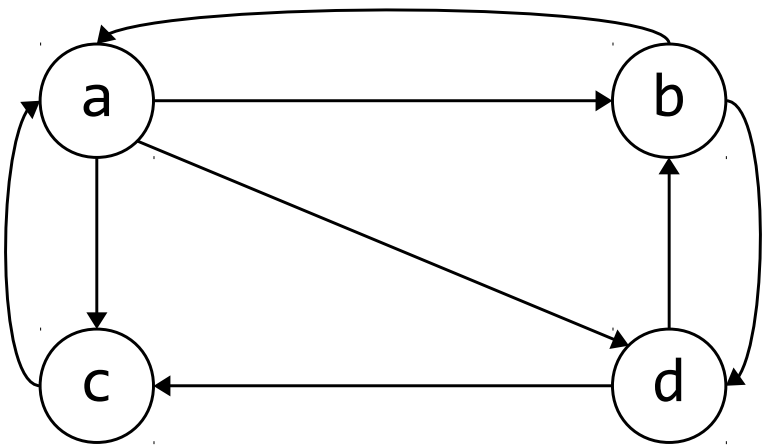
Random walkers

- For **large graphs,** solving linear systems of equations is intractable.
- **Random surfers:** Where do you end if you follow links at random?



Start at node a: after one step, end up in b, c, or d with probability $\frac{1}{3}$.

- **Transition matrix:** $M_{ij} = \frac{1}{d_j}$ if $j \to i \in \mathcal{E}$ and 0 otherwise.

The transition matrix is **column-stochastic:** columns sum to 1.