

### **Tasks:**

#### Generate Synthetic Dataset on Exercise and Blood Pressure

1. Create a Python script that generates a synthetic dataset matching the description of your study. The dataset should be saved as a CSV file named "exercise\_data.csv".

#### Highest Pre-Exercise Blood Pressure by Group

2. Write a Python script to read the "exercise\_data.csv" file and print the participant with the highest pre-exercise systolic blood pressure in each exercise group.

#### Extract the 5 Participants with Highest Blood Pressure

3. Write a Python function that sorts the list based on blood pressure and displays the full record of the top 5.

#### Monthly Blood Pressure Changes

4. Write a Python script that assumes that blood pressure measurements were taken monthly. Compute and print the average change in blood pressure for each exercise group. Note: This is hypothetical as the original study is for 6 weeks only.

#### Compare Pre- and Post-Exercise Blood Pressure

5. Search for the 5 participants from the pre-exercise (Topic 4) and find their post-exercise blood pressure. Produce a table that compares their pre- and post-exercise pressure and displays the difference.

#### Total Blood Pressure Reduction for Each Exercise Group

6. Write a Python script to read the "exercise\_data.csv" file and compute the measures of central tendency for each exercise group: mean, mode, standard deviation.