Problem Set 4 - Graphs

Problem A

Quite a quick question this one was. One of the key things - that honestly took me longer than expected - to realise with this question, was that every application was from an employee of higher qualification, to an employee with lower qualification. This ultimately made it so that the graph in its base form already comes to us like a tree i.e. there were no checks that needed to be made about the employee qualifications.

All we needed to do in this question was - for every employee - check if there is at least one incoming edge (application), if not, we add one to the count of top level employees, and if so, we can greedily take the minimum application. We'll sum up all of our minimums, and then at the end, we just need to do a check to see if there wasn't more than 1 top level employee. If there were, there is no solution (Graph could be wrong or disjoint). If there weren't, we'll just print out the sum 🙂

Not the hardest question in the world, didn't take any pre-existing graphs knowledge and I think I remember this one being quite an easy one once I realised the qualifications meant nothing lol.