Can we apply Bellman ford algorithm to Undirected Graph

I know that Bellman-Ford Algorithm works for directed graphs but just for Info i want to know that whether it will work for Un-directed graph? Since with Un-directed graph it will not be able to detect cycles because parallel edges will be considered as Cycles!!. Please clarify.

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★ 10 followers

edited Feb 11 '13 at 1:03
templatetypedef
220k 52 541 800

asked Feb 9 '13 at 5:54
anuj pradhan
832 1 12 23

2 Have a look at this one. – Nik Feb 9 '13 at 5:57

1 Answer

As a matter of fact any undirected graph is also a directed graph.

You just have to specify any edges {u, v} twice (u, v) and (v, u).

But don't forget, that this also means any edge with a negative weight will count as a loop. As the Bellman-Ford algorithm ONLY works on graphs that don't contain any cycles with negative weights this actually means your un-directed graph mustn't contain any edges with negative weight.

If it doesn't its pretty fine to use Bellmann-Ford.

answered Feb 11 '13 at 0:59
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6,390 21 35

7 To elaborate on this - since the graph has to have only nonnegative edges, this means that you might want to just use Dijkstra's algorithm instead, since it's asymptotically faster. – templatetypedef Feb 11 '13 at 1:03

I has the same doubt. Thank you for clarification. – whitehat Jul 15 '15 at 19:24