Template matching for pattern-based clique finding

- P_u: the set of nodes in pattern P
- F_u: the set of all nodes in all patterns
- Base = {i,k}
- T={$C_{i,k}$∪{i, k}}, the nodes in the triangles of a projector matrix entry & base
- MissingP = P_u\ T: nodes in one pattern that are not in the nodes of triangles from a projector matrix entry
- Missing* = MissingP ∩ q*: the nodes in a pattern core that are not in the nodes of triangles of a projector matrix entry
- Jold* = q* ∩ $C_{i,k}$: the nodes in a pattern core that are in the projector matrix entry
- Clique_check(P, T): returns true if P reflects T as if it were a clique
- Tri_covd(P, $C_{i,k}$, i, k): returns true if P reflects every triangle with i,k as base and an element of $C_{i,k}$ as 3d node (called triangles_covered in code)

	Process the Base Process only if i, k not in same core for some pattern. First, Loop through all the patterns and if clique_check(P, T) or tri_covd(P, $C_{i,k}$, i, k), then stop (do not process column). Loop through all the patterns and if we find a trigger for an Action, perform it and stop.	**Process the Projectors** Process only if $C_{i,k}$\ F_u ≠ {} Loop through all the patterns and apply the actions in the templates.	**Adjust the Patterns** (optional?) Process only if F_u\ T ≠ {} First, loop through all patterns and if P_u\ T={} or clique_check(P, T) or tri_covd(P, $C_{i,k}$, i, k), then stop (do not process column). Loop through all the patterns and apply the actions in the templates.
i,k ∉ P_u	Action 1: New pattern, q* = T, q#={}	No action	No action
i,k ∈ q*	No action	Action 3: Pnew = $C_{i,k}$\ P_u if Pnew≠ {} if |Pnew| = 1 New pattern, q* = [i,k,Pnew], q#={} else M= $C_{i,k}$ ∩ q* if |M| = 1 new q# = Pnew ∪ M q* = q*/M else new q# = Pnew else No action	Action 4: if |Missing*| = 1 remove Missing* else move Missing* to new q#
i,k ∈ Q#.	No action	Action 3	No action

one of i,k ∉ P_u, the other ∈ q*	Action 2
	if |$C_{i,k}$| = 1 or (Jold*≠ {} and |q*| <= 3):
	Action 1
	else
	No action
		No action	Action 5
			if MissingP ≠ {}
			M = (one of i,k ∉ P_u and MissingP)
			if there is exactly one q# that contains nodes in MissingP, move M to that q#
			else
			move M to a new q#
			else
			No action

one of i,k ∉ P_u, the other ∈ q#	Action 2	No Action	Action 6 if MissingP\ nodes in the "other" q# ≠ {} M = (one of i,k ∉ P_u and MissingP) \ nodes in the "other" q# if there is exactly one q# that contains nodes in M, move M to that q# else move M to a new q# else No action
one of i,k ∈ q*, the other ∈ q#	Action 2' If Jold*≠ {} and |q*| < 3: Action 1 Else No action	Action 3	Action 7 if Missing*≠ {} move Missing* to "other" q# else No action