

Syntax and Semantics of D

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1 Syntax

We present a grammar of D , the language of decision trees:

Decision Tree	\mathcal{D}_α	$::=$	<code>case x of { $K\{x\} \Rightarrow \mathcal{D}_\alpha$ } $x \Rightarrow \mathcal{D}_\alpha$]</code>	test node
			α	match node
			<code>if x then \mathcal{D}_α else \mathcal{D}_α</code>	condition with two children
			<code>let $x = e$ in \mathcal{D}_α</code>	let-bind a name
Expressions	e	$::=$	x	name
			\mathcal{D}_e	decision trees
			$K\{e\}$	value constructor application
			$e_1 e_2$	function application

2 What is a decision tree?

Scott, Ramsey 2000:

A decision tree is a pattern-matching automaton in which every state except the initial state has a unique predecessor.

More details will go here as needed.