Project Explanation

Recall the bus problem in the Minimum Network flow problem (Min-flow), we constructed a network representing the bus route, and, when minimized, 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 at the bottom of the network ensures the bus is not overloaded with an upper bound P. Also, by the nature of the Min-flow problem, fares for bus rides are multiplied by -1.

The graph below represents the minimized min-flow problem after conversion, where fares (non-zero values) are represented in green, the finite upperbonds on arches are coloured in blue, and the differences between inflow and outflow for vertices are presented in black. Without specification, all other parameters are unrestricted.

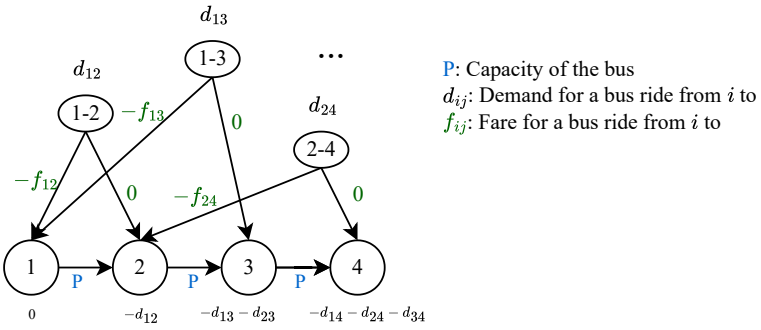

Fig 1: Bus problem

We observed that a meeting schedule is similar to a bus service with only one seat ($P = 1$), where the attendee is selecting between meetings that resembles selecting a passenger that "rides" on a one-seater "bus."

In the modified problem, we define bottom vertices as the start and end times of meetings. We define f_{ij} as the values of the meeting from time i to time j. Here is the modified Bus Problem for a meeting schedule optimization program.

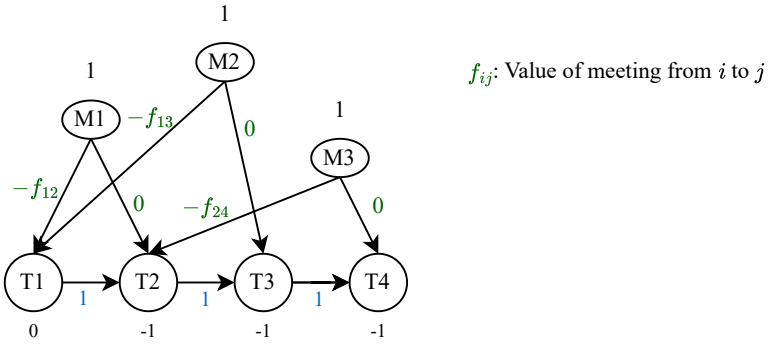

Fig 2: Schedule problem