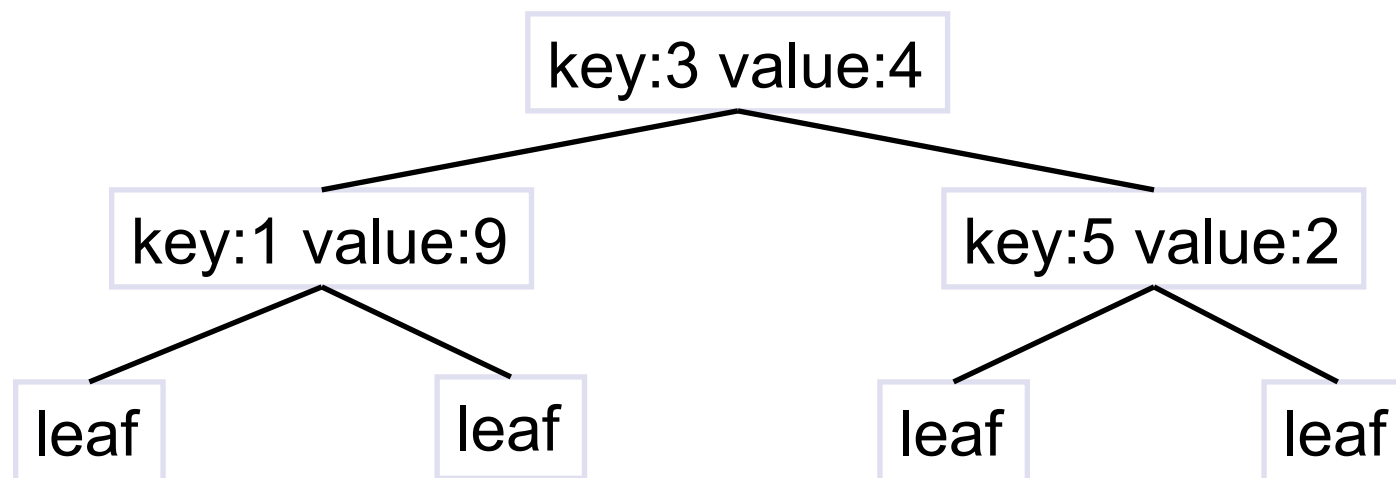
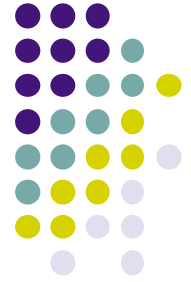




# Ordered binary tree

- $\langle \text{obtree } T \rangle ::= \text{leaf}$   
|  $\text{tree}(\text{key}:T \text{ value}:T \text{ left}: \langle \text{obtree } T \rangle \text{ right}: \langle \text{obtree } T \rangle)$
- **Binary**: each non-leaf tree has two subtrees (named left and right)
- **Ordered**: for each tree (including all subtrees):  
all keys in the left subtree  $<$  key of the root  
key of the root  $<$  all keys in the right subtree

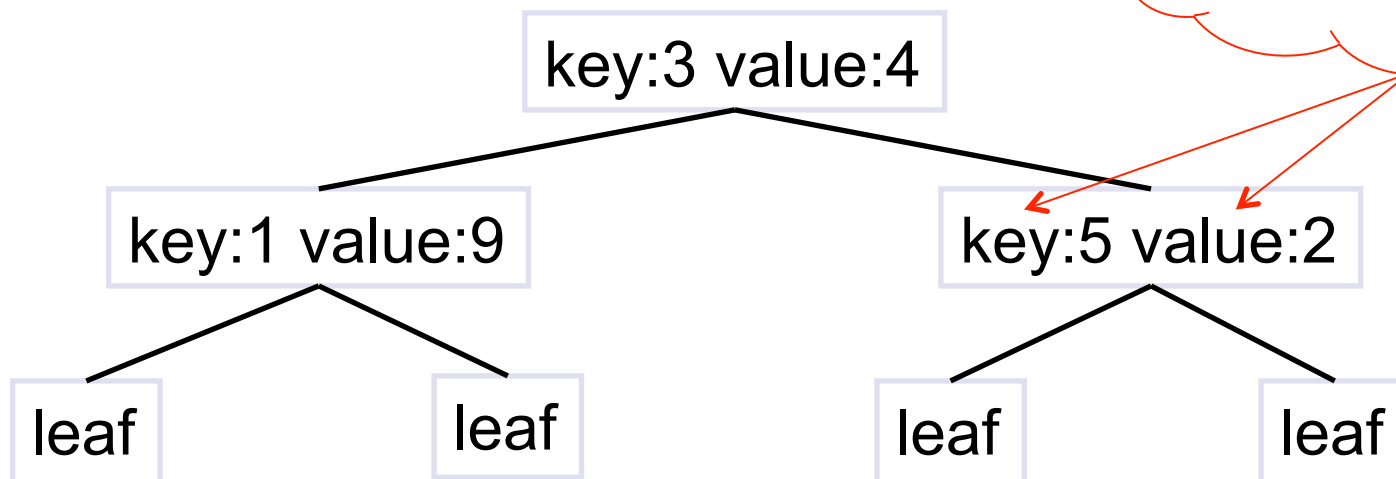




# Ordered binary tree

- $\langle \text{obtree } T \rangle ::= \text{leaf}$   
|  $\text{tree}(\text{key}:T \text{ value}:T \text{ left}:\langle \text{obtree } T \rangle \text{ right}:\langle \text{obtree } T \rangle)$
- **Binary**: each non-leaf tree has two subtrees (named left and right)
- **Ordered**: for each tree (including all subtrees):  
all keys in the left subtree  $<$  key of the root  
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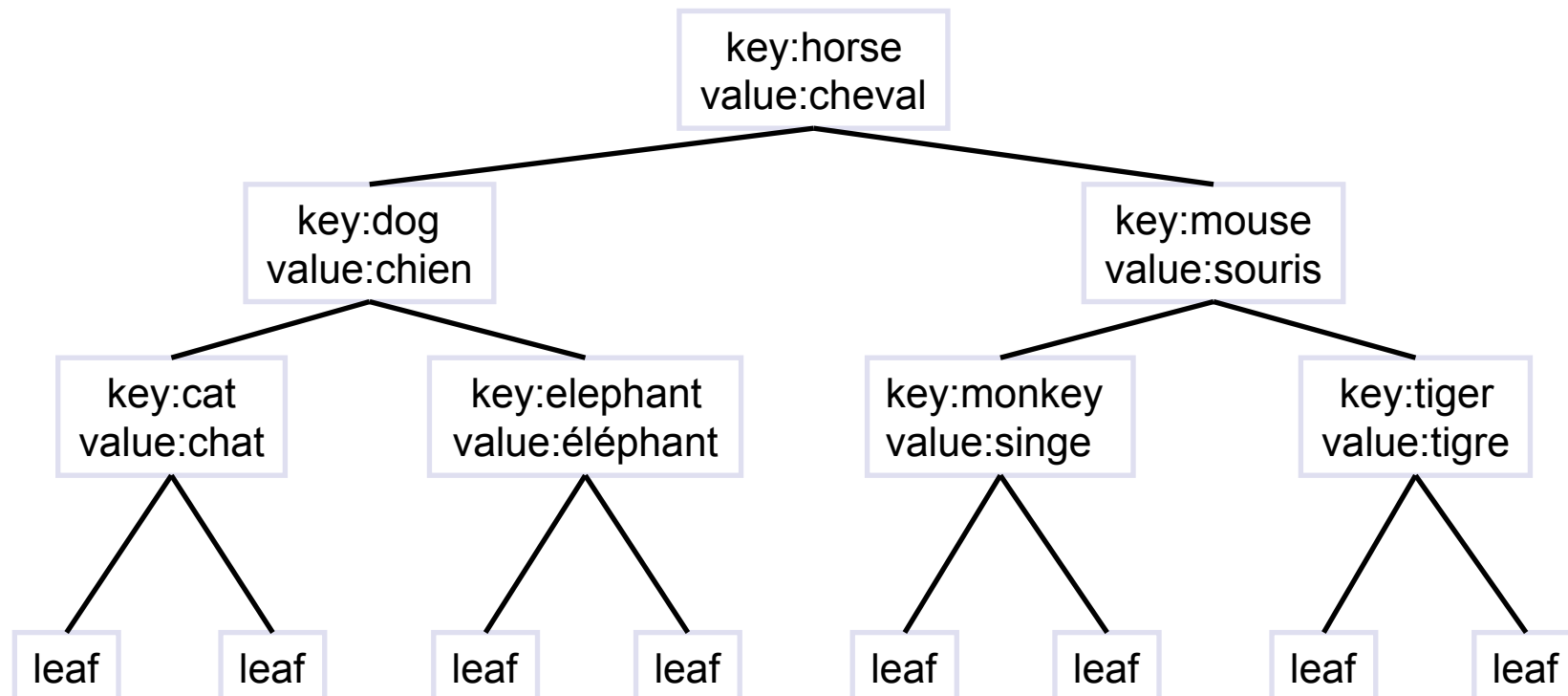
This tree has two information fields at each node: key and value





# Ordered binary tree

- This ordered binary tree is a translation dictionary from English to French





# Ordered binary tree

- This ordered binary tree is a translation dictionary from English to French

