





TABLE II  
DRY DOCKING ATTRIBUTES SPECIFICATION

Attributes	Data Specification
ukuran, tank, bak	Volume (m <sup>3</sup> )
grt, pelat	Mass (ton)
scraping, sandblasting, cuci, cat	Wide (m <sup>2</sup> )
zinc, sealprop, ringprop, packingprop, chrome, ringkem, packingkem, sealkem, chest, valve, scrupper, manhole, plug	Amount
ut, las	Amount (point)
grease	Mass (kg)
propeller, porosprop, kemudi, poroskem	A = no maintenance, B = recondition, C = balancing, D = change, E = recondition and balancing, F = change and balancing, G = change and recondition, H = change, recondition, and balancing
bantalanprop, bantalankem	A = no maintenance, B = recondition, C = change, D = balancing
shaftseal, jangkar	Options (YES, NO)
panjanglas	Length (m)

m = meter and kg = kilogram.

The classification tree for the dry docking duration can be seen in Figure 1 where dry docking duration is divided into 4 classes [7]. Then, to get the same behavior from both CART and GUI Ant-Miner, we discretized dry docking duration into 4 bins by using Weka Discretization.

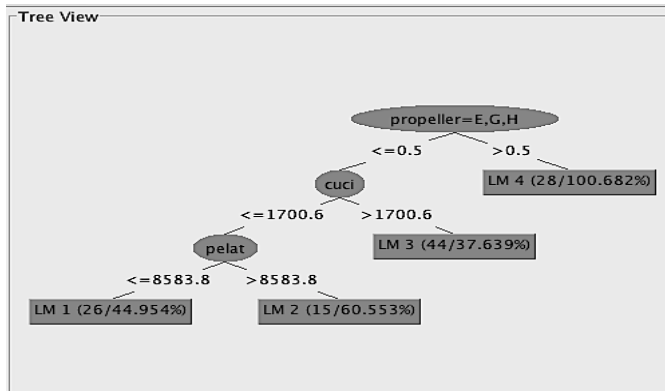


Fig. 1 Classification Tree of Dry Docking Duration

### III. RESULT AND ANALYSIS

In this study, we compare the predictive accuracy resulted by Ant-Miner with static discretization and CART. From Table 3, it can be seen that the predictive accuracy of CART is similar to Ant-Miner with static discretization, and even is likely to be higher than Ant-Miner's. Based on calculations performed by using software, CART has higher accuracy than static discretization Ant-Miner by 0.2667%. While based on manual calculations, CART predictive accuracy is 3.03% higher than Ant-Miner with static discretization. It can be concluded that the predictive accuracy resulted by CART is higher than Ant-Miner with static discretization.

TABLE II  
PREDICTIVE ACCURACY

Methods	Accuracy (Software) [%]	Accuracy (Manual) [%]
CART	65.4867%	63.64%
Ant-miner	65.22%	60.61%

### IV. CONCLUSIONS

Maintenance is one of the most important activities in the shipyard industry. This study uses CART and Ant-Miner with static discretization to estimate the duration of dry docking. The result of this study shows that CART's predictive accuracy tends to be higher than the accuracy of Ant-Miner with static discretization. This indicates that Ant-Miner is not always better than CART.

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