**Objective Function**

**Variables**

We have a list for vaccination/registration staff and shift combination (e.g. [‘V1’, ‘May5-1’], [‘R1’, ‘May6-2’]). Each of these variables will be a binary value to signify if a worker is scheduled (1) or not (0). Each day is separated into 3 shifts: 8am-11:30am, 12pm-3:30pm, 3:30pm-6:30pm.

Therefore, we have:

* a list of 6 shifts (three shifts per day for 2 days) and 20 staff (10 vaccination staff and 10 registration staff)
* the number of workers needed for each shift: match to number of opening station
* the availability of each staff for each shift: assumed 3 unavailability
* a list of supervisors and a list of non-supervisors
* the cost of a shift for each worker, registration staff costs 50% less than vaccination staff
* global assumptions for min and max shifts

**Constraints**

* total shift constraint: ensures the number of staff are scheduled
* vaccination shift constraint: vaccination staff can be assigned to registration station, but cannot do it in the opposite way
* number of shift constraint: min 0; max 6 (need to be adjusted)
* supervisor constraint: ensures each shift has supervisors for the vaccination station and registration station respectively