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1. Decision Tree

1.2

For the stopping condition where all target values have the same value, we simply take the first one from the list (i.e. the value at index 0).

Conditional entropy is required to calculate Information Gain.

To calculate the conditional entropy, we use the following formula:

A close up of a clock

Description automatically generated

SplitInfo is required to calculate Gain Ratio.

To calculate the conditional entropy, we use the following formula:

A picture containing object

Description automatically generated

2. SVM

2.2

To calculate predict\_y for the linear case, we use the following formula:

Linear kernel *point* is  , while linear kernel computes the kernel point results between all pairs of points in X. Thus, the output of linear kernel is an n by n matrix K where .