Principles and Applications of Data Science
Homework #2

Due: June 15, 2022

This assignment is to practice creating a bar graph grid using the tool such as MatPlotLib with Taipei's traffic accident data from year 101 (2012) to 108 (2019). The files we provide are the data files (`xxxTraffic_accident.csv`) of eight years and a correspondence table for mapping codes to certain fields (`Traffic_accident_chart.csv`). In the data file, there are fifteen attributes, including *Year*, *Month*, *Day*, *Hour*, *Minute*, *Processing_class*, *death_toll*, *Injuries_Person*, *Vehicle_type*, *Sex*, *Age*, *Weather*, *Speed_limit*, *Road_pattern*, *Accident_location*. With the data files and table, your homework should be done according to the following **requirements**:

- There are six main topics to be shown in each year:

  1. Number of traffic accident death_toll per month
  2. Number of traffic accident injuries per month
  3. Number of traffic accident injuries per vehicle_type (take the top 10)
  4. Number of traffic accident injuries per weather
  5. Number of traffic accident injuries per road_pattern (take the top 10)
  6. Number of traffic accident injuries per accident_location (take the top 10)

- Each topic will be presented by a bar chart.

- For each year, use bar graph grid to show the six topics. Thus, there will be eight grids for years and each grid has six bar charts for each topic.

- On the other hand, please produce the grids for the six topics respectively. Each grid will have eight bar charts for the eight years.

- Please do not forget, in each chart, to have the topic on the top and label the x-axis and y-axis.

About submitting this homework

- Please upload your homework project named as `HW2-SID.ipynb` to **i-school(Plus)** (`https://istudy.ntut.edu.tw/learn/index.php`) platform .

- The **deadline** is the **midnight of June 15**, 2022 and **Late work** is not acceptable.

- Honest Policy: We encourage students to discuss their work with the peer. However, each student should write the program or the problem solutions on her/his own. Those who copy others work will get 0 on the homework grade.