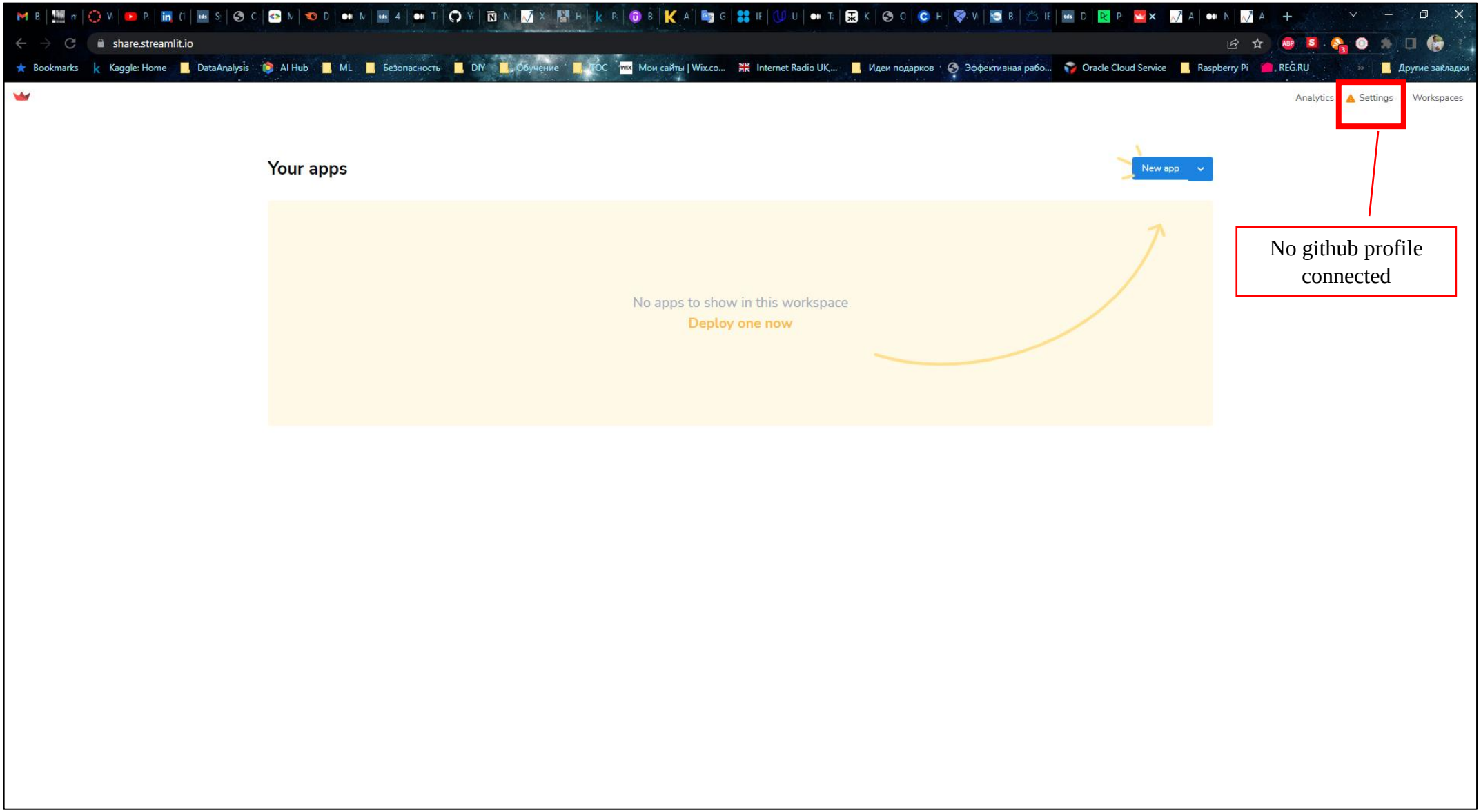


```
import numpy as np
import xgboost

import pandas as pd
import pickle

import streamlit as st

# Toy data for model is taken from sklearn 'diabetes' dataset (excluded s1, s2, s4-s6 features)
# Final predictors are: ['age', 'sex', 'bmi', 'bp', 's3'] where 'bmi' - body mass index, 'bp' - average blood pressure, 's3' - blood serum measurement
# Model trained:
#               XGBRegressor(
#                       learning_rate=0.1, n_estimators=140, max_depth=3,
#                       min_child_weight=3, gamma=0, subsample=0.8, colsample_bytree=0.8,
#                       objective= 'reg:squarederror', nthread=4, scale_pos_weight=1, seed=27
#                   )

@st.cache(suppress_st_warning=True)
def get_fvalue(val):
    feature_dict = {"No":1,"Yes":2}
    for key,value in feature_dict.items():
        if val == key:
            return value

model = pickle.load(open('models/xgb_v1.pkl', 'rb'))

st.header('Input data to make a forecast')

gender_dict = {"Male": 1, "Female": 2}
#age = st.number_input('Input age', 1, 120)
age = st.slider('Age', 1, 100, 1,)
sex = gender_dict[st.radio('Pick your gender', ['Male', 'Female'])]
bmi = st.slider(label='Body Mass Index (BMI)', min_value=10.0, max_value=40.0, value=25.0, step=0.1)
bp = st.slider(label='Average Blood Pressure (BP)', min_value=80.0, max_value=170.0, value=100.0, step=1.0)
s3 = st.slider(label='Serum in blood', min_value=80.0, max_value=200.0, value=110.0, step=1.0)

# xgboost needs to DataFrame convertion
features_names = ['age', 'sex', 'bmi', 'bp', 's3']
predict_features = pd.DataFrame(np.array([age, sex, bmi, bp, s3]).reshape(1, -1), columns=features_names)

if st.button('PREDICT'):
    prediction = model.predict(predict_features)
    st.text(body='Predicted Response of interest: {:.1f}'.format(prediction[0]))
```

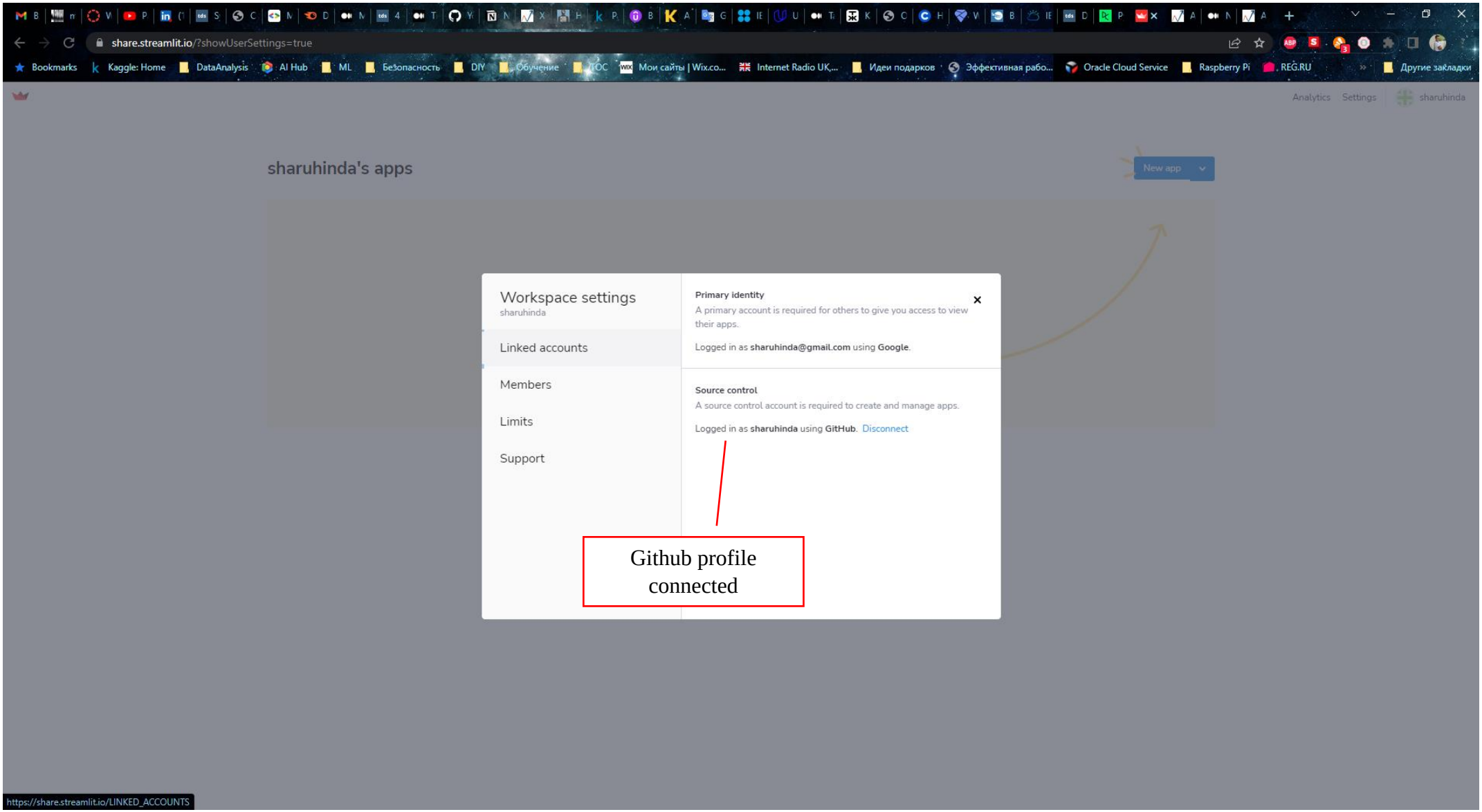
3. Login to Streamlit Cloud (https://share.streamlit.io/)



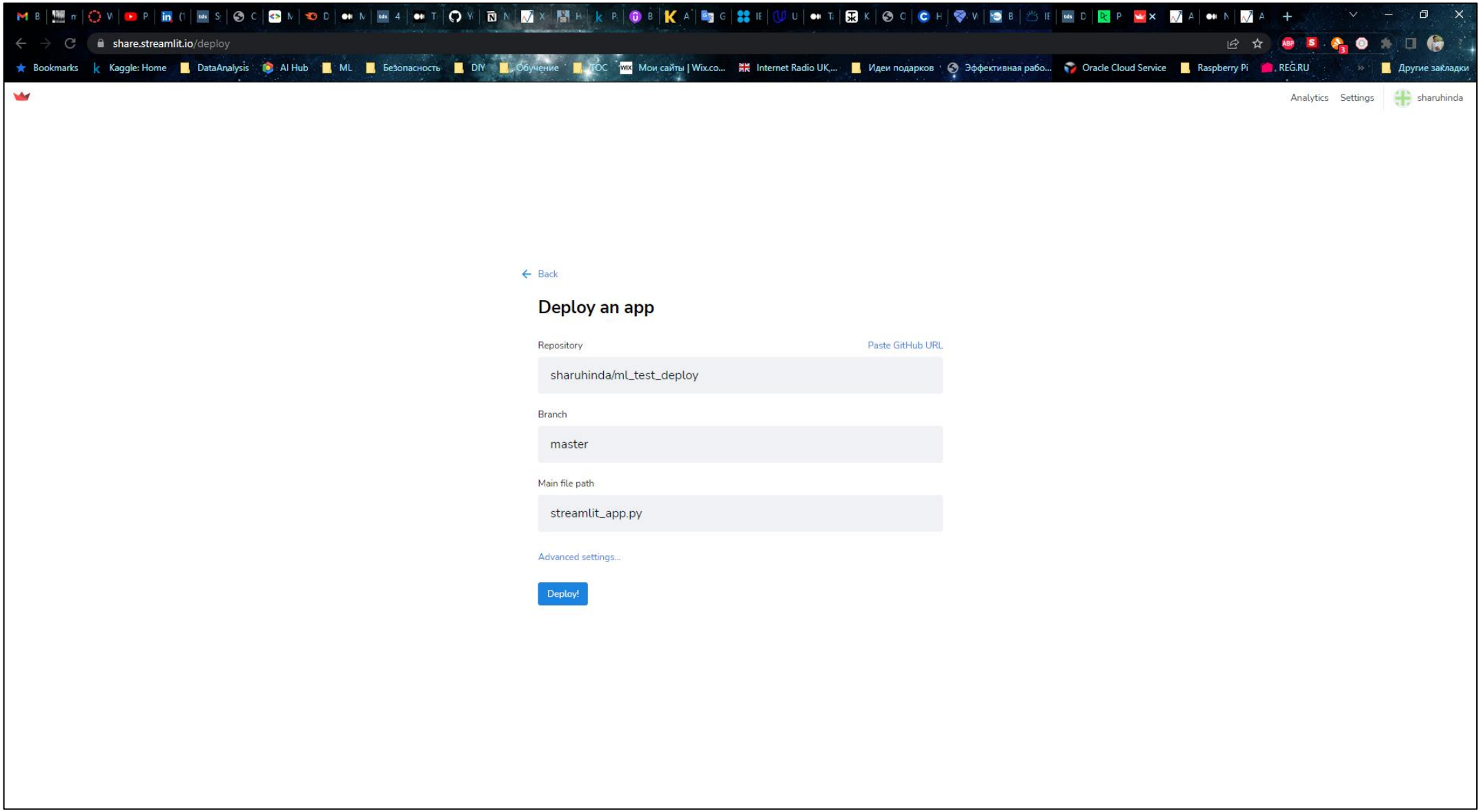
4. Cloud homepage with no apps deployed and no github connection



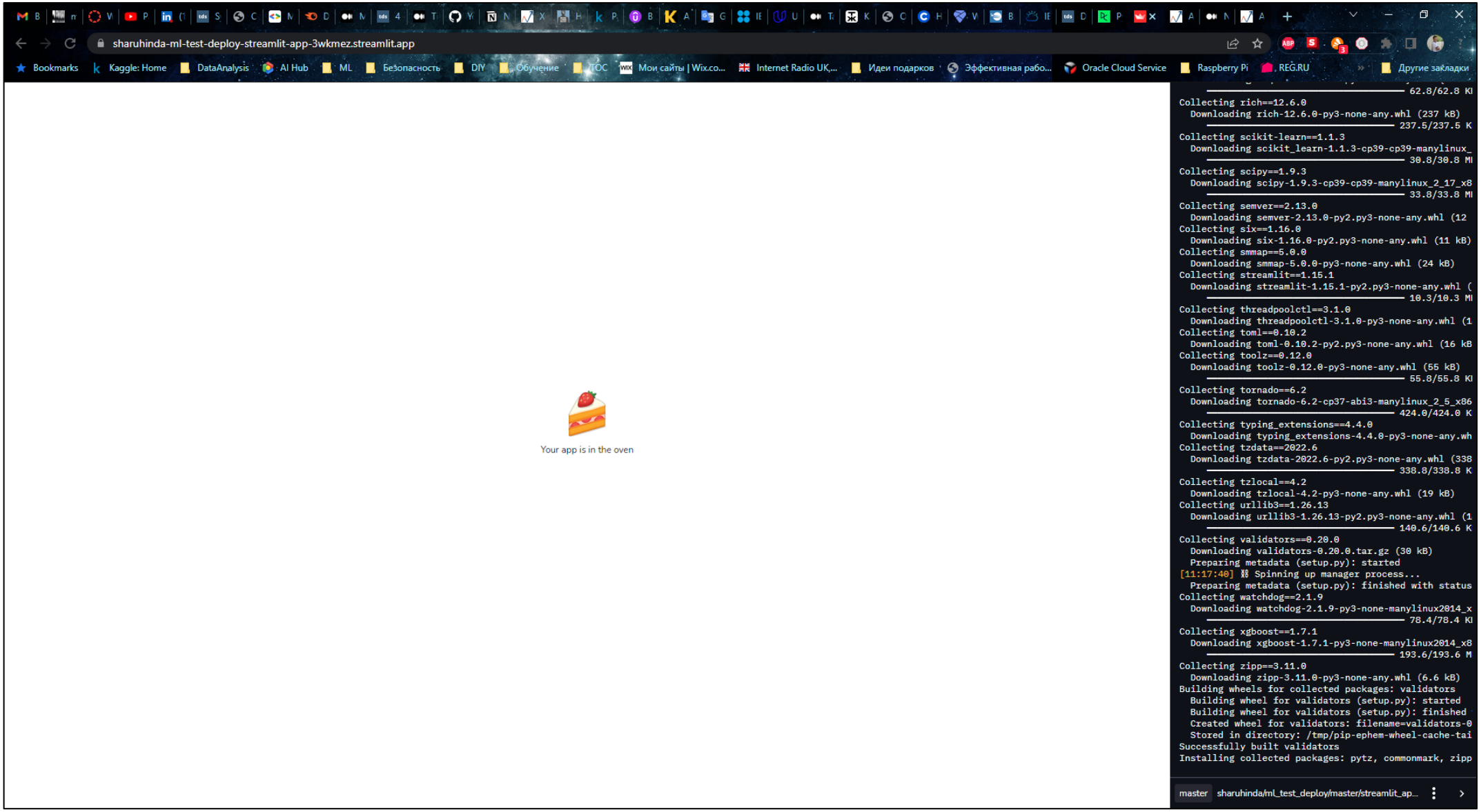
5. Connected github profile to choose repository from



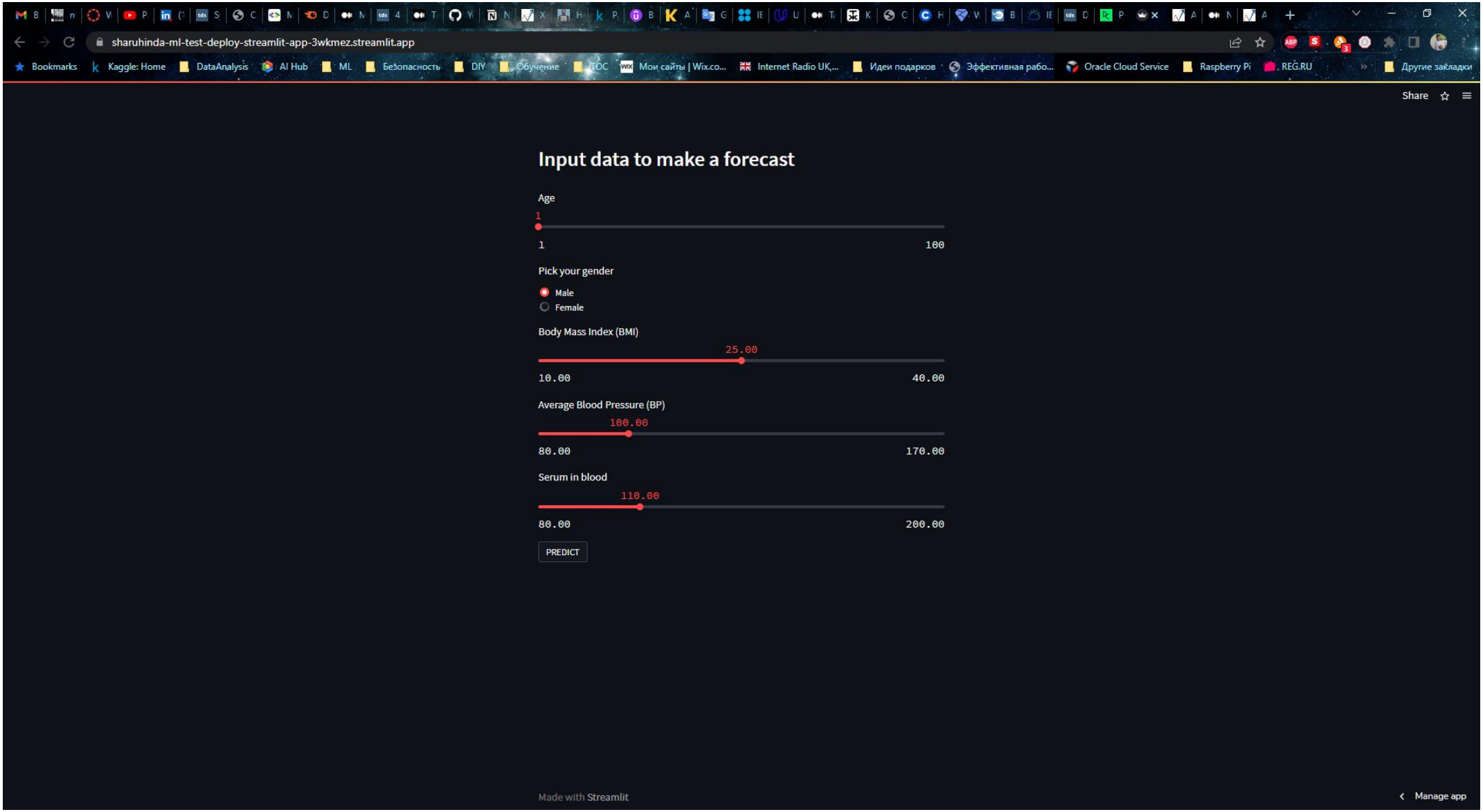
6. Choosing repository to deploy app from



7. Deployment process with log



8. App has been deployed and ready (assigned address: https://sharuhinda-ml-test-deploy-streamlit-app-3wkmez.streamlit.app/)



9. Making prediction