

To run the program

1. Open CSP_140379F\dist directory
2. Ensure the inputfile and outputfile (.csv files) files are in the same directory.
3. Open cmd or terminal from that directory.
4. Type CSP_140379F.exe <inputfile_name>.csv <outputfile_name>.csv

Program

1. Read the inputs from <inputfile_name>.csv file. => inputData
2. Assign the room array as the last row of inputData
3. In order to get subject and timeSlot details => inputData.pop()
4. Divided the data to subs, categories and time slots using their order.
5. Give the priority to all subjects : Initial priority = 0,
if it is compulsory subject priority++
priority += no of timeSlots
6. Order subjects and timeslots, categories(compulsary or optional) using priority order.
7. Call assigningTimeSlots() function to assign the time slot.
8. If the assigningTimeSlots() function return true, then write the output(assigned timeSlots) to <outputfile_name>.csv file.

assigningTimeSlot()

1. assigned the time slots using their timeSlots, availableTimeSlots and their priority order.
2. When assign the time slots => call forwardChecking function to verify is the timeSlot is right or wrong.
3. Maintain separate arrays for assignedSubs, assignedTimeSlots, pendingSubs and availableTimeSlots.

forwardChecking()

1. copy the pendingSubs and availableTimeSlots and remove the currentSub and currentTimeSlot.
2. Check whether is there any one solution for other pendingSubs to get timeSlots in availableTimeSlots.
3. If it is true, return true.
4. If it is false, our earlier assigning was wrong, thus we need to backtrack.

Heuristics

1. Minimum remaining values.
2. Least constraining value.