Single source shortest paths:

Dijkstra Algorithm - No negative weight allowed - O(E+Vlg(V))

Bellman ford Algorithm - Negative weight is allowed. But if a negative cycle is present Bellman ford will detect the -ve cycle - O(VE)

Directed Acyclic Graph - as name suggests it works only for DAG - O(V+E)

All pairs shortest paths:

Dijkstra Algorithm - No negative weight allowed - O(VE + V^2lg(V))

Bellman ford Algorithm - O(V^2E)

Matrix chain multiplication method -complexity same as Bellman ford algorithm

Floyd Warshall algorithm -uses dynamic programming method - Complexity is O(V^3)

1.Dijkstra's algorithm is used only when you have a single source and you want to know the smallest path from one node to another, but fails in cases like [this](http://i.stack.imgur.com/rmowk.png)

2.Floyd-Warshall's algorithm is used when any of all the nodes can be a source, so you want the shortest distance to reach any destination node from any source node. This only fails when there are negative cycles

3.Bellman-Ford is used like Dijkstra's, when there is only one source. This can handle negative weights .