Project Explained

Recall the bus problem in Minimum Network flow (Min-flow) problem, we constructed a network representing the bus route, and when maximized, the arch i-j represents the number of tickets sold under the demand for passenger onboarding the bus in i heading to destination j.

The arches in the bottom of the network ensures the bus is not overloaded with an upper bound P. Also, given the nature of Min-flow, we the fare for bus rides are multiplied by -1.

The graph below represents the converted Min-flow problem, where fares (values of edges) are represented in green, upper bonds are coloured blue, and the differences between inflow and outflow on each vertex are in black. Without specification, all other parameters are free.

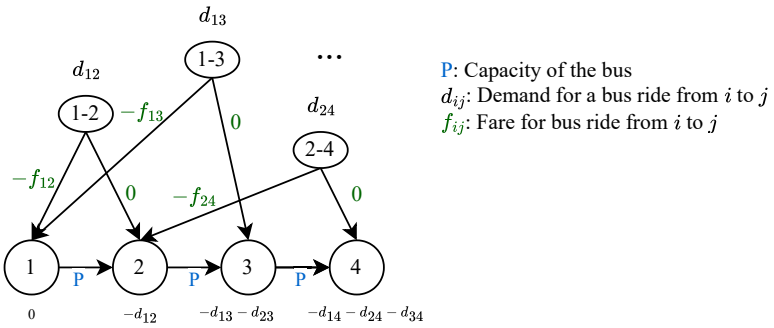

Fig 1: Bus problem

We observed that a meeting schedule is similar to a bus service with only one seat ($P = 1$), where the attandee is selecting meetings that "rides" a one-seater "bus" due to schedule conflicts.

In the modified problem, we define bottom vertices as the starting and ending times of meetings. We also specify f_{ij} as the values of the meeting elapses from time i to time j. Here is the modified Bus problem for a meeting schedule selecting program.

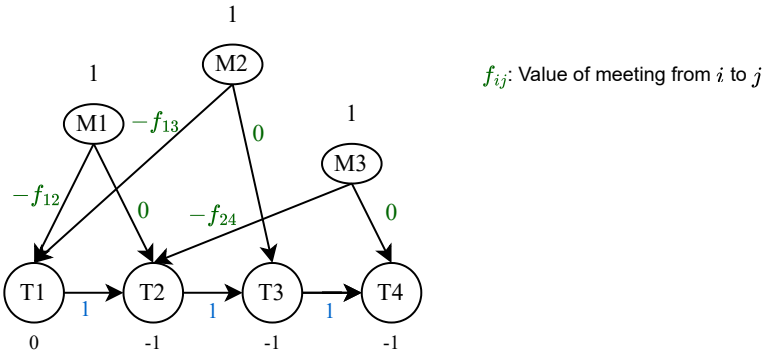

Fig 2: Schedule problem