

Tutorials  
**Optimisation**  
2018  
Exercise Sheet 9

**Exercise 17:**

Suppose that we are given  $n$  tasks  $t_1, t_2, \dots, t_n$ . Each task  $t_i$  has a processing time  $p_i$ . For certain pairs  $(i, j)$ ,  $t_i$  must precede  $t_j$ , that is, the processing of  $t_j$  cannot begin until the processing of  $t_i$  is completed. We wish to schedule the processing of the tasks so that all of the tasks are completed as soon as possible.

- (a) Model this problem as a feasible potential problem on an acyclic digraph and provide an LP formulation for it.
- (b) Construct the dual of the LP.