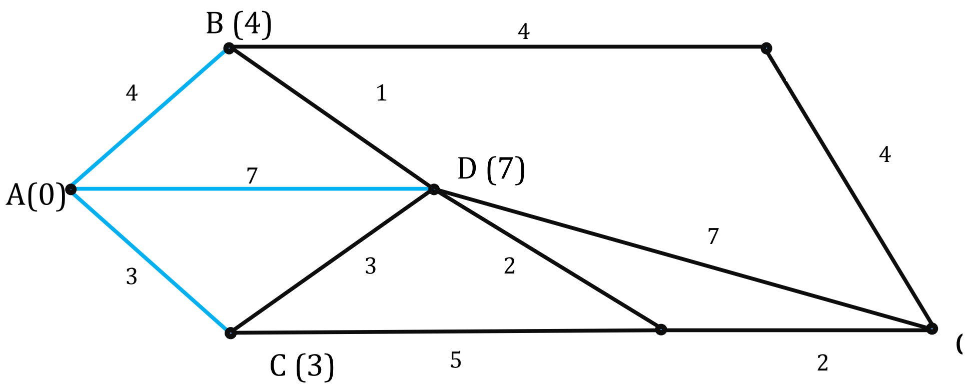
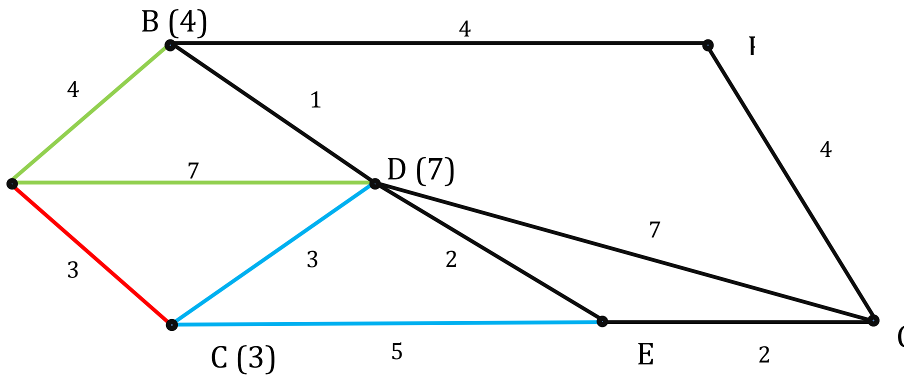
The original diagram

<table>
<tr><th colspan="2">Applying the algorithm</th></tr>
<tr><td>The starting node is A and has label 0. From A we can reach B, C, and D.
• The distance of B from A is 4.
• The distance of C from A is 3.
• The distance of D from A is 7.
B(4), C(3) and D(7) are labelled with these temporary distances in brackets.
The edges considered are marked in blue.
As the shortest of these lengths is 3, we now confirm C as having mimimum distance of 3 from A, and edge AC as part of a possible path. Colour this edge red.
See these changes in the next diagram.</td><td>
</td></tr>
<tr><td>Now look at vertices we can reach from C, which are D and E (marked by blue edges).
The distance of D from A is 7, which is the current temporary label of D.
The distance of D from C along edge CD is 3. As 3+3=6 (permanent label of C plus weight of edge CD, or distance of D from A via C), which is less than 7 (current temporary label of D),we change the label of D to be 6.
E gets a temporary label of 8 (3+5).
The shortest of the three temporary labels (for B, D and E) is 4, so we can now confirm B, give it a permanent label of 4, and colour edge AB red (as it was the edge used to get to B).
All blue edges now become green.</td><td>
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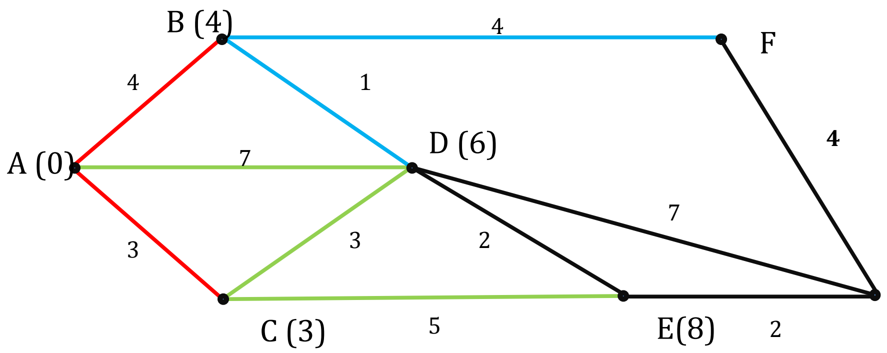
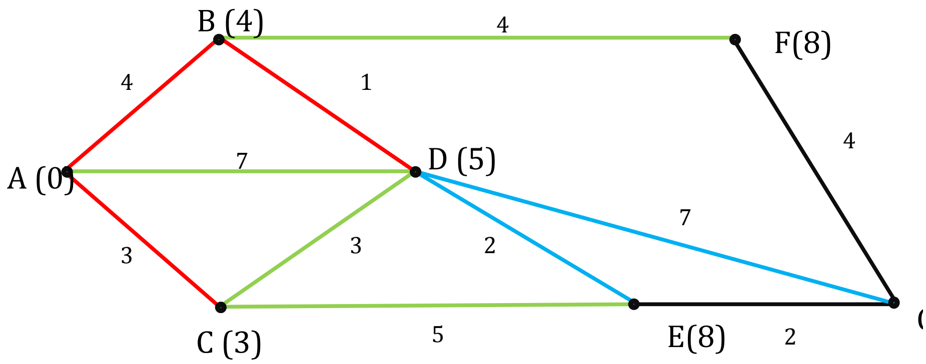
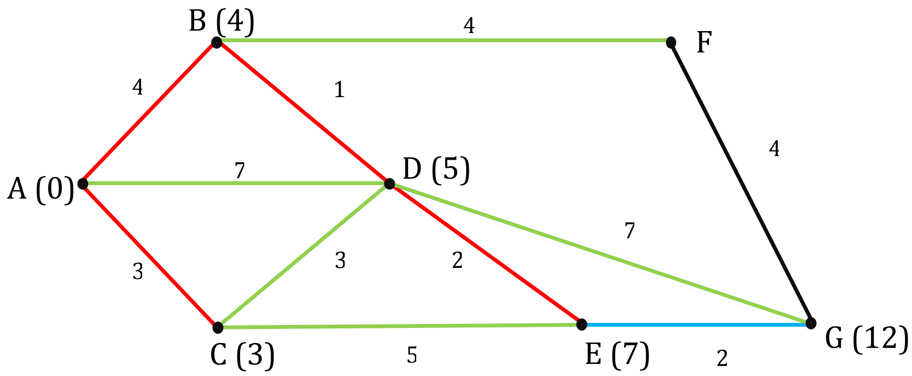
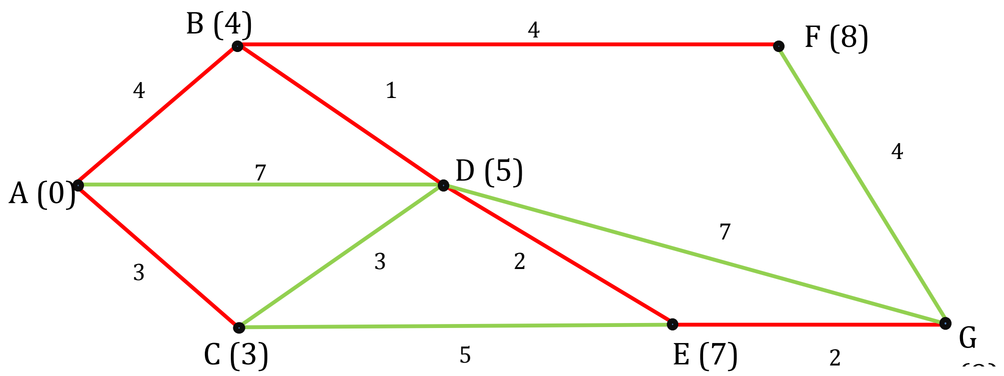
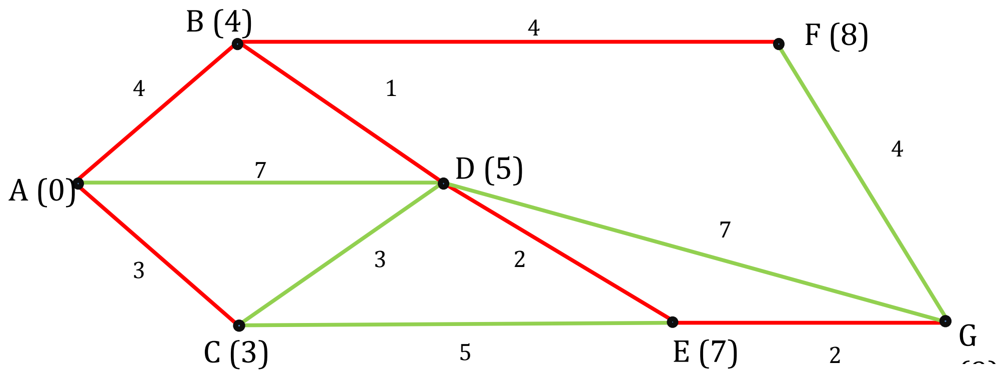
We now look at the vertices we can reach from B. The edges considered are marked blue. F can be reached from B with a total distance from A of 4+4=8, and so gets temporary label 8. D can be reached from B along edge BC with weight of 1. The shortest total distance from A to D is now 5 (4+1) so D gets a temporary label of 5. The vertex with the smallest temporary label (out of D, E, and F) is now D, so D is confirmed. Any blue edges left become green.	
We now look at the nodes we can reach from D. The edges considered are marked in blue. E can be reached from D and now has a shortest distance from A of 5+2=7 (along edge DE), so gets a temporary label of 7. G can be reached from D. The temporary distance of G is now 5+7 or 12. We label E(7) and G(12). The smallest temporary label is now 7 for vertex E, so E is confirmed. Edge DE becomes red (last edge used to give E its label).	
We now look for vertices we can reach from E that have not got permanent labels. In this case, this is only G, so G now gets a new temporary label of 9 (7+2). The smallest temporary label is now F at 8. F is confirmed. Make edge BF red.	

<table>
<tr><td>We now look at the vertices we can get to from F that do not have permanent labels, which is only G.

G has a temporary label of 9, which is smaller than 12 (8+4), so G is now confirmed (as it is the only vertex left) and gets a permanent label of 9.

We have found the shortest distance from A to G, which is 9 km.

Make edge EG red (how G got its label of 9).</td><td>
</td></tr>
<tr><td>This is the final graph with all vertices confirmed.</td><td>
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