

An issue with Map::Tube

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2025-04-23

The lines

Suppose we have a map with two lines which, shown separately, have the structures shown in figures 1 and 2. (This is a strongly reduced abstraction of a real world example.)

Figure 1: Line Black

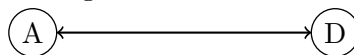
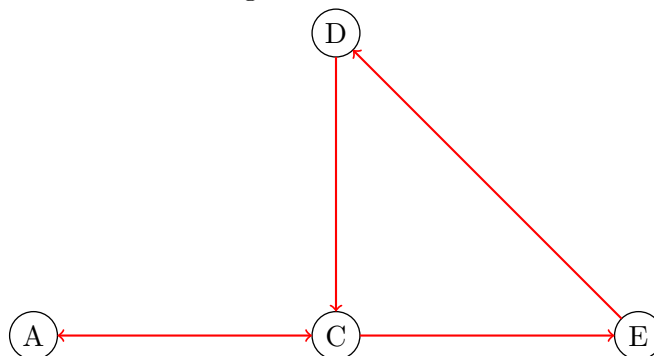


Figure 2: Line Red



Taken together, this tube network has the structure shown in figure 3.

The issue

Producing a map of line Red using `map-tube --map=Testmap --force --line=Red --generate` should produce something roughly like figure 2, but in fact produces figure 4.

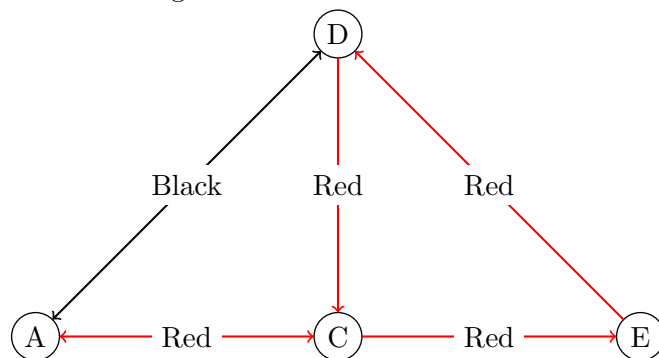
This is, in fact, a mixture of both lines.

The issue is that two stations may be linked which each other through different lines on different paths. In the example, line Black provides a direct link between A and D, whereas line Red provides an indirect link from A to D via C and E. The map-tube-generated image for line Red, however, erroneously shows the direct link from A to D as being provided by line Red.

In addition, the map-tube-generated image for Line Black (figure 5) correctly shows a bidirectional connection between A and D and “external” (dashed line) links from A and D to C, but it also shows a seemingly unconnected node E. Instead, it would be correct to have an “external” (dashed line) link from E to D.

The underlying issue in both cases is that, in the XML (or JSON) representations, a station’s line information and its link information are not connected with each other. One can see which lines are serving a station; one can see which stations are directly linked (by *some* line), but not which line provides which link. Map::Tube tries to guess which lines provide services to which links, but it must fail, because the information in the XML (or JSON) data does not allow this distinction.

Figure 3: Lines Red and Black



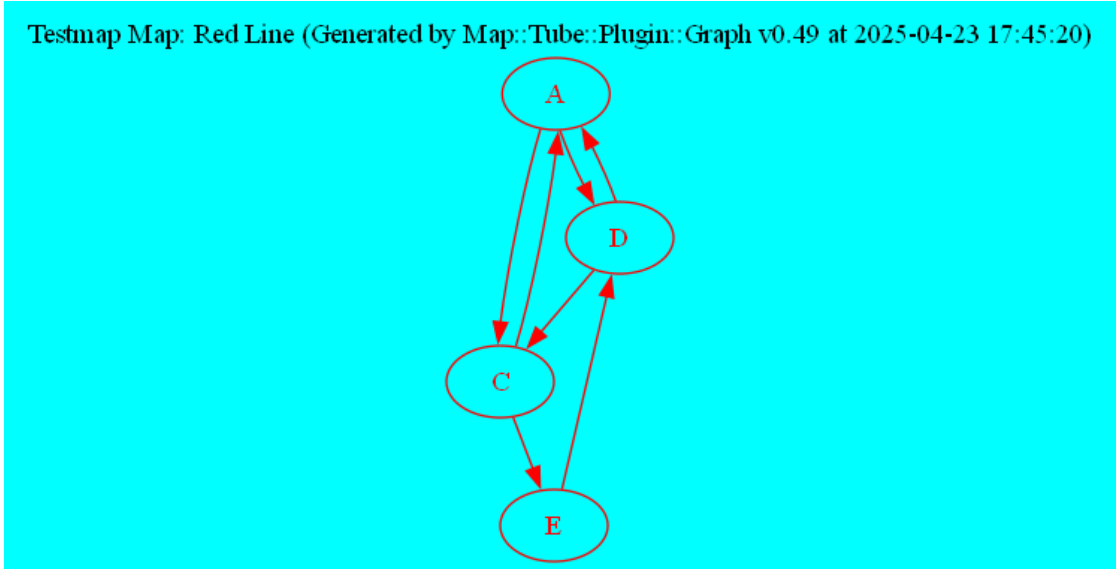


Figure 4: map-tube image of line Red

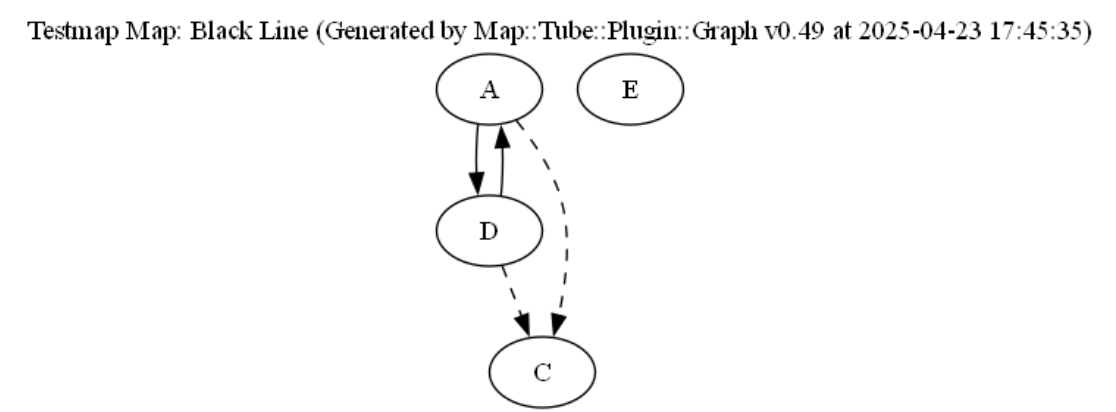


Figure 5: map-tube image of line Black