

The tree is inaccurate:

Go to node 4, map the node starting at index 0 (x) and ending at index 1 (a),

Note that node 4 has 3 children.

Try to map node 4's child node 9.

From node 4, node 9 maps the characters of index 7(a) to infinity.

The issue is that now a path exists from root that represents 'xaabbx' which is not a substring of S.

Note though that really 4 should only have 2 children and that really node 9 should just represent just $i[2] - i[2]$ with an internal node to represent bbx.

I'm not sure of a solution yet, I'm confused why this is the case.