Introduction to Data Science
Supervised learning (Classification)

1. Generate a random dataset with two features (x1, x2)
    a. **(10 pt)** if you use a programming language . You can use a library like NumPy or Scikit-learn to generate the dataset.
    b. **(7 pt)** if you can use MS Excel to generate random data
2. Divide the dataset into training and test sets.
    a. **(10 pt)** if you use a programming language . You can use a library like matplotlib
    b. **(7 pt)** if you can use MS Excel to visualize the data
3. Implement the KNN classification.
    a. **(10 pt)** if you use a programming language . You can use a library like Scikit-learn
    b. **(7 pt)** if you can use MS Excel to visualize the data
4. **(10 pt)** Train the KNN classifier on the training set and determine the optimal value of k using cross-validation. You can use a library like Scikit-learn to perform cross-validation and select the optimal value of k.
5. **(10 pt)** Test the KNN classifier on the test set and evaluate its performance using any metric of your choice, such as accuracy or F1 score.