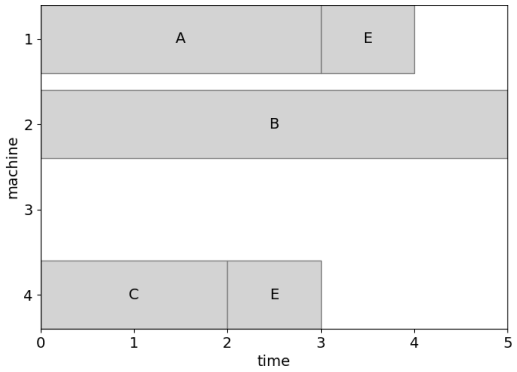
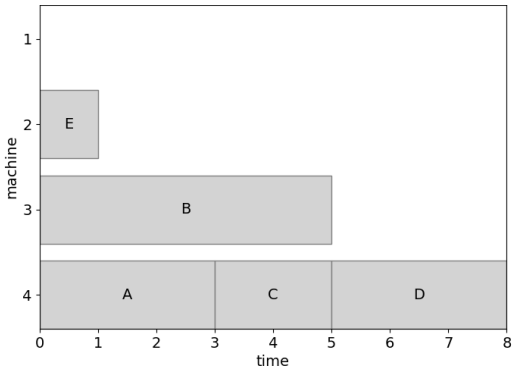
Makespan Schedule Explanation Questionnaire

This questionnaire will judge the general ability to understand and explain makespan schedule. Makespan schedules consist of m machines and n jobs. Every job is assigned to only one machine for the schedule to be feasible. Each job has a processing time. The objective is to minimise the longest collective processing time. Machines and jobs are denoted by integers $1, 2, 3, ...$ and by letters $A, B, C, ...$, respectively. A schedule is optimal when the longest collective processing time cannot be faster.



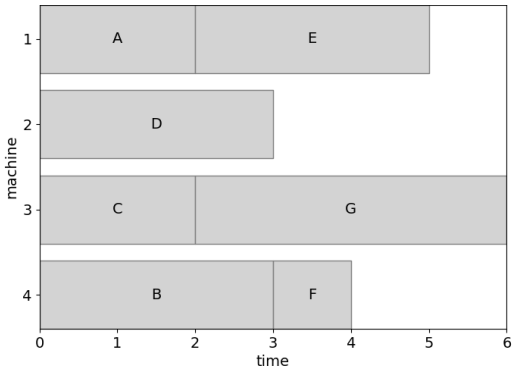
Schedule 1: Infeasible because D is not assigned to any machine and E is assigned to multiple machines.



Schedule 2: Non-optimal because jobs A, C, D can be moved to machine 1.

Aim to spend at most one minute for each question. Some questions are designed to be difficult.

1. Is this schedule optimal? If not, suggest how it could be improved.



2. This schedule is optimal. Suppose that job A cannot be assigned to machine 1 or 2 anymore. How could the schedule be modified to agree with this decision?