Pygal Practice Problems – 5 Projects

High School Python Data Visualization Exercises

Introduction

This handout contains 5 Pygal practice problems designed for high school students. Each problem provides a dataset and tasks to create at least three interactive charts using Pygal. Students are expected to analyze the data, visualize it appropriately, and write short insights.

Problem 1 – Weekly Screen Time

Day   Student A   Student B   ------ ----------- -----------   Mon 2 1   Tue 3 2   Wed 2 1   Thu 4 3   Fri 3 2   Sat 5 4   Sun 4 3
- Line Chart → weekly trend for both students
- Bar Chart → compare total weekly hours
- Pie Chart → proportion of time spent by each student

Problem 2 – Favorite Subjects Survey

Subject Boys Girls   ---------- ------ -------   Math 8 7   Science 6 9   English 7 8   History 5 6
- Bar Chart → compare boys vs girls
- Horizontal Bar → subjects ranked by total students
- Pie Chart → distribution of favorite subjects overall

Problem 3 – Daily Activities

Activity Hours   ---------- -------   Sleep 8   Study 6   Play 3   Sports 2   Other 5
- Pie Chart → show proportion of each activity
- Donut Chart → same data with inner radius
- Radar Chart → compare activities with a second student (generate random second row)

Problem 4 – Student Skills Comparison

Student   Math   Science   English   Art   Sports   --------- ------ --------- --------- ----- --------   Alice 90 80 85 70 75   Bob 70 60 75 85 90
- Radar Chart → compare Alice vs Bob
- Line Chart → trend across subjects
- Bar Chart → individual student scores

Problem 5 – Country Population

Country Population (millions) --------- --------------------- China 1400 India 1380 USA 331 Indonesia 273 Pakistan 220

- Bar Chart → population of each country
- Pie Chart → population distribution proportion
- Map Chart → visualize countries on world map