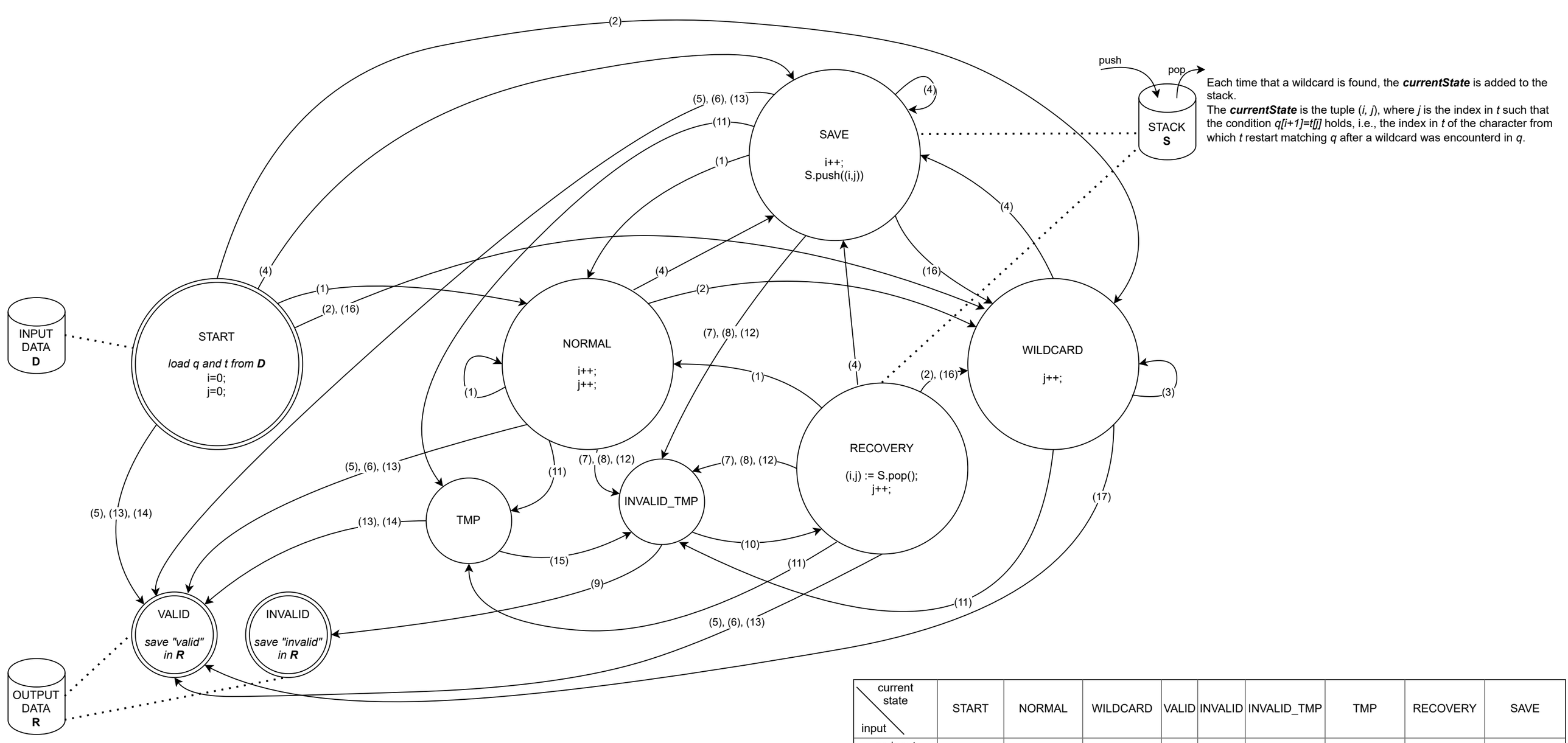
GOAL: Given an un-stememd wildcard query *q* and a stemmed token *t*, return true if the stemmed version of the wildcard query is compatible with the given stemmed token, false otherwise.
This problem is solved using an implementation of a modified finite-state machine, where each state can take some input parameter and its state evolves dynamically according to its current state and the input parameters.



(1) i < q.length AND j < t.length AND (q[i] = t[j] OR *stem(* t.substring(0,j) + q.substring(i).removeAll("*") *)* = t)
(2) i < q.length-1 AND j < t.length AND q[i] ≠ t[j] AND q[i] = '*'
(3) i < q.length-1 AND j < t.length AND q[i+1] ≠ t[j]
(4) (i < q.length-1 AND j < t.length AND q[i+1] = t[j]) OR (i = q.length-2 AND j = t.length-1 AND q[i] = '*' AND q[i+1] = t[j])
(5) (i = q.length OR i = q.length - 1) AND j = t.length
(6) i = q.length-1 AND j < t.length AND q[i] ≠ t[j] AND q[i] = '*'
(7) i = q.length-1 AND j < t.length AND q[i] ≠ t[j] AND q[i] ≠ '*'
(8) i < q.length-1 AND j < t.length AND q[i] ≠ t[j] AND q[i] ≠ '*'
(9) S.isEmpty()
(10) ! S.isEmpty()
(11) i < q.length AND j = t.length
(12) i = q.length AND j < t.length
(13) i < q.length AND j = t.length AND i < q.length AND *stem(* t + q.substring(i).removeAll("*") *)* = t
(14) q[i] = '*' AND i = q.length-1
(15) q[i] ≠ '*' OR i < q.length-1
(16) i < q.length-1 AND j < t.length AND q[i] ≠ t[j] AND q[i+1] = '*' AND q[i] ≠ '*'
(17) j = t.length AND i < q.length AND *stem(* t + q.substring(i+1).removeAll("*") *)* = t

current state / input	START	NORMAL	WILDCARD	VALID	INVALID	INVALID_TMP	TMP	RECOVERY	SAVE
no input (unstable state)	-	-	-	*end*	*end*	-	-	-	-
(1)	NORMAL	NORMAL	-	-	-	-	-	NORMAL	NORMAL
(2)	WILDCARD	WILDCARD	-	-	-	-	-	WILDCARD	-
(3)	-	-	WILDCARD	-	-	-	-	-	-
(4)	-	SAVE	SAVE	-	-	-	-	SAVE	SAVE
(5)	VALID	VALID	-	-	-	-	-	VALID	VALID
(6)	-	VALID	-	-	-	-	-	VALID	VALID
(7)	-	INVALID_TMP	-	-	-	-	-	INVALID_TMP	INVALID_TMP
(8)	-	INVALID_TMP	-	-	-	-	-	INVALID_TMP	INVALID_TMP
(9)	-	-	-	-	-	INVALID	-	-	-
(10)	-	-	-	-	-	RECOVERY	-	-	-
(11)	-	TMP	INVALID_TMP	-	-	-	-	TMP	TMP
(12)	-	INVALID_TMP	-	-	-	-	-	INVALID_TMP	INVALID_TMP
(13)	VALID	VALID	-	-	-	-	VALID	VALID	VALID
(14)	-	-	-	-	-	-	VALID	-	-
(15)	-	-	-	-	-	-	INVALID_TMP	-	-
(16)	WILDCARD	WILDCARD	-	-	-	-	-	WILDCARD	WILDCARD
(17)	-	-	VALID	-	-	-	-	-	-