

LAB MANUAL

Development and Data Visualization using Streamlit



App Page Configuration and Creation

1. Objective

- To understand the concept of configuring a multi-page Streamlit application using `st.set_page_config()`.
- To develop a modular Streamlit application with separate pages for different functionalities such as Home, Student Information, and Subject Enrollment.
- To learn how to customize the layout, title, and icon of a Streamlit application using configuration settings.

2. Equipment Required

- Computer system with Windows/Linux/macOS operating system
- Python (version 3.9 or above) installed
- Streamlit library installed in the Python environment
- Code editor (e.g., Visual Studio Code, Jupyter Notebook, or Notepad++)
- Internet connection (for installing dependencies or optional GitHub hosting)

3. Prerequisites

- Basic understanding of Python programming
- Familiarity with the installation and usage of the Streamlit library
- Knowledge of Python script file organization and file naming conventions
- Understanding of input/output operations in Streamlit

4. Problem Statement

Develop a multi-page Streamlit application for a school dashboard. The application should consist of the following pages:

- A Home Page that welcomes the user
- A Student Info Page that displays information about students
- A Subject Enrollment Page that allows students to select their subjects

Additionally, configure the application using `st.set_page_config()` to set a custom title, layout (wide or centered), and icon.

5. Procedure

1. Create a new project folder with a suitable name (e.g., `School_Dashboard`).
2. Create three Python files within the folder, each representing a separate page of the application.
3. Add appropriate content and functionality to each page.
4. Use `st.set_page_config()` to configure the application in the main page file.
5. Run the application using the Streamlit CLI and verify navigation through the sidebar.
6. Test the interactivity and layout of the application.

6. Setting up the Environment

1. Install the Streamlit library by executing the following command in the terminal:

pip install streamlit

2. Create a folder named School_Dashboard.
3. Inside the folder, create the following files:

```
School_Dashboard/  
├── Home.py  
├── Student_Info.py  
└── Student_Enrollment.py
```

Note: Streamlit automatically selects the first file alphabetically as the default landing page.

7. Steps:

Step 1: Create the Home Page (Home.py)

```
import streamlit as st  
st.set_page_config(page_title="School Dashboard", page_icon="icon.png",  
layout="wide")  
st.title("Welcome to the School Dashboard")  
st.write("Use the sidebar to navigate to different sections of the application.")
```

Step 2: Create the Student Info Page (Student_Info.py)

```
import streamlit as st  
st.title("Student Information")  
st.write("This section allows you to view student profiles and their academic  
details.")
```

Step 3: Create the Subject Enrollment Page (Student_Enrollment.py)

```
import streamlit as st  
st.title("Subject Enrollment")  
subjects = st.multiselect("Select your subjects", ["Mathematics", "Physics",  
"Economics", "History"])  
st.write("Enrolled subjects:", subjects)
```

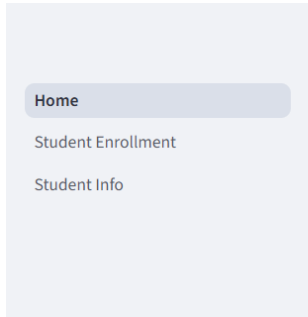
Step 4: Run the Application

Navigate to the project folder in the terminal and run the following command:

python -m streamlit run Home.py

Once the application launches in the browser, the sidebar will display navigation options to switch between the three pages.

Output



Welcome to the School Dashboard

Use the sidebar to navigate to different sections of the application.