



<http://www.isoft.fr/>



Outline

- About ISoft ...
- What is Decision Tree?
- Alice Process ...
- Conclusions



About Isoft ...

- **ISoft** offers a full consulting services in the Decision Support field, with the powerful Data Mining tool **ALICE d'ISoft** aimed at the business user.
- **ALICE** helps the business user to build *Decision Tree* in his data, and to extract new models, validated by his own knowledge, from these trends.
- **ALICE** is a *Interactive Exploratory System* to find *Classification* from Data by using of *Machine Learning(Decision Tree)*.



What is Decision Tree?

A *Decision Tree* is a flow-chart-like tree structure, where each internal node denotes a test on an attribute, each branch represents an outcome of the test, and leaf nodes represent classes or class distributions. The topmost node in a tree is the root node.



What is Decision Tree?

Generate a decision tree from the given training data.

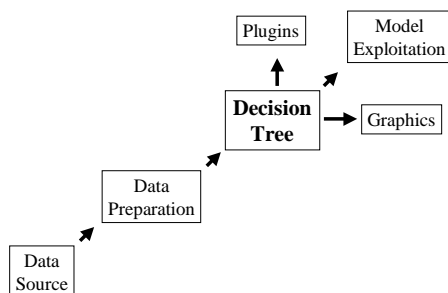
Input: The training samples

Output: A decision tree.

```
create a node N;
if samples are all of the same class, C then
    return N as a leaf node labeled with the class C;
if attribute-list is empty then
    return N as a leaf node labeled with the most common class in samples;
select test-attribute, the attribute among attribute-list with the highest information gain;
label node N with test-attribute;
for each known value ai of test-attribute
    grow a branch from node N for the condition test-attribute = ai;
    let si be the set of samples in samples for which test-attribute = ai;
    if si is empty then
        attach a leaf labeled with the most common class in samples;
    else
        attach the node returned by Generate decision tree(si, attribute-list - test-attribute);
```



Alice Process ...



[illegible]

Alice
The City of Edinburgh

Alice Process ...

Ready Fields Properties
[Click fields properties. You can deliberately exclude some fields from the analysis of the data set.]

Field	Type	Unit
Age	Integer	Year
Address	Text	None
Birthdate	Text	None
City	Text	None
Country	Text	None
Gender	Text	None
Insurance	Text	None
Name	Text	None
Sex	Text	None


Select only the relevant fields, and adjust the type they should be interpreted with.

Field: _____ Type: _____ Unit: _____

< Previous Next > Cancel Help

[illegible]

Alice Process ...



The aim of Data Mining is to find out the answer to a question, from the data you've collected. As your data is the source of the whole process, its preparation is crucial for the relevance of the answer. For example, an interesting variable for the study might not exist, but can be calculated from other available variables.

[illegible][illegible]

[illegible][illegible][illegible]

Alice Process ...

Graphics

Housing	Owner	Rent	Family	?
Owner	~450	~450	~300	~150
Rent	~100	~1000	~100	~100

Differentiate with regard to Housing

[illegible][illegible]



Alice Process ...



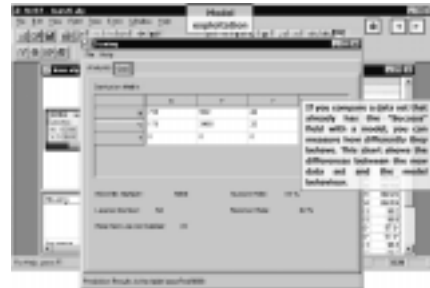
Alice Process ...



Alice Process ...



Alice Process ...



Conclusions

- Powerful and easy to use
- No requirement for advanced computing or statistics background
- User-friendly Interface
- Useful for many different activities

BUT

- No Multi-variables Decision Tree
- Short of Tree Pruning Method
- No Rules Generation

MONEY NEEDED :(Even for Evaluation Demo ...