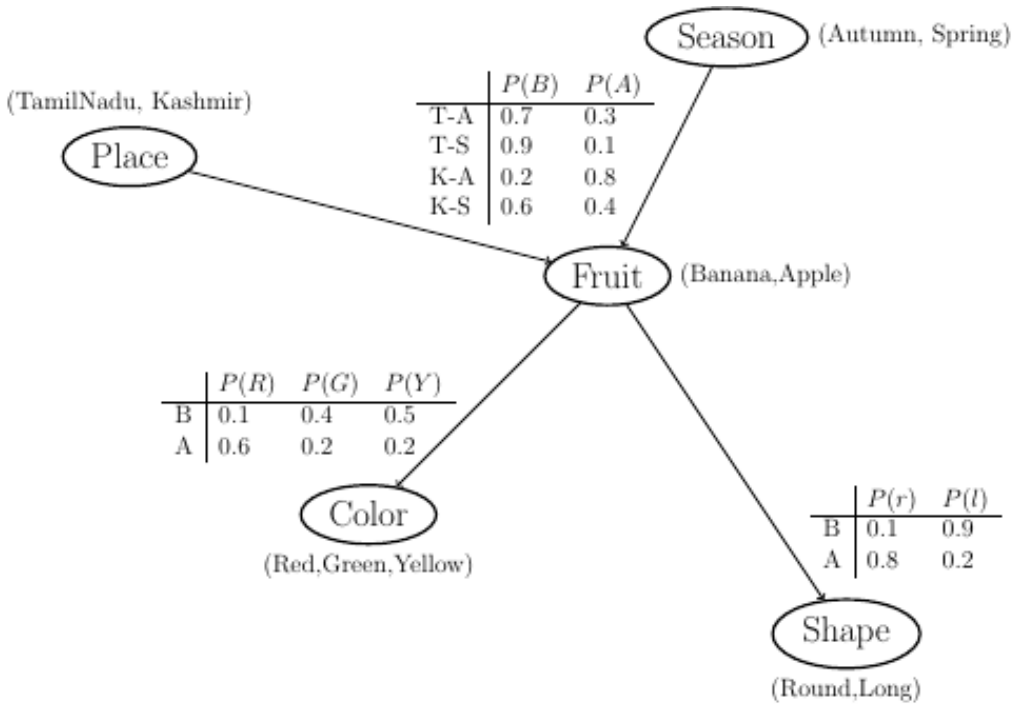
# Implementation of Bayesian network

Implement a Bayesian network with configuration and CPTs as shown in the following diagram.




1. Set prior probabilities for places as P(T) = P(K) = 0.5 and those for the seasons as P(A) = P(S) = 0.5. The equiprobable states mean that we do not know at which place we are, and which season we are in. Compute the prior probabilities for and determine the most likely fruit, color, and shape.
2. Now assume that you are in Kashmir. Instantiate the “place” node accordingly (set appropriate probability values). Compute the posterior probabilities.
3. *Suggestion: Hand computes results of steps 1 and 2 and compare to verify the Bayesian network is correctly implemented.*
4. Check the states of the various nodes. Has anyone remained unchanged? Explain why.
5. Further (keep the “Kashmir” assumption), assume that you are observing a yellow fruit, round in shape. Instantiate the color and the shape nodes accordingly and compute the posterior probabilities of the unobserved nodes in the network.
6. What are the most likely fruit and the most likely season you are in?