Handout 9

Streamlit – running python as a web app in a browser

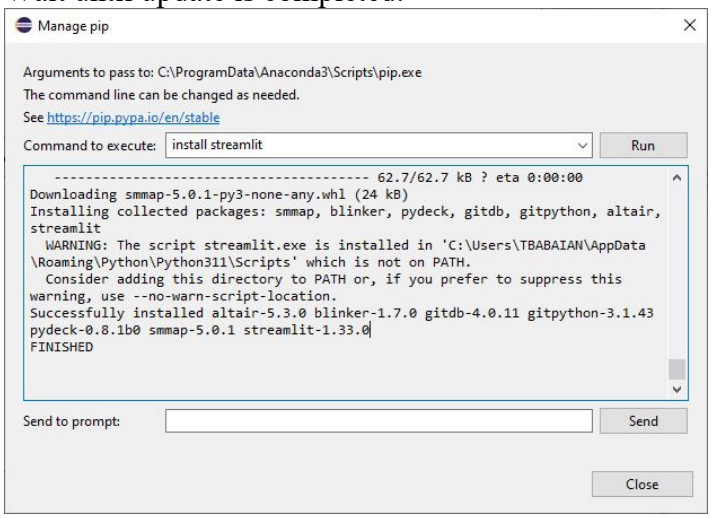
To prepare for the rest of the classes, you need to install the following python packages.

- **streamlit**
- numpy
- pandas
- matplotlib

To check if they are installed and are available, open your Eclipse Console and execute an **import** command with each of these.

Installations of packages in **Eclipse** with **PyDev**:

1. For **Windows**: Go to Window→Preferences → PyDev Python Interpreters
   For **Mac**: Go to Eclipse→ Preferences → PyDev →Interpreters → Python Interpreter
2. Click on **Manage with pip** to get to the window shown, in which type and execute install streamlit.
   Wait for the installation to run to its completion when you see `FINISHED`. Then , Close. Then Apply and Close in the parent, Python Interpreters, window.
   Wait until update is completed.



Running your Python code (someprogram.py) with Streamlit

1. in Eclipse open a Terminal window	For **Windows**: Go to Window→ Show View → Terminal For **Mac**: Go to Window→ Show View → Terminal Click on a little screen button on the top right of the Terminal tab For **Windows**: select Local Terminal

2.In Explorer/Finder,find location of streamlit executable	On **Windows**: the executable streamlit.exe is likely in C:\Users\YOURUSERNAME\AppData\Roaming\Python\Python311\Scripts\streamlit.exe On **Mac:** the executable streamlit is likely to be in anaconda3/bin/streamlit subfolder of your home folder **Record** *full-path-to-**streamlit-executable here:***
3. In Eclipse, find full path to your Project folder	Right-click on your project folder, select Properties, Location and copy the location – that is the *full-path-to-**project-folder***
4.In Terminal window, change working directory to your project folder	**cd** *full-path-to-**project-folder***
5. In Terminal window Run streamlit, using path to it you found step 2	*full-path-to-**streamlit-executable run someprogram.py*** You'll see a message in the Terminal window and you'll see the streamlit page in shown in your browser.
6. Stop streamlit execution	In the Terminal window, type Ctrl+C (for Windows) or Control+C (for Mac)
7. Run your program again	In the Terminal window, use the arrow up/down keys to find the command you already typed in step 5.

Streamlit **re-executes your python code from the beginning to the end** every time you interact with the page, or modify the code.

PRACTICE

1. Download widgets.py from the course site and set it up in a separate folder in PyCharm.
2. Run it.
3. Review the code (included below)
4. **Modify the program to include full details of the order in the bottom of the page.**
   Hint: you will need to modify the functions to return selected values, then add those returned values to the last line of the main function.

```
'''Simple example of Stremlit controls (widgets)'''
import streamlit as st
import os

def top():
    st.title("Welcome to Build A Pizza")

    st.header("Build Your Pizza")
    hungry = ['not very','somewhat', 'kind of', 'very', 'super']
    st.write("How Hungry are You? ")
    x = st.slider('Hungry Index',0.0,4.0,1.0)
    st.write('You are ', hungry[round(x)], 'hungry!')
    st.write(x)
```

```
    st.subheader("Pizza Options")
    sizes = ['small','medium','large','extra large']
    size = st.radio("Select a size: ", sizes)
    return size

def deliveryOptions():
    st.subheader("Delivery")
    # Add a selectbox :
    delivery = st.selectbox(
        'Delivery Option: ',
        ('Eat-In', 'Curb-Side', 'Delivery')
    )

    st.write("This order is for ", delivery)

def checkboxes():
    mushrooms = st.checkbox("Mushrooms", False)
    cheese = st.checkbox("Extra Cheese", True)
    return mushrooms, cheese

def bottom():
    st.subheader("Meats")
    meats = ['Sausage','Meatball','Hamburger','Chicken']
    meat_toppings = st.multiselect("Select toppings:", meats)
    st.write("We will add: ", meat_toppings)

    st.subheader("Soda")
    soda = st.number_input("How many bottles of soda: ",0,99,1)

def main():
    size =  top()
    deliveryOptions()
    withmush, withcheese = checkboxes()
    bottom()
    your_name = st.text_input("Name: ", "Mark")
    st.write("Thanks,", your_name, " for your order of", size, "pizza")

main()
```