

# BFS Observations

**Obs. 1:** BFS can be used to count components.

**Obs. 2:** BFS can be used to detect cycles.

**Obs. 3:** In BFS, **d** provides the shortest distance to every vertex.

**Obs. 4:** In BFS, the endpoints of a cross edge never differ in distance, **d**, by more than 1:

$$|d(u) - d(v)| \leq 1$$