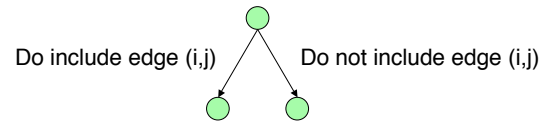


New Search Tree

Use the same method for computing bounds.



What happens to the matrix when an edge is excluded?

Traveling Salesperson: Done another way.

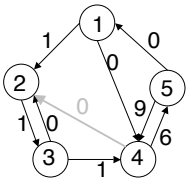
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Excluding an Edge

$$\begin{pmatrix} 999 & 1 & 999 & 0 & 999 \\ 999 & 999 & 2 & 999 & 0 \\ 999 & 0 & 999 & 1 & 999 \\ 999 & 0 & 1 & 999 & 6 \\ 0 & 999 & 999 & 9 & 999 \end{pmatrix} \rightarrow \begin{pmatrix} 999 & 1 & 999 & 0 & 999 \\ 999 & 999 & 2 & 999 & 0 \\ 999 & 0 & 999 & 1 & 999 \\ 999 & 999 & 1 & 999 & 6 \\ 0 & 999 & 999 & 9 & 999 \end{pmatrix}$$



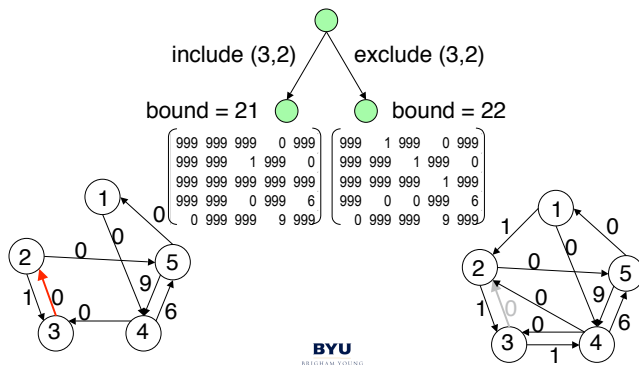
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Which edge to consider

- Maximize “exclude” bound.
- Maximize the difference between the two.

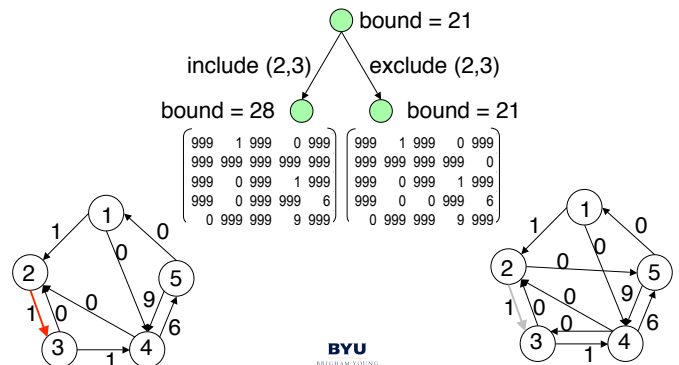
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Consider edge (3,2)



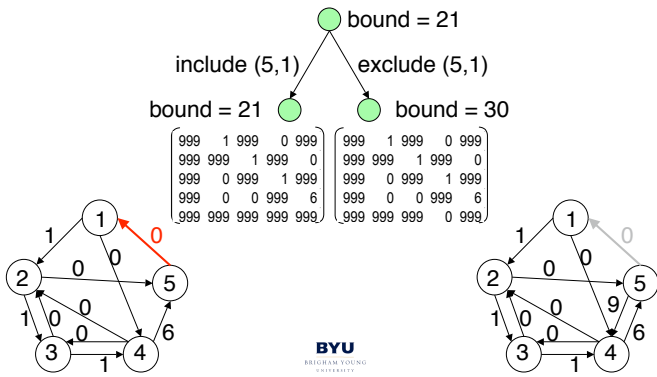
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Consider edge (2,3)

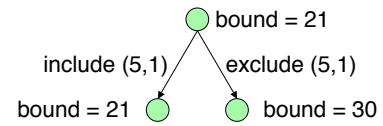


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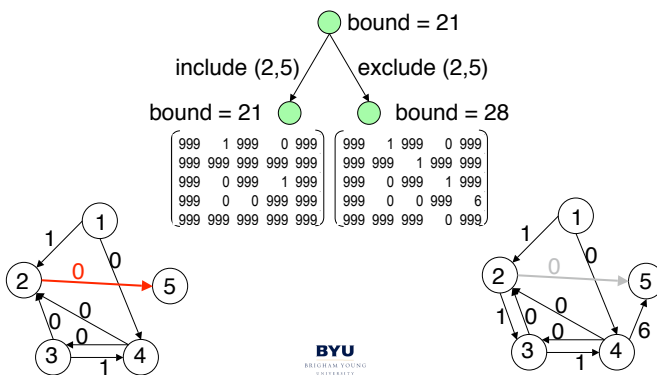
Consider edge (5,1)



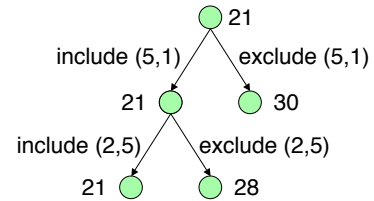
Tree so far



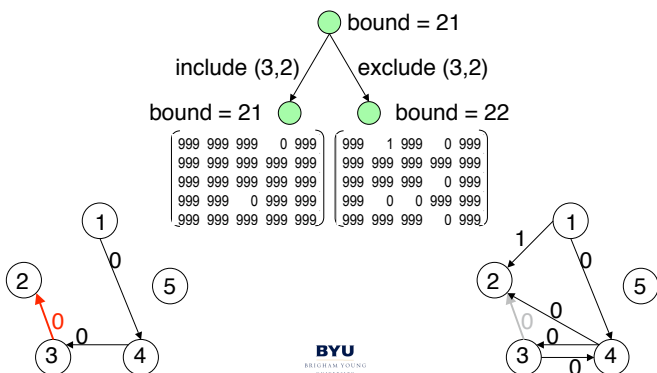
Consider edge (2,5)



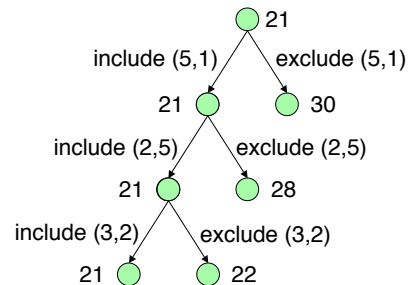
Tree so far



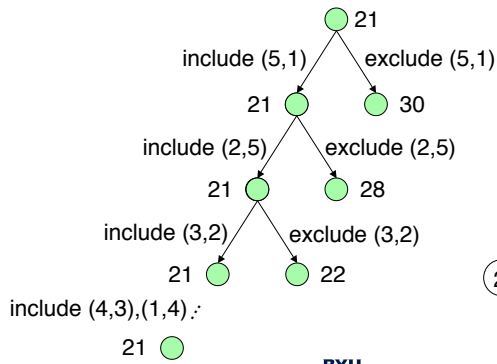
Consider edge (3,2)



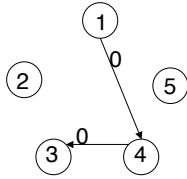
Tree so far



Tree so far



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Things to ponder

- Under what conditions can a node be killed?
 - Don't focus strictly on the bounds.
- Homework:
 - do the same TSP problem, but using the algorithm we discussed today.
 - do it before Thanksgiving for max. effectiveness.