FLIP(01) mid-term Presentation

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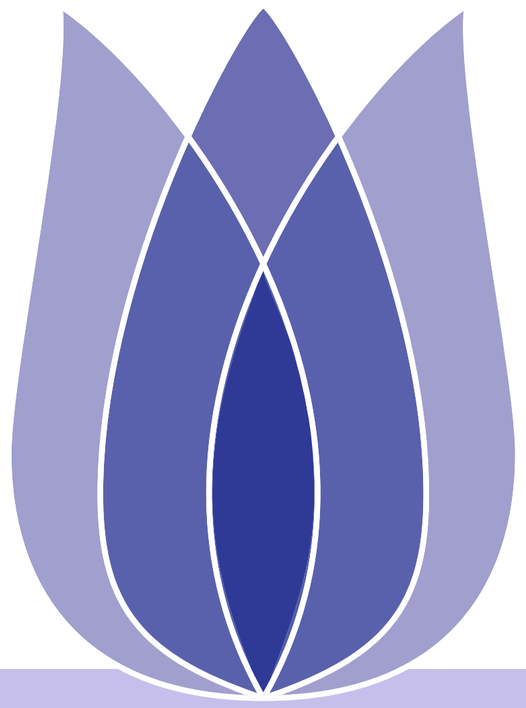

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- This is a classification problem to predict seed varieties. There are 210 samples, consistent of 7 features and 1 label. The following is some requirements.

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- This is a classification problem to predict seed varieties. There are 210 samples, consistent of 7 features and 1 label. The following is some requirements.
  - According to the given train data set, training a classified model and then using the model to predict the class of Wheat Seeds.
  - Estimated the error of the training classification model.

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- Attribute Information

1. There are 8 attributes, including 1 class attribute and 7 feature attributes.
2. The detailed description of the data is shown in the following table.

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	area	peri	compactness	glength	gwidth	Asymmetry coefficient	Graft length of the grain	label
0	14.88	14.57	0.8811	5.554	3.333	1.0180	4.956	1
1	14.29	14.09	0.9050	5.291	3.337	2.6990	4.825	1
2	13.84	13.94	0.8955	5.324	3.379	2.2590	4.805	1
3	16.14	14.99	0.9034	5.658	3.562	1.3550	5.175	1
4	14.38	14.21	0.8951	5.386	3.312	2.4620	4.956	1
5	14.69	14.49	0.8799	5.563	3.259	3.5860	5.219	1
6	14.11	14.10	0.8911	5.420	3.302	2.7000	5.000	1
7	16.63	15.46	0.8747	6.053	3.465	2.0400	5.877	1
8	16.44	15.25	0.8880	5.884	3.505	1.9690	5.533	1

Figure 1: Data

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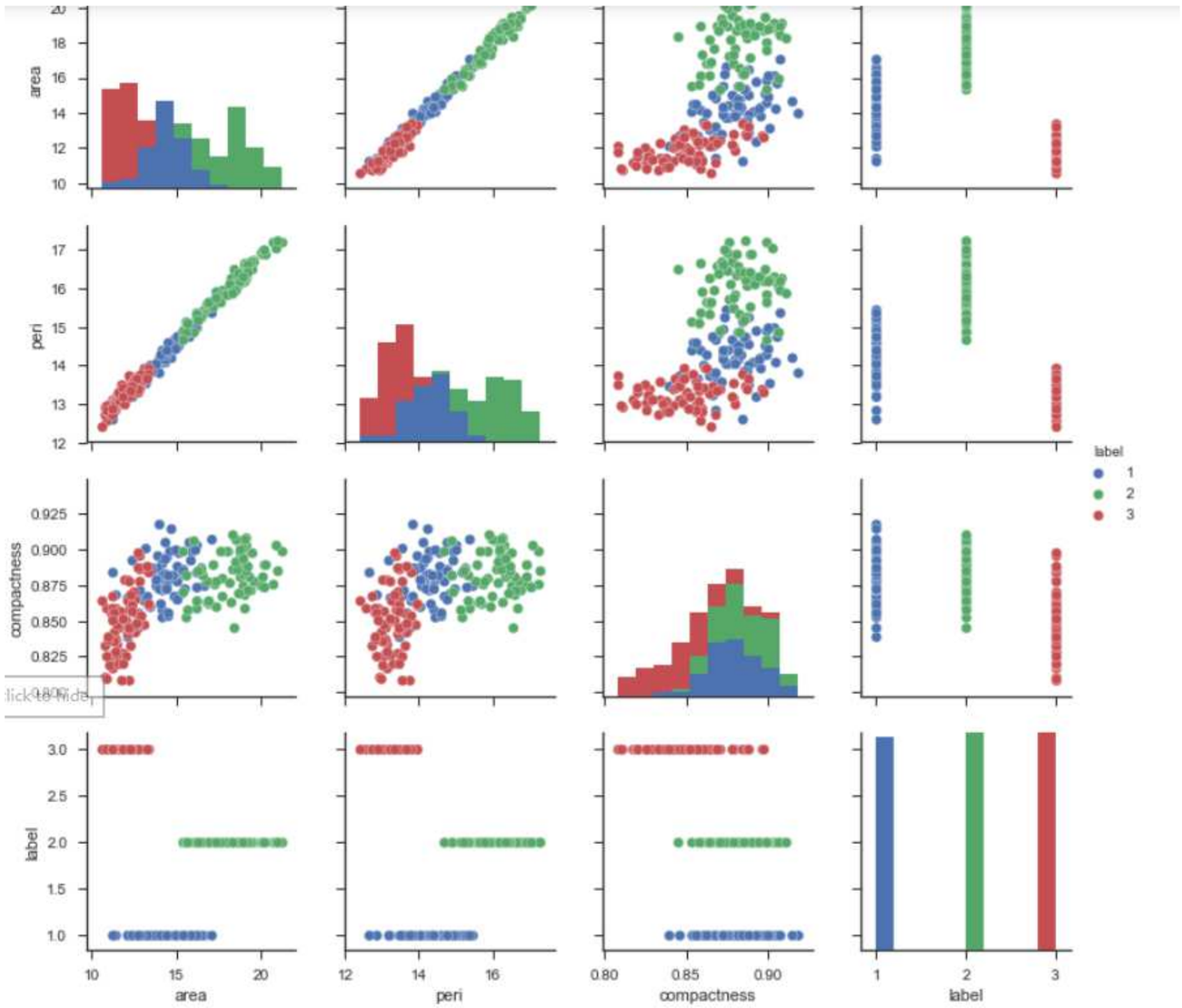

Figure 2: The distribution of features

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KNN performance:

	precision	recall	f1-score	support
class1	0.88	0.82	0.85	17
class2	1.00	0.95	0.98	21
class3	0.82	0.93	0.87	15
avg / total	0.91	0.91	0.91	53

Randomforest performance:

	precision	recall	f1-score	support
class1	0.86	0.71	0.77	17
class2	0.95	0.95	0.95	21
class3	0.78	0.93	0.85	15
avg / total	0.87	0.87	0.87	53

Figure 3: The Comparision of two models

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Summary

- From the above result presentation, we can find that
  KNN is better than Randomforest model.

- From the feature distribution, we can find that
  Class1's data distribution is more nearly Gaussian distribution.
  The first two features are more interrelated.

Thank you & Question