

ass5(prob 2)

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1 Algorithm

we can see that bridges partition the graph into 2-edge-connected components. If we compress 2-edgeconnected components into vertices and only leave the bridges as edges in the compressed graph we can get a linear graph if we now add a edge (say (a,b)) then there will be three cases as follows

i.case 1

If the added vertice in on the samr 2-edgeconnected component then this edge will not be bridge hence no contribution on counting.

ii.case 2

If they are (a and b) on disconnected components then they can form edge hence contribute as one new edge

iii.case 3

If a and b are in same component but on different 2-edgeconnected components then they form cycle with older bridges which in turn reduces number of bridges as they fuse with older bridges to form cycle