Type	Name	Time complexity	Reference
Hierarchical	Single-link (SLINK)	$O(v^2)$	
	Complete-link (CLINK)	$O(v^2 \log v)$	
	Average-link (UMPGA)	$O(v^2 \log v)$	
Modularity	Fast greedy	$O(kvd \log v)$	
	Multi-step greedy	$O(kvd \log v)$	
Partitional	Kernighan-Lin bi-partitioning	$O(v^2 \log v)$	
	K-means	$O(kvd)$	
Spectral	Ratio cut algorithm (EIG1)	$O(v^3)$	
	Jordan and Weiss NG algorithm (KNSC1)	$O(v^3)$	
	Spectral k-means	$O(v^3)$	
Overlapping	BigClam	$O(v^2)$	