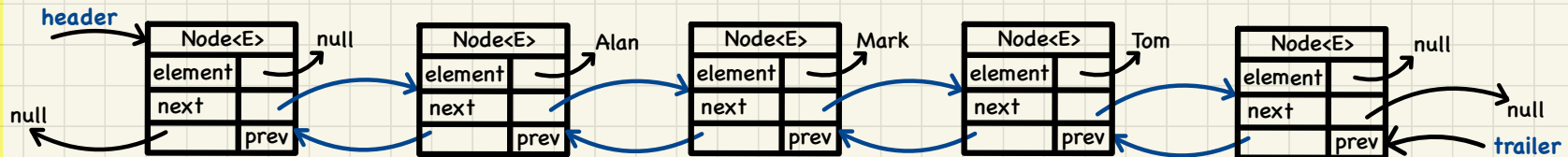
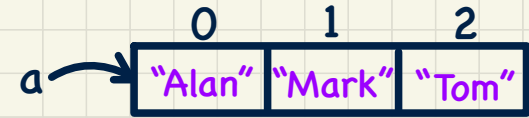
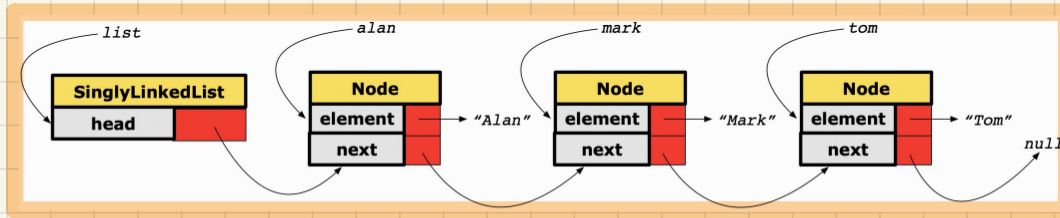
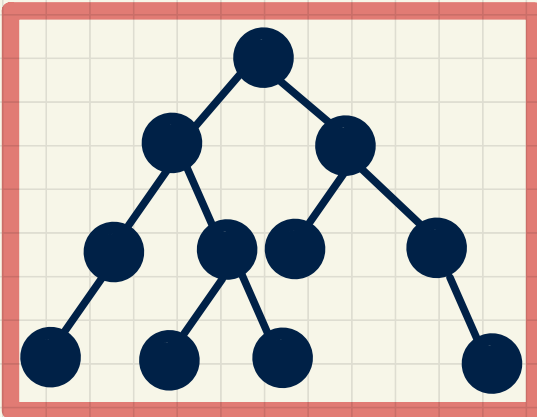
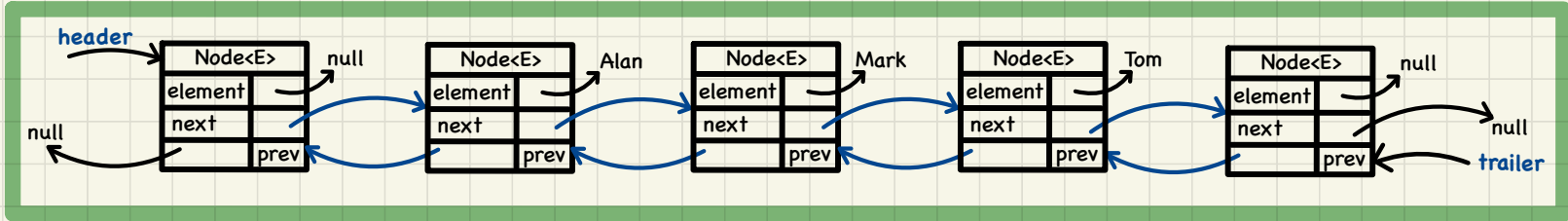
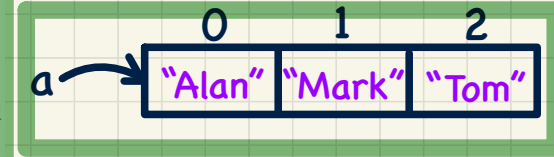
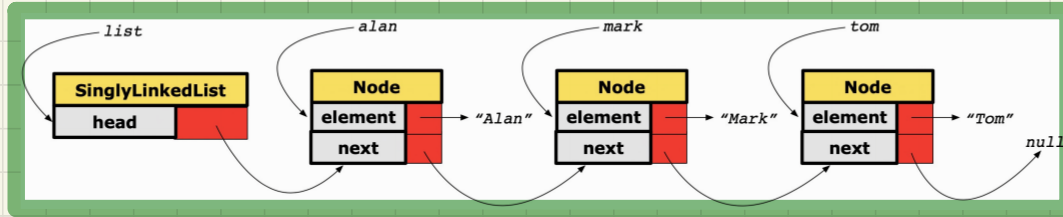


Running Time: Arrays vs. SLL vs. DLL

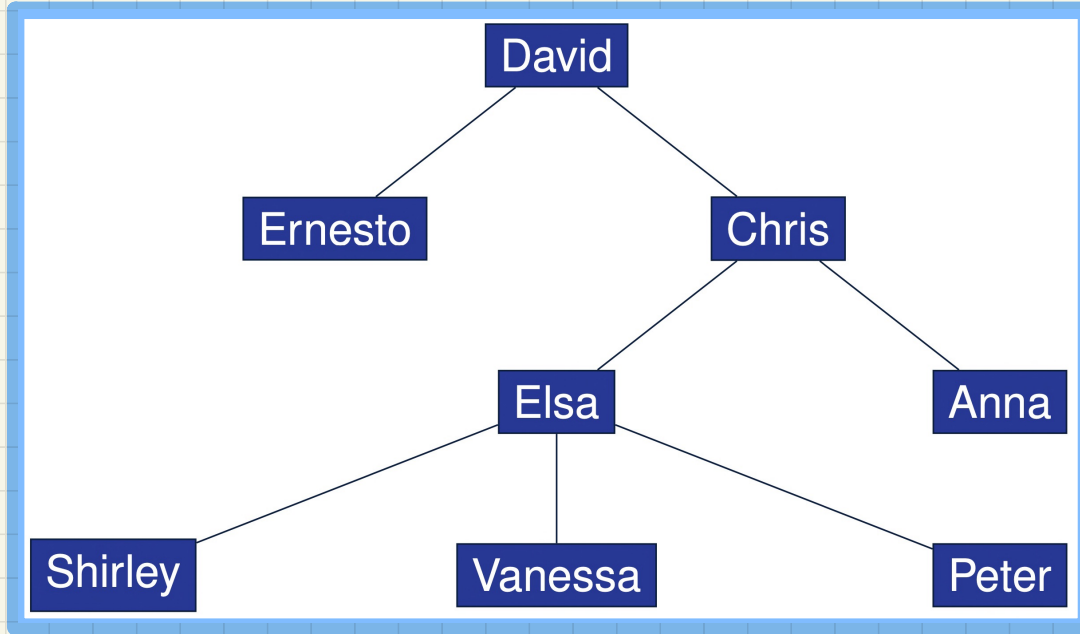
DATA STRUCTURE	ARRAY	SINGLY-LINKED LIST	DOUBLY-LINKED LIST
OPERATION			
size			
first/last element			
element at index i	$O(1)$	$O(n)$	
remove last element			
add/remove first element, add last element		$O(1)$	
add/remove i^{th} element	$O(n)$		
given reference to $(i - 1)^{th}$ element			
not given			



Linear vs. Non-Linear Structures

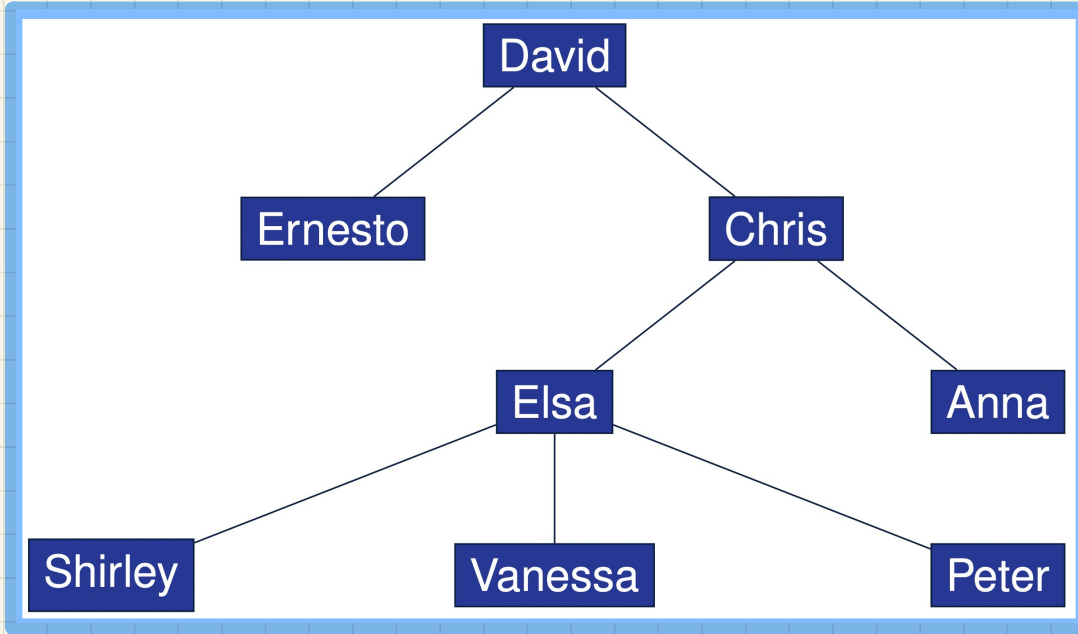


General Trees: Terminology (1)



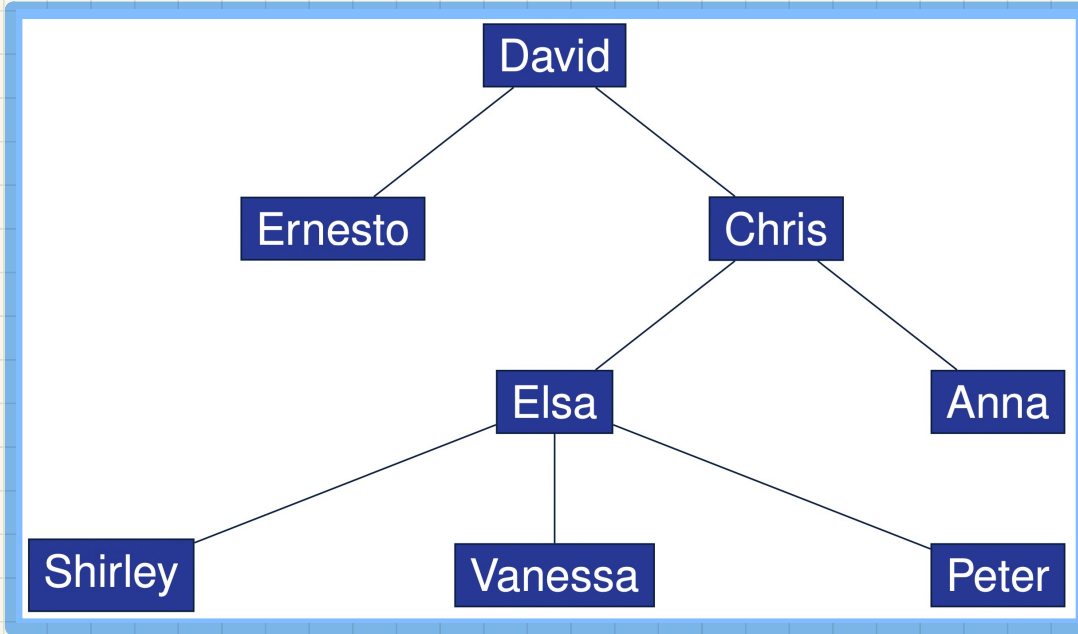
- root
- parent
- children
- ancestors
- descendants
- siblings

General Trees: Terminology (2)



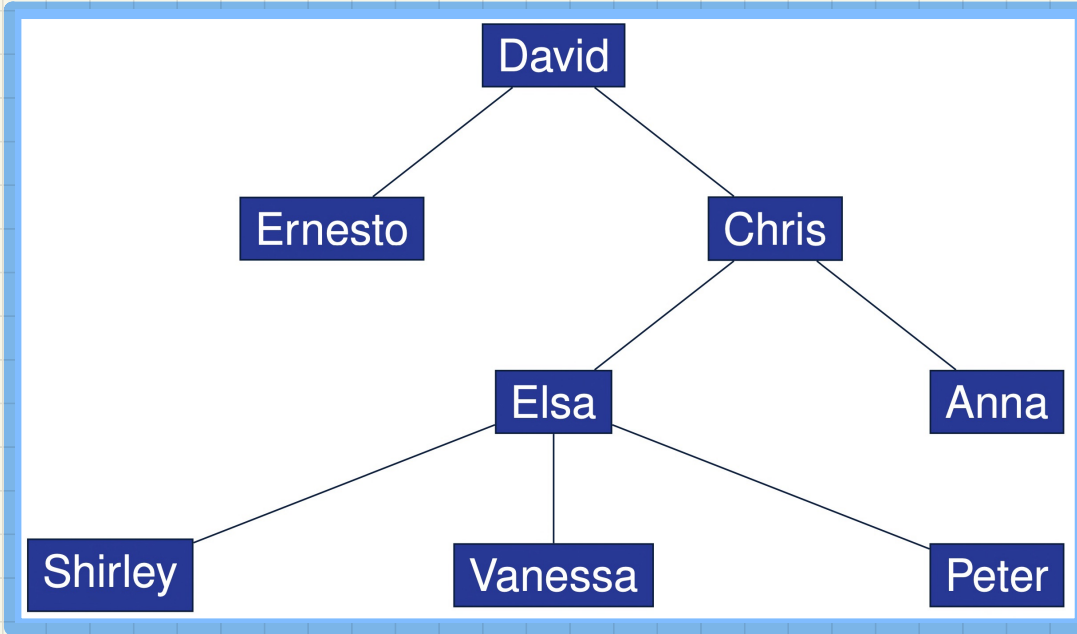
- subtree

General Trees: Terminology (3)



- external nodes
- internal nodes

General Trees: Terminology (4)



- edge
- path
- depth
- height