# 情報工学実験4：データマイニング班

## (補足) クラスタリング

1. 問題設定例（クラスタリング）
2. 同一データセットでも手法により結果が異なる例（scikit-learn）
3. クラスタリングにおける「似ているもの同士を同一クラスタにする」問題

実験ページ: http://ie.u-ryukyu.ac.jp/~tnal/2014/info4/dm/

# Example: *Iris* flower data set WITHOUT classes

http://en.wikipedia.org/wiki/Iris_flower_data_set

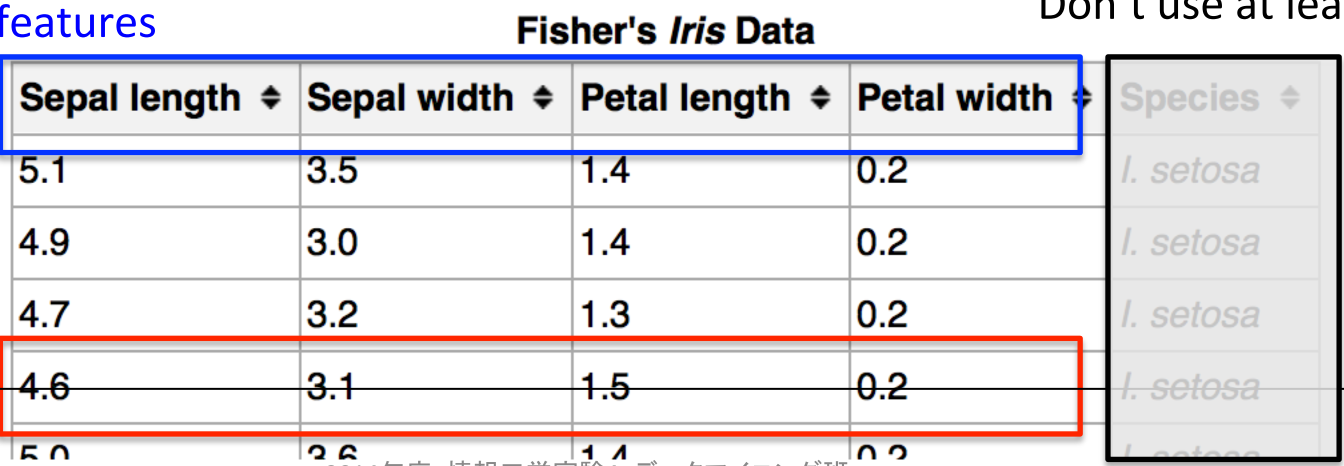
(1) What is experience E?
(2) What is task T?
(3) How to measure the performance P?

- Clustering
  - is the task of grouping a set of objects in such a way that objects in the same group (called a **cluster**) are more similar (in some sense or another) to each other than to those in other groups (clusters).
  - training data consists of a set of input vectors x **without any corresponding target values**.
  - Dataset = samples vs. features

4 features

Don't use at learning

1 sample

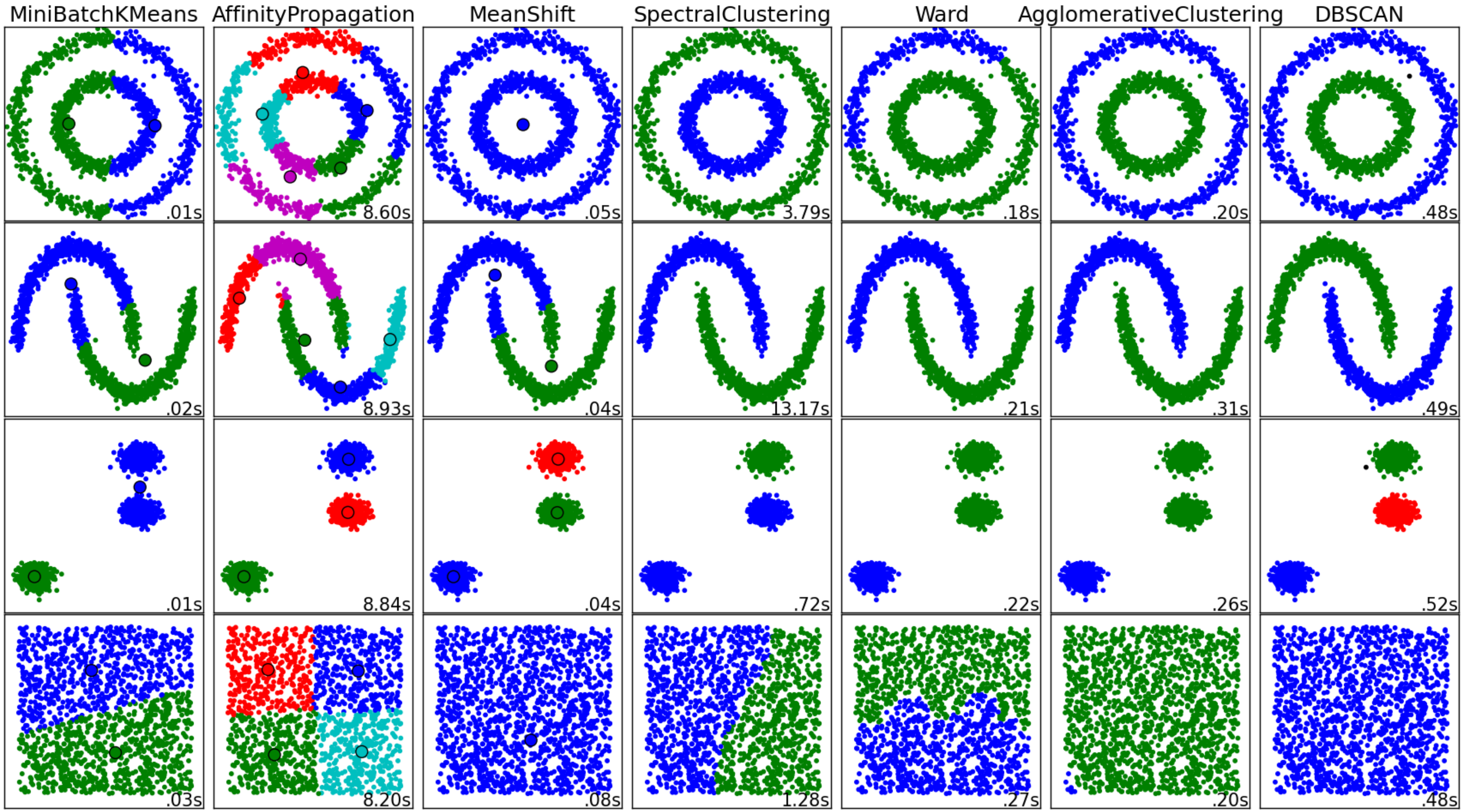


**Fisher's *Iris* Data**

| Sepal length ⬍ | Sepal width ⬍ | Petal length ⬍ | Petal width ⬍ | Species ⬍ |
|---|---|---|---|---|
| 5.1 | 3.5 | 1.4 | 0.2 | *I. setosa* |
| 4.9 | 3.0 | 1.4 | 0.2 | *I. setosa* |
| 4.7 | 3.2 | 1.3 | 0.2 | *I. setosa* |
| 4.6 | 3.1 | 1.5 | 0.2 | *I. setosa* |
| 5.0 | 3.6 | 1.4 | 0.2 | *I. setosa* |

# (scikit-learn) Overview of clustering methods

http://scikit-learn.org/stable/modules/clustering.html#clustering



# more similar? same group?