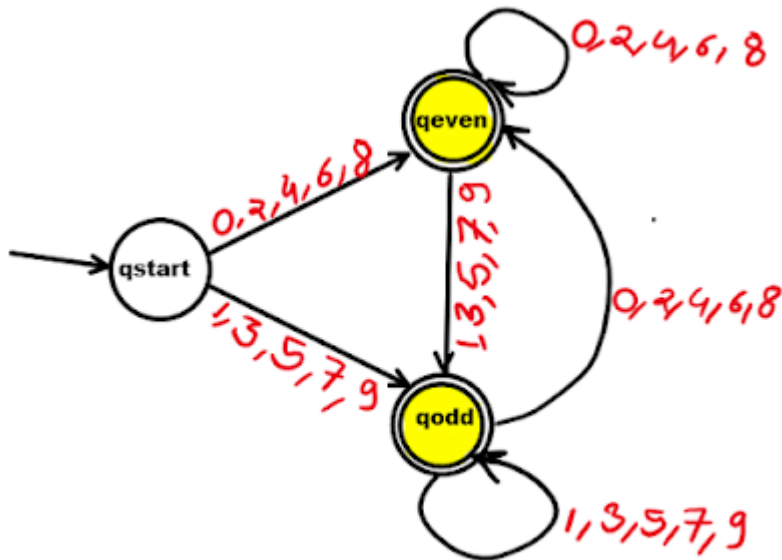


## Transition Diagram:

- This is a graph in which vertices represent state of machine and the edges show transition of states.
- The labels on these edges indicate input/output for the corresponding transition.

A transition diagram for a DFA  $M = (Q, \Sigma, \delta, q_0, F)$  is a graph defined as follows:

- For each state in  $Q$  there is a node.
- There is labelled input symbol on transition.
- Then the transition diagram has an arc (arrow) from one node to another node.
- If multiple input symbols cause the same transition from one node to another node, then multiple input labels separated by the commas are given to that edge.
- There is an arrow into the start state  $q_0$  labeled as start. This arrow does not originate at any node.
- Final states/ accepting states are marked by concentric double circles.
- States not belonging to final states have a single circle. e.g.

**DFA that identifies ODD and EVEN numbers**

### Transition Table:

- It specifies the resultant set of states for the corresponding current state and input to the machine.
- A transition table is a conventional tabular representation of a function like  $\delta$  that takes two arguments and returns a value the rows of the table correspond to the states and the columns correspond to the inputs.
- The entry for the row corresponding to state  $q$  and the column corresponding to input  $a$  is the state  $\delta(q, a)$ .

State	Input Symbol	
	0, 2, 4, 6, 8	1, 3, 5, 7, 9
qstart	qeven	qodd
qeven	qeven	qodd
qodd	qeven	qodd

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