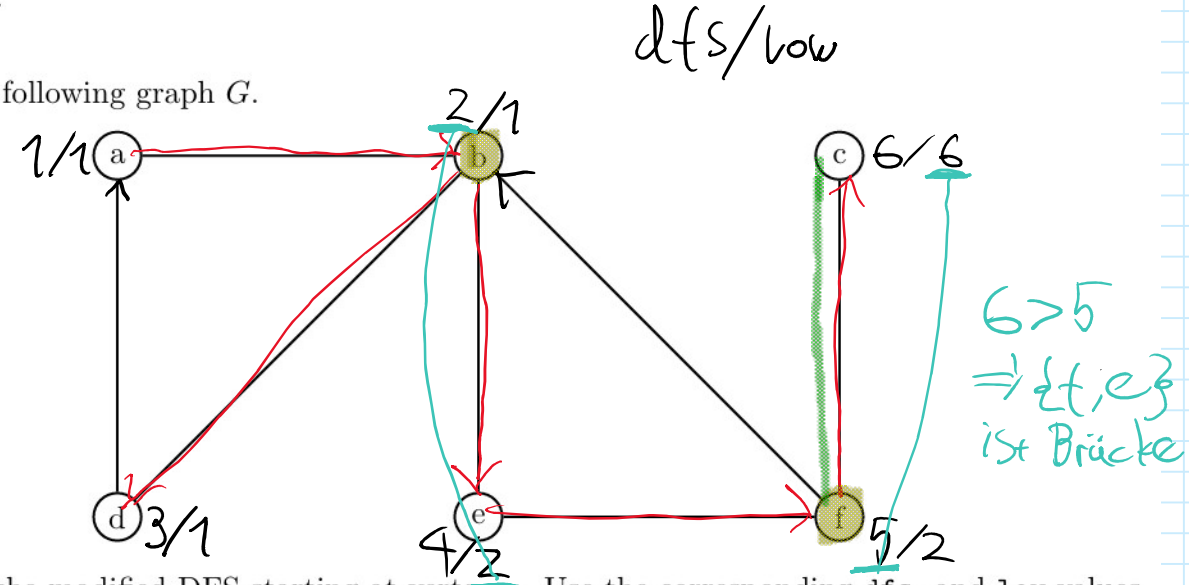
Exercise S2.1 – *Efficient Search for Brigdes and Cut-Vertices*

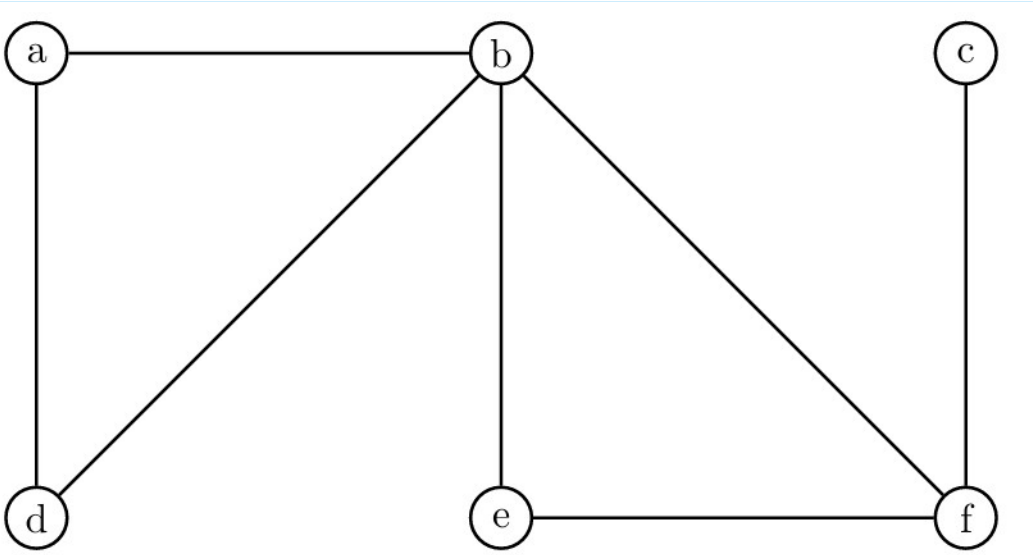
In the lecture we have seen how to find bridges (Brücken) and cut-vertices (Artikulationsknoten) in a graph. The algorithm uses a modified DFS and computes values `dfs[v]` and `low[v]` for ever vertex v.

Consider the following graph G.

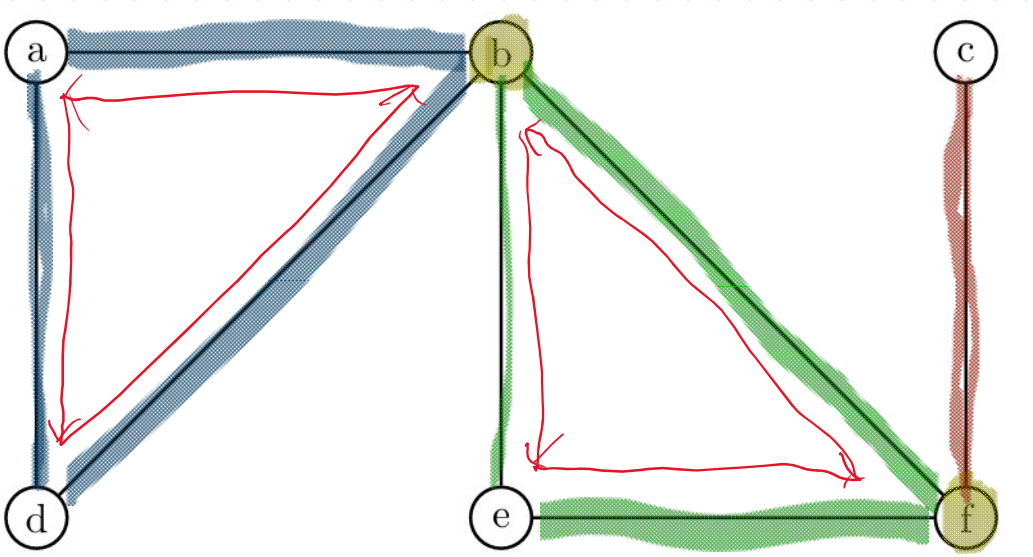


(a) Perform the modified DFS starting at vertex a. Use the corresponding `dfs`- and `low`-values to determine the cut-vertices and bridges of G.

(b) Try the same analysis, but starting in b. Do the `dfs`- and `low`-values change? Do the cut-vertices and bridges change?



(c) Compute the block graph of G.



Articulation points (from a), Cycles

Blocks

Block graph