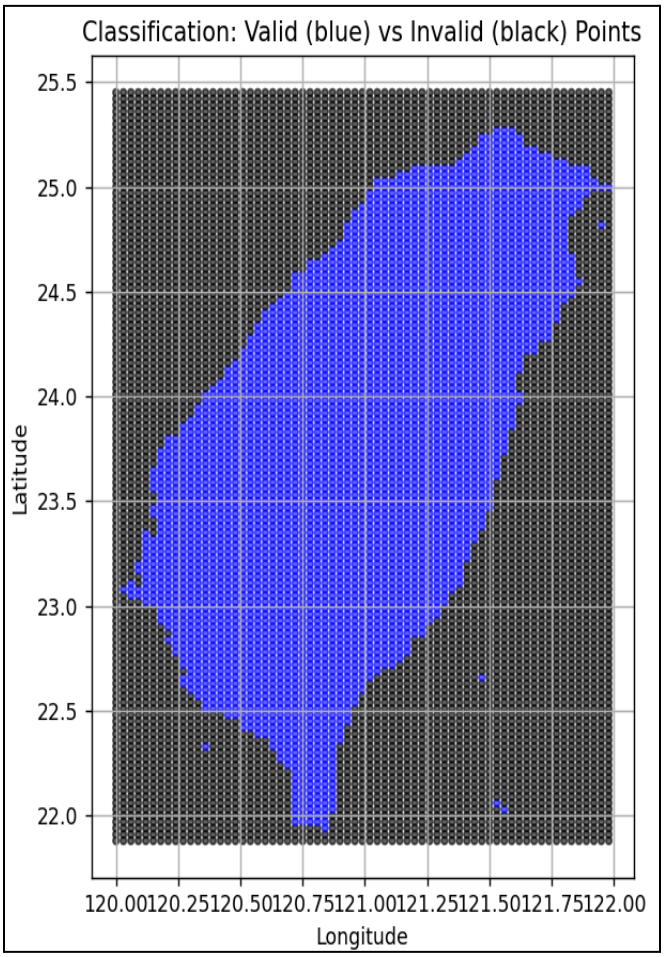
Week 4 Programming assignment

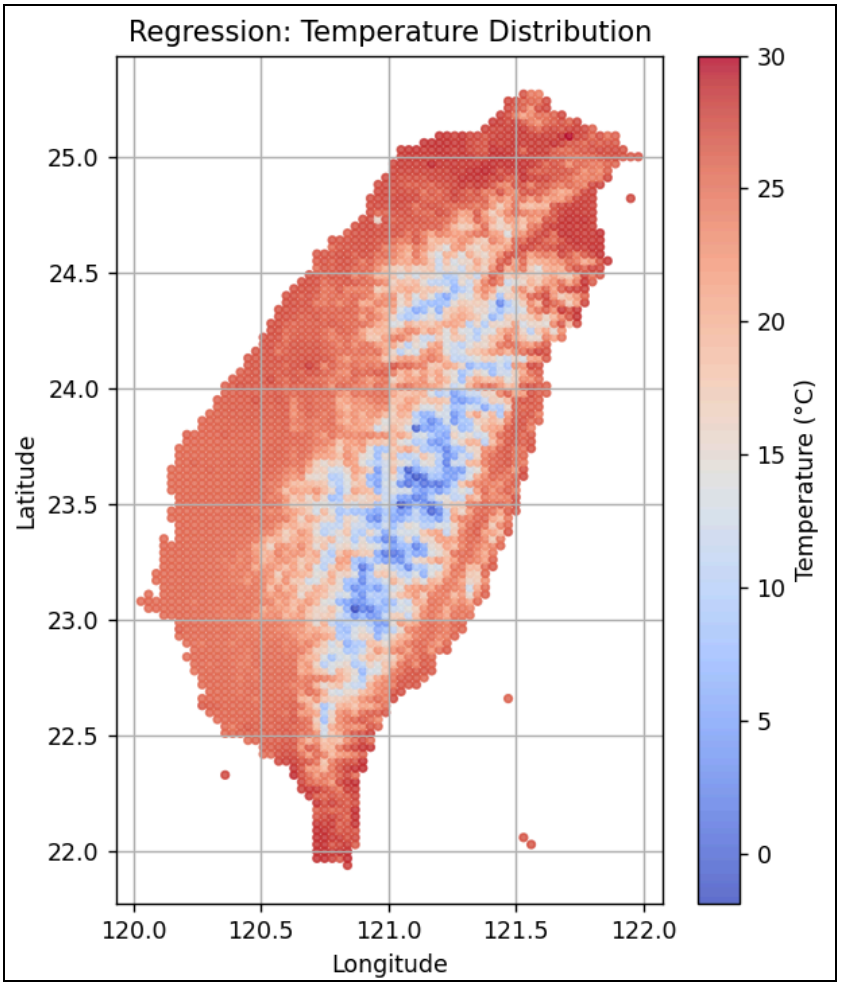
請先下載資料集: O-A0038-003.xml.
此資料為氣象資料觀測平台之"溫度分布-小時溫度觀測分析格點資料". 資料說明如下：

- 每個格點代表一個 **溫度觀測值 (°C)**。
- 資料無效值為 `-999.`。
- 經緯度解析度：經向、緯向各為 **0.03 度**。
- 左下角第一個格點座標為：
  - 東經 **120.00 度**
  - 北緯 **21.88 度**
- 經向方向先遞增 (一列有 67 個數值)，再緯向方向遞增 (總共有 120 列)，因此資料形成一個 **67 × 120 的數值網格**。

- Data

  Using the dataset from open weather data for supervised learning.
  - Classification
    - Separate the data into groups of valid and invalid
  - Regression
    - Values where data is valid
- Model
  - The grid size of the data is 67 x 120.





- Model Training
  - Regression
    - We predict the actual temperature at a specific location, based only on its latitude and longitude.
    - The model tries to fit a flat temperature surface across the map, based on the locations and the temperatures it has seen.
    - temperature = a * longitude + b * latitude + c
  - We evaluate the performance using MSE and R^2

```
=== Classification Report ===
              precision    recall  f1-score   support

           0       0.58      0.99      0.73       929
           1       0.00      0.00      0.00       679

    accuracy                           0.57      1608
   macro avg       0.29      0.50      0.36      1608
weighted avg       0.33      0.57      0.42      1608

=== Regression Report ===
MSE: 32.14
R²: 0.05
```